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Présentation :


Ce numéro spécial du Dossier Thématique est structuré selon les types des bases de données. Le présent document recense l’essentiel des articles référencés dans la base de données en texte intégral ScienceDirect. Un total de 1215 notices d’articles de revues scientifiques est accessible via la base de données en texte intégral ScienceDirect.

Veuillez y trouver :

- “SARS-CoV-2” 146 Articles
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“SARS-CoV-2”
Abstract:

This paper concerns study of the genome of the Wuhan Seafood Market isolate believed to represent the causative agent of the disease COVID-19. This is to find a short section or sections of viral protein sequence suitable for preliminary design proposal for a peptide synthetic vaccine and a peptidomimetic therapeutic, and to explore some design possibilities. The project was originally directed towards a use case for the Q-UEL language and its implementation in a knowledge management and automated inference system for medicine called the BioIngine, but focus here remains mostly on the virus itself. However, using Q-UEL systems to access relevant and emerging literature, and to interact with standard publically available bioinformatics tools on the Internet, did help quickly identify sequences of amino acids that are well conserved across many coronaviruses including 2019-nCoV. KRSFIEDLLFNKV was found to be particularly well conserved in this study and corresponds to the region around one of the known cleavage sites of the SARS virus that are believed to be required for virus activation for cell entry. This sequence motif and surrounding variations formed the basis for proposing a specific synthetic vaccine epitope and peptidomimetic agent. The work can, nonetheless, be described in traditional bioinformatics terms, and readily reproduced by others, albeit with the caveat that new data and research into 2019-nCoV is emerging and evolving at an explosive pace. Preliminary studies using molecular modeling and docking, and in that context the potential value of certain known herbal extracts, are also described.

https://doi.org/10.1016/j.jtos.2020.03.010

First known person-to-person transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the USA
Abstract:

Background

Coronavirus disease 2019 (COVID-19) is a disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), first detected in China in December, 2019. In January, 2020, state, local, and federal public health agencies investigated the first case of COVID-19 in Illinois, USA.

Methods

Patients with confirmed COVID-19 were defined as those with a positive SARS-CoV-2 test. Contacts were people with exposure to a patient with COVID-19 on or after the patient's symptom onset date. Contacts underwent active symptom monitoring for 14 days following their last exposure. Contacts who developed fever, cough, or shortness of breath became persons under investigation and were tested for SARS-CoV-2. A convenience sample of 32 asymptomatic health-care personnel contacts were also tested.

Findings

Patient 1—a woman in her 60s—returned from China in mid-January, 2020. One week later, she was hospitalised with pneumonia and tested positive for SARS-CoV-2. Her husband (Patient 2) did not travel but had frequent close contact with his wife. He was admitted 8 days later and tested positive for SARS-CoV-2. Overall, 372 contacts of both cases were identified; 347 underwent active symptom monitoring, including 152 community contacts and 195 health-care personnel. Of monitored contacts, 43 became persons under investigation, in addition to Patient 2. These 43 persons under investigation and all 32 asymptomatic health-care personnel tested negative for SARS-CoV-2.

Interpretation

Person-to-person transmission of SARS-CoV-2 occurred between two people with prolonged, unprotected exposure while Patient 1 was symptomatic. Despite active symptom monitoring and testing of symptomatic and some asymptomatic contacts, no further transmission was detected.

Evidence for Gastrointestinal Infection of SARS-CoV-2

Gastroenterology, 2020

Fixed Reference

Samit Ghosal, Sumit Sengupta, Milan Majumder, Binayak Sinha

Linear Regression Analysis to predict the number of deaths in India due to SARS-CoV-2 at 6 weeks from day 0 (100 cases - March 14th 2020)

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 4, 2020, Pages 311-315
Abstract:

and Aims: No valid treatment or preventative strategy has evolved till date to counter the SARS CoV 2 (Novel Coronavirus) epidemic that originated in China in late 2019 and have since wrought havoc on millions across the world with illness, socioeconomic recession and death. This analysis was aimed at tracing a trend related to death counts expected at the 5th and 6th week of the COVID-19 in India.

Material and methods

Validated database was used to procure global and Indian data related to coronavirus and related outcomes. Multiple regression and linear regression analyses were used interchangeably. Since the week 6 death count data was not correlated significantly with any of the chosen inputs, an auto-regression technique was employed to improve the predictive ability of the regression model.

Results

A linear regression analysis predicted average week 5 death count to be 211 with a 95% CI: 1.31–2.60). Similarly, week 6 death count, in spite of a strong correlation with input variables, did not pass the test of statistical significance. Using auto-regression technique and using week 5 death count as input the linear regression model predicted week 6 death count in India to be 467, while keeping at the back of our mind the risk of over-estimation by most of the risk-based models.

Conclusion

According to our analysis, if situation continue in present state; projected death rate (n) is 211 and467 at the end of the 5th and 6th week from now, respectively.

https://doi.org/10.1016/j.dsx.2020.03.017

Joel R Koo, Alex R Cook, Minah Park, Yinxiaohe Sun, Haoyang Sun, Jue Tao Lim, Clarence Tam, Borame L Dickens

Interventions to mitigate early spread of SARS-CoV-2 in Singapore: a modelling study

The Lancet Infectious Diseases, 2020

Abstract:

Background

Since the coronavirus disease 2019 outbreak began in the Chinese city of Wuhan on Dec 31, 2019, 68 imported cases and 175 locally acquired infections have been reported in Singapore. We aimed to investigate options for early intervention in Singapore should local containment (eg, preventing disease spread through contact tracing efforts) be unsuccessful.

Methods

We adapted an influenza epidemic simulation model to estimate the likelihood of human-to-human transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in a simulated Singaporean population. Using this model, we estimated the cumulative number of SARS-CoV-2 infections at 80 days, after detection of 100 cases of community transmission, under three infectivity scenarios (basic reproduction number [R0] of 1·5, 2·0, or 2·5) and assuming 7·5% of infections are
asymptomatic. We first ran the model assuming no intervention was in place (baseline scenario), and then assessed the effect of four intervention scenarios compared with a baseline scenario on the size and progression of the outbreak for each R0 value. These scenarios included isolation measures for infected individuals and quarantining of family members (hereafter referred to as quarantine); quarantine plus school closure; quarantine plus workplace distancing; and quarantine, school closure, and workplace distancing (hereafter referred to as the combined intervention). We also did sensitivity analyses by altering the asymptomatic fraction of infections (22.7%, 30.0%, 40.0%, and 50.0%) to compare outbreak sizes under the same control measures.

Findings

For the baseline scenario, when R0 was 1·5, the median cumulative number of infections at day 80 was 279 000 (IQR 245 000–320 000), corresponding to 7·4% (IQR 6·5–8·5) of the resident population of Singapore. The median number of infections increased with higher infectivity: 727 000 cases (670 000–776 000) when R0 was 2·0, corresponding to 19·3% (17·8–20·6) of the Singaporean population, and 1 207 000 cases (1 164 000–1 249 000) when R0 was 2·5, corresponding to 32% (30·9–33·1) of the Singaporean population. Compared with the baseline scenario, the combined intervention was the most effective, reducing the estimated median number of infections by 99·3% (IQR 92·6–99·9) when R0 was 1·5, by 93·0% (81·5–99·7) when R0 was 2·0, and by 78·2% (59·0–94·4) when R0 was 2·5. Assuming increasing asymptomatic fractions up to 50·0%, up to 277 000 infections were estimated to occur at day 80 with the combined intervention relative to 1800 for the baseline at R0 of 1·5.

Interpretation

Implementing the combined intervention of quarantining infected individuals and their family members, workplace distancing, and school closure once community transmission has been detected could substantially reduce the number of SARS-CoV-2 infections. We therefore recommend immediate deployment of this strategy if local secondary transmission is confirmed within Singapore. However, quarantine and workplace distancing should be prioritised over school closure because at this early stage, symptomatic children have higher withdrawal rates from school than do symptomatic adults from work. At higher asymptomatic proportions, intervention effectiveness might be substantially reduced requiring the need for effective case management and treatments, and preventive measures such as vaccines.

https://doi.org/10.1016/S1473-3099(20)30162-6

E. Novy, J. Scala-Bertola, C. Roger, P. Guerci

Preliminary therapeutic drug monitoring data of β-lactams in critically ill patients with SARS-CoV-2 infection

Anaesthesia Critical Care & Pain Medicine, 2020

https://doi.org/10.1016/j.accpm.2020.04.005

Zhongliang Wang, Wanli Ma, Xin Zheng, Gang Wu, Ruiguang Zhang

Household Transmission of SARS-CoV-2

Journal of Infection, 2020
Abstract:
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has caused an epidemic in China and many other countries. Many infected clusters have been found within familial households, but the data about secondary transmission among household contacts is limited.

Methods
In this retrospective case series, we enrolled 85 patients infected with SARS-CoV-2 and their household members in Wuhan. Patients were confirmed infected with SARS-CoV-2 by real-time reverse transcription polymerase chain reaction (RT-PCR) assays on throat swabs. Epidemiological, clinical and laboratory data of the household members were collected.

Results
There were 155 close contacts in total. 104 contacts received RT-PCR assays, with 47 (30%) positive cases and 57 (37%) negative cases. 51 (33%) cases did not receive RT-PCR tests for they showed no symptoms of pneumonia during the 2 weeks of quarantine. The infection rate of close contacts was 38% for households with 1 contact, 50% for households with 2 contacts, and 31% for households with 3 contacts.

Conclusions
The rate of secondary transmission among household contacts of patients with SARS-CoV-2 infection was 30%. Our data provide insight into the rate of secondary transmission of SARS-CoV-2 in home.

https://doi.org/10.1016/j.jinf.2020.03.040

Mulong Du, Guoshuai Cai, Feng Chen, David C. Christiani, Zhengdong Zhang, Meilin Wang

Multi-omics Evaluation of Gastrointestinal and Other Clinical Characteristics of SARS-CoV-2 and COVID-19

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.03.045

Domenico Benvenuto, Silvia Angeletti, Marta Giovanetti, Martina Bianchi, Stefano Pascarella, Roberto Cauda, Massimo Ciccozzi, Antonio Cassone

Evolutionary analysis of SARS-CoV-2: how mutation of Non-Structural Protein 6 (NSP6) could affect viral autophagy

Journal of Infection, 2020

Abstract:
SARS-CoV-2 is a new coronavirus that has spread globally, infecting more than 150000 people, and being declared pandemic by the WHO. We provide here bio-informatic, evolutionary analysis of 351 available sequences of its genome with the aim of mapping genome structural variations and the patterns of selection.

Methods
A Maximum likelihood tree has been built and selective pressure has been investigated in order to find any mutation developed during the SARS-CoV-2 epidemic that could potentially affect clinical evolution of the infection.

Finding

We have found in more recent isolates the presence of two mutations affecting the Non-Structural Protein 6 (NSP6) and the Open Reading Frame10 (ORF 10) adjacent regions. Amino acidic change stability analysis suggests both mutations could confer lower stability of the protein structures.

Interpretation

One of the two mutations, likely developed within the genome during virus spread, could affect virus intracellular survival. Genome follow-up of SARS-CoV-2 spread is urgently needed in order to identify mutations that could significantly modify virus pathogenicity.

https://doi.org/10.1016/j.jinf.2020.03.058

George Cholankeril, Alexander Podboy, Vasiliki Irene Aivaliotis, Branden Tarlow, Edward A. Pham, Sean Spencer, Donghee Kim, Ann Hsing, Aijaz Ahmed

High Prevalence of Concurrent Gastrointestinal Manifestations in Patients with SARS-CoV-2: Early Experience from California

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.04.008

Li Runfeng, Hou Yunlong, Huang Jicheng, Pan Weiqi, Ma Qinhai, Shi Yongxia, Li Chufang, Zhao Jin, Jia Zhenhua, Jiang Haiming, Zheng Kui, Huang Shuxiang, Dai Jun, Li Xiaobo, Hou Xiaotao, Wang Lin, Zhong Nanshan, Yang Zifeng

Lianhuaqingwen exerts anti-viral and anti-inflammatory activity against novel coronavirus (SARS-CoV-2)

Pharmacological Research, Volume 156, 2020

Abstract:

Lianhuaqingwen (LH) as traditional Chinese medicine (TCM) formula has been used to treat influenza and exerted broad-spectrum antiviral effects on a series of influenza viruses and immune regulatory effects Ding et al. (2017). The goal of this study is to demonstrate the antiviral activity of LH against the novel SARS-CoV-2 virus and its potential effect in regulating host immune response.

Methods

The antiviral activity of LH against SARS-CoV-2 was assessed in Vero E6 cells using CPE and plaque reduction assay. The effect of LH on virion morphology was visualized under transmission electron microscope. Pro-inflammatory cytokine expression levels upon SARS-CoV-2 infection in Huh-7 cells were measured by real-time quantitative PCR assays.

Results
LH significantly inhibited SARS-CoV-2 replication in Vero E6 cells and markedly reduced pro-inflammatory cytokines (TNF-α, IL-6, CCL-2/MCP-1 and CXCL-10/IP-10) production at the mRNA levels. Furthermore, LH treatment resulted in abnormal particle morphology of virion in cells.

Conclusions

LH significantly inhibits the SARS-CoV-2 replication, affects virus morphology and exerts anti-inflammatory activity in vitro. These findings indicate that LH protects against the virus attack, making its use a novel strategy for controlling the COVID-19 disease.

https://doi.org/10.1016/j.phrs.2020.104761

Enrico Ammirati, Dao Wen Wang

SARS-CoV-2 inflames the heart. The importance of awareness of myocardial injury in COVID-19 patients

International Journal of Cardiology, 2020

https://doi.org/10.1016/j.ijcard.2020.03.086

Chih-Cheng Lai, Tzu-Ping Shih, Wen-Chien Ko, Hung-Jen Tang, Po-Ren Hsueh

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges


Abstract:

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; previously provisionally named 2019 novel coronavirus or 2019-nCoV) disease (COVID-19) in China at the end of 2019 has caused a large global outbreak and is a major public health issue. As of 11 February 2020, data from the World Health Organization (WHO) have shown that more than 43 000 confirmed cases have been identified in 28 countries/regions, with >99% of cases being detected in China. On 30 January 2020, the WHO declared COVID-19 as the sixth public health emergency of international concern. SARS-CoV-2 is closely related to two bat-derived severe acute respiratory syndrome-like coronaviruses, bat-SL-CoVZC45 and bat-SL-CoVZXC21. It is spread by human-to-human transmission via droplets or direct contact, and infection has been estimated to have mean incubation period of 6.4 days and a basic reproduction number of 2.24–3.58. Among patients with pneumonia caused by SARS-CoV-2 (novel coronavirus pneumonia or Wuhan pneumonia), fever was the most common symptom, followed by cough. Bilateral lung involvement with ground-glass opacity was the most common finding from computed tomography images of the chest. The one case of SARS-CoV-2 pneumonia in the USA is responding well to remdesivir, which is now undergoing a clinical trial in China. Currently, controlling infection to prevent the spread of SARS-CoV-2 is the primary intervention being used. However, public health authorities should keep monitoring the situation closely, as the more we can learn about this novel virus and its associated outbreak, the better we can respond.

https://doi.org/10.1016/j.ijantimicag.2020.105924
SARS-Cov-2 infection: Response of human immune system and possible implications for the rapid test and treatment

International Immunopharmacology, Volume 84, 2020

Abstract:

The new coronavirus Ubaid Ur Rahman is an ongoing pandemic that is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The new coronavirus SARS-Cov-2 belongs to the subfamily of β–coronaviruses and shares 79.5% of the genetic sequence of SARS-CoV, the causative agent of the epidemic that started in 2002 and ended in 2004. Considering the clinical impact of the new outbreak, it is highly important to study the potential responses of the human immune system during the SARS-CoV-2 infection as well as the role of virus-specific T cells and by B-lymphocytes. Moreover, specific data on the production of IgG and IgM is crucial to allow the rapid identification of the infection. In this paper we also described the importance of sensitive and specific rapid test for SARS-CoV-2. Indeed, this test represents an important immunological tool aimed at identifying the precise phase of the infection in order to undertake a more appropriate pharmacological treatment. Lastly, we provided an overview of pharmacological treatments aimed to reduce inflammatory processes underlying the infection and the need for the discovery of a new vaccine against SARS-CoV-2.

https://doi.org/10.1016/j.intimp.2020.106519

Farid Rahimi, Amin Talebi Bezmin Abadi

Challenges of managing the asymptomatic carriers of SARS-CoV-2

Travel Medicine and Infectious Disease, 2020

Abstract:

After an outbreak in Wuhan, China, a growing number of countries are now suffering from an epidemic by SARS-CoV-2, which causes COVID-19. Undoubtedly, reports of the skyrocketing global spread of COVID-19 has shocked people globally, from Japan to the United States. Presently, the World Health Organization indicates that fatality due to COVID-19 is about 2%, inferring that many positive subjects may potentially overcome the illness with mild influenza-like symptoms and no need for hospitalization at intensive-care units. Because COVID-19 is completely new to the human immune system, many throughout the world are likely vulnerable to becoming sick after their initial exposure to SARS-CoV-2. Besides hospitalized cases, many individuals are likely asymptomatic but potentially carry the virus. While our knowledge about carriers and their virus shedding is deficient, some studies modelling the viral transmission have considered the potential contribution of the asymptomatic carriers. Protocols for managing asymptomatic cases, for example for controlling them to restrict their contact with healthy people at public places or private residences, have not been established. In-house quarantine may as well be applicable to asymptomatic cases if they could be identified and diagnosed. Presumably now, the asymptomatic subjects potentially contribute to the transmission of COVID-19 without their knowledge, intention or being diagnosed as carriers. Thus, managing the asymptomatic cases, who can carry and likely transmit the virus, is a major healthcare challenge while a pandemic is looming.
Xinwei Du, Xue Yu, Qingqing Li, Xianyang Li, Tao Qin, Qiankun Luo, Miaomiao Wang, Minlin Jiang, Li Bai, Xiaoping Wang, Yanfeng Pan

**Duration for carrying SARS-CoV-2 in COVID-19 patients**
Journal of Infection, 2020

[https://doi.org/10.1016/j.jinf.2020.03.053](https://doi.org/10.1016/j.jinf.2020.03.053)

Gerard Kian-Meng Goh, A. Keith Dunker, James A. Foster, Vladimir N. Uversky

**Shell disorder analysis predicts greater resilience of the SARS-CoV-2 (COVID-19) outside the body and in body fluids**
Microbial Pathogenesis, Volume 144, 2020

**Abstract:**

The coronavirus (CoV) family consists of viruses that infects a variety of animals including humans with various levels of respiratory and fecal-oral transmission levels depending on the behavior of the viruses' natural hosts and optimal viral fitness. A model to classify and predict the levels of respective respiratory and fecal-oral transmission potentials of the various viruses was built before the outbreak of MERS-CoV using AI and empirically-based molecular tools to predict the disorder level of proteins. Using the percentages of intrinsic disorder (PID) of the nucleocapsid (N) and membrane (M) proteins of CoV, the model easily clustered the viruses into three groups with the SARS-CoV (M PID = 8%, N PID = 50%) falling into Category B, in which viruses have intermediate levels of both respiratory and fecal-oral transmission potentials. Later, MERS-CoV (M PID = 9%, N PID = 44%) was found to be in Category C, which consists of viruses with lower respiratory transmission potential but with higher fecal-oral transmission capabilities. Based on the peculiarities of disorder distribution, the SARS-CoV-2 (M PID = 6%, N PID = 48%) has to be placed in Category B. Our data show however, that the SARS-CoV-2 is very strange with one of the hardest protective outer shell, (M PID = 6%) among coronaviruses. This means that it might be expected to be highly resilient in saliva or other body fluids and outside the body. An infected body is likelier to shed greater numbers of viral particles since the latter is more resistant to antimicrobial enzymes in body fluids. These particles are also likelier to remain active longer. These factors could account for the greater contagiousness of the SARS-CoV-2 and have implications for efforts to prevent its spread.

[https://doi.org/10.1016/j.micpath.2020.104177](https://doi.org/10.1016/j.micpath.2020.104177)

Feng Pan, Xingyuan Xiao, Jingtao Guo, Yarong Song, Honggang Li, Darshan P. Patel, Adam M. Spivak, Joseph, P. Alukal, Xiaoping Zhang, Chengliang Xiong, Philip S. Li, James M. Hotaling

**No evidence of SARS-CoV-2 in semen of males recovering from COVID-19**
Fertility and Sterility, 2020

**Abstract:**
To describe detection of SARS-CoV-2 in seminal fluid of patients recovering from COVID-19 and describe the expression profile of ACE2 and TMPRSS2 within the testicle.

Design

observational, cross-sectional study

Setting

Tertiary referral center

Patients

Thirty-four adult Chinese males diagnosed with COVID-19 through confirmatory quantitative reverse transcriptase-polymerase chain reaction (qRT-PCR) from pharyngeal swab samples

Intervention

None

Main Outcome Measures

Identification of SARS-CoV-2 on qRT-PCR of single ejaculated semen samples. Semen quality was not assessed. Expression patterns of ACE2 and TMPRSS2 in the human testis are explored through previously published single-cell transcriptome datasets.

Results

Six patients (19%) demonstrated scrotal discomfort concerning for viral orchitis around the time of COVID-19 confirmation. SARS-CoV-2 was not detected in semen after a median of 31 days (IQR: 29-36 days) from COVID-19 diagnosis. Single-cell transcriptome analysis demonstrates sparse expression of ACE2 and TMPRSS2, with almost no overlapping gene expression.

Conclusions

SARS-CoV-2 was not detected in the semen of patients recovering from COVID-19 one month after COVID-19 diagnosis. ACE2-mediated viral entry of SARS-CoV-2 into target host cells is unlikely to occur within the human testicle based on ACE2 and TMPRSS2 expression. The long-term effects of SARS-CoV-2 on male reproductive function remain unknown.

https://doi.org/10.1016/j.fertnstert.2020.04.024

Carmen V. McDermott, Radica Z. Alicic, Niels Harden, Emily J. Cox, James M. Scanlan

Put a lid on it: Are faecal bio-aerosols a route of transmission for SARS-CoV-2?

Journal of Hospital Infection, 2020

https://doi.org/10.1016/j.jhin.2020.04.024

L. Cegolon

Investigating hypothiocyanite against SARS-CoV-2

International Journal of Hygiene and Environmental Health, Volume 227, 2020
Coagulation disorders in coronavirus infected patients: COVID-19, SARS-CoV-1, MERS-CoV and lessons from the past

Journal of Clinical Virology, Volume 127, 2020

Abstract:
Coronavirus disease 2019 (COVID-19) or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a novel coronavirus strain disease, has recently emerged in China and rapidly spread worldwide. This novel strain is highly transmittable and severe disease has been reported in up to 16% of hospitalized cases. More than 600,000 cases have been confirmed and the number of deaths is constantly increasing. COVID-19 hospitalized patients, especially those suffering from severe respiratory or systemic manifestations, fall under the spectrum of the acutely ill medical population, which is at increased venous thromboembolism risk. Thrombotic complications seem to emerge as an important issue in patients infected with COVID-19. Preliminary reports on COVID-19 patients’ clinical and laboratory findings include thrombocytopenia, elevated D-dimer, prolonged prothrombin time, and disseminated intravascular coagulation. As the pandemic is spreading and the whole picture is yet unknown, we highlight the importance of coagulation disorders in COVID-19 infected patients and review relevant data of previous coronavirus epidemics caused by the severe acute respiratory syndrome coronavirus 1 (SARS-CoV-1) and the Middle East Respiratory Syndrome coronavirus (MERS-CoV).

Perspectives: Potential Therapeutic Options for SARS-CoV-2 Patients Based on Feline Infectious Peritonitis Strategies: Central Nervous System Invasion and Drug Coverage

International Journal of Antimicrobial Agents, 2020

Evaluation of the lockdowns for the SARS-CoV-2 epidemic in Italy and Spain after one month follow up

Science of The Total Environment, Volume 725, 2020

Abstract:
From the end of February, the SARS-CoV-2 epidemic in Spain has been following the footsteps of that in Italy very closely. We have analyzed the trends of incident cases, deaths, and intensive care unit admissions (ICU) in both countries before and after their respective national lockdowns using
an interrupted time-series design. Data was analyzed with quasi-Poisson regression using an interaction model to estimate the change in trends. After the first lockdown, incidence trends were considerably reduced in both countries. However, although the slopes have been flattened for all outcomes, the trends kept rising. During the second lockdown, implementing more restrictive measures for mobility, it has been a change in the trend slopes for both countries in daily incident cases and ICUs. This improvement indicates that the efforts overtaken are being successful in flattening the epidemic curve, and reinforcing the belief that we must hold on.

https://doi.org/10.1016/j.scitotenv.2020.138539


Infection par le SARS-CoV-2 chez les femmes enceintes : état des connaissances et proposition de prise en charge par CNGOF

Gynécologie Obstétrique Fertilité & Sénologie, 2020

Abstract:

A new coronavirus (SARS-CoV-2) highlighted at the end of 2019 in China is spreading across all continents. Most often at the origin of a mild infectious syndrome, associating mild symptoms (fever, cough, myalgia, headache and possible digestive disorders) to different degrees, SARS-CoV-2 can cause serious pulmonary pathologies and sometimes death. Data on the consequences during pregnancy are limited. The first Chinese data published seem to show that the symptoms in pregnant women are the same as those of the general population. There are no cases of intrauterine maternal-fetal transmission, but cases of newborns infected early suggest that there could be vertical perpartum or neonatal transmission. Induced prematurity and cases of respiratory distress in newborns of infected mothers have been described. Pregnancy is known as a period at higher risk for the consequences of respiratory infections, as for influenza, so it seems important to screen for Covid-19 in the presence of symptoms and to monitor closely pregnant women. In this context of the SARS-CoV-2 epidemic, the societies of gynecology-obstetrics, infectious diseases and
neonatology have proposed a French protocol for the management of possible and proven cases of SARS-Covid-2 in pregnant women. These proposals may evolve on a daily basis with the advancement of the epidemic and knowledge in pregnant women. Subsequently, an in-depth analysis of cases in pregnant women will be necessary in order to improve knowledge on the subject.

https://doi.org/10.1016/j.gofs.2020.03.014

Jaffar A. Al-Tawfiq

**Asymptomatic coronavirus infection: MERS-CoV and SARS-CoV-2 (COVID-19)**

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101608

Yunbao Pan, Xinran Li, Gui Yang, Junli Fan, Yueting Tang, Jin Zhao, Xinghua Long, Shuang Guo, Ziwu Zhao, Yinjuan Liu, Hanning Hu, Han Xue, Yirong Li

**Serological immunochromatographic approach in diagnosis with SARS-CoV-2 infected COVID-19 patients**

Journal of Infection, 2020

**Abstract:**

An outbreak of new coronavirus SARS-CoV-2 was occurred in Wuhan, China and rapidly spread to other cities and nations. The standard diagnostic approach that widely adopted in the clinic is nucleic acid detection by real-time RT-PCR. However, the false-negative rate of the technique is unneglectable and serological methods are urgently warranted. Here, we presented the colloidal gold-based immunochromatographic (ICG) strip targeting viral IgM or IgG antibody and compared it with real-time RT-PCR. The sensitivity of ICG assay with IgM and IgG combinatorial detection in nucleic acid confirmed cases were 11.1%, 92.9% and 96.8% at the early stage (1–7 days after onset), intermediate stage (8–14 days after onset), and late stage (more than 15 days), respectively. The ICG detection capacity in nucleic acid-negative suspected cases was 43.6%. In addition, the concordance of whole blood samples and plasma showed Cohen's kappa value of 0.93, which represented the almost perfect agreement between two types of samples. In conclusion, serological ICG strip assay in detecting SARS-CoV-2 infection is both sensitive and consistent, which is considered as an excellent supplementary approach in clinical application.

https://doi.org/10.1016/j.jinf.2020.03.051

Rui Huang, Juan Xia, Yuxin Chen, Chun Shan, Chao Wu

**A family cluster of SARS-CoV-2 infection involving 11 patients in Nanjing, China**

The Lancet Infectious Diseases, 2020

https://doi.org/10.1016/S1473-3099(20)30147-X

**Rapid point-of-care testing for SARS-CoV-2 in a community screening setting shows low sensitivity**

Public Health, 2020

**Abstract:**

**Objective**

With the current SARS-CoV2 outbreak, countless tests need to be performed on potential symptomatic individuals, contacts and travellers. The gold standard is a quantitative polymerase chain reaction (qPCR)–based system taking several hours to confirm positivity. For effective public health containment measures, this time span is too long. We therefore evaluated a rapid test in a high-prevalence community setting.

**Study design**

Thirty-nine randomly selected individuals at a COVID-19 screening centre were simultaneously tested via qPCR and a rapid test. Ten previously diagnosed individuals with known SARS-CoV-2 infection were also analysed.

**Methods**

The evaluated rapid test is an IgG/IgM–based test for SARS-CoV-2 with a time to result of 20 min. Two drops of blood are needed for the test performance.

**Results**

Of 49 individuals, 22 tested positive by repeated qPCR. In contrast, the rapid test detected only eight of those positive correctly (sensitivity: 36.4%). Of the 27 qPCR-negative individuals, 24 were detected correctly (specificity: 88.9%).

**Conclusion**

Given the low sensitivity, we recommend not to rely on an antibody-based rapid test for public health measures such as community screenings.

https://doi.org/10.1016/j.puhe.2020.04.009

Ding-feng Lv, Qi-ming Ying, Yue-song Weng, Chi-bin Shen, Jin-guo Chu, Jing-ping Kong, Ding-he Sun, Xiang Gao, Xing-bei Weng, Xue-qin Chen

**Dynamic change process of target genes by RT-PCR testing of SARS-CoV-2 during the course of a Coronavirus Disease 2019 patient**

Clinica Chimica Acta, Volume 506, 2020, Pages 172-175

**Abstract:**

We report the dynamic change process of target genes by RT-PCR testing of SARS-CoV-2 during the course of a COVID-19 patient: from successive negative results to successive single positive
nucleocapsid gene, to two positive target genes (orf1ab and nucleocapsid) by RT-PCR testing of SARS-Cov-2, and describe the diagnosis, clinical course, and management of the case. In this case, negative results of RT-PCR testing was not excluded to diagnose a suspected COVID-19 patient, clinical signs and symptoms, other laboratory findings, and chest CT images should be taken into account for the absence of enough positive evidence. This case highlights the importance of successive sampling and testing SARS-Cov-2 by RT-PCR as well as the increased value of single positive target gene from pending to positive in two specimens to diagnose laboratory-confirmed COVID-19.

https://doi.org/10.1016/j.cca.2020.03.032

Yvan Jamilloux, Jean-Christophe Lega

La médecine interne dans la pandémie à SARS-CoV-2
La Revue de Médecine Interne, 2020
https://doi.org/10.1016/j.revmed.2020.04.003

Jacques Fantini, Coralie Di Scala, Henri Chahinian, Nouara Yahi

Structural and molecular modelling studies reveal a new mechanism of action of chloroquine and hydroxychloroquine against SARS-CoV-2 infection

International Journal of Antimicrobial Agents, 2020

Abstract:

The recent emergence of the novel pathogenic SARS-coronavirus 2 (SARS-CoV-2) is responsible for a worldwide pandemic. Given the global health emergency, drug repositioning is the most reliable option to design an efficient therapy for infected patients without delay. The first step of the viral replication cycle [i.e. attachment to the surface of respiratory cells, mediated by the spike (S) viral protein] offers several potential therapeutic targets. The S protein uses the angiotension-converting enzyme-2 (ACE-2) receptor for entry, but also sialic acids linked to host cell surface gangliosides. Using a combination of structural and molecular modelling approaches, this study showed that chloroquine (CLQ), one of the drugs currently under investigation for SARS-CoV-2 treatment, binds sialic acids and gangliosides with high affinity. A new type of ganglioside-binding domain at the tip of the N-terminal domain of the SARS-CoV-2 S protein was identified. This domain (111–158), which is fully conserved among clinical isolates worldwide, may improve attachment of the virus to lipid rafts and facilitate contact with the ACE-2 receptor. This study showed that, in the presence of CLQ [or its more active derivative, hydroxychloroquine (CLQ-OH)], the viral S protein is no longer able to bind gangliosides. The identification of this new mechanism of action of CLQ and CLQ-OH supports the use of these repositioned drugs to cure patients infected with SARS-CoV-2. The in-silico approaches used in this study might also be used to assess the efficiency of a broad range of repositioned and/or innovative drug candidates before clinical evaluation.

https://doi.org/10.1016/j.ijantimicag.2020.105960
Yihui Huang, Mengqi Tu, Shipei Wang, Sichao Chen, Wei Zhou, Danyang Chen, Lin Zhou, Min Wang, Yan Zhao, Wen Zeng, Qi Huang, Hai’bo Xu, Zeming Liu, Liang Guo

**Clinical characteristics of laboratory confirmed positive cases of SARS-CoV-2 infection in Wuhan, China: A retrospective single center analysis**

*Travel Medicine and Infectious Disease, 2020*

[https://doi.org/10.1016/j.tmaid.2020.101606](https://doi.org/10.1016/j.tmaid.2020.101606)

Zhikun Zeng, Liangjun Chen, Yunbao Pan, Qiaoling Deng, Guangming Ye, Yirong Li, Xinghuan Wang

**Re: Profile of specific antibodies to SARS-CoV-2: The first report**

*Journal of Infection, 2020*

[https://doi.org/10.1016/j.jinf.2020.03.052](https://doi.org/10.1016/j.jinf.2020.03.052)

Dmitry Ivanov

**Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case**

*Transportation Research Part E: Logistics and Transportation Review, Volume 136, 2020*

**Abstract:**

Epidemic outbreaks are a special case of supply chain (SC) risks which is distinctively characterized by a long-term disruption existence, disruption propagations (i.e., the ripple effect), and high uncertainty. We present the results of a simulation study that opens some new research tensions on the impact of COVID-19 (SARS-CoV-2) on the global SCs. First, we articulate the specific features that frame epidemic outbreaks as a unique type of SC disruption risks. Second, we demonstrate how simulation-based methodology can be used to examine and predict the impacts of epidemic outbreaks on the SC performance using the example of coronavirus COVID-19 and anyLogistix simulation and optimization software. We offer an analysis for observing and predicting both short-term and long-term impacts of epidemic outbreaks on the SCs along with managerial insights. A set of sensitivity experiments for different scenarios allows illustrating the model’s behavior and its value for decision-makers. The major observation from the simulation experiments is that the timing of the closing and opening of the facilities at different echelons might become a major factor that determines the epidemic outbreak impact on the SC performance rather than an upstream disruption duration or the speed of epidemic propagation. Other important factors are lead-time, speed of epidemic propagation, and the upstream and downstream disruption durations in the SC. The outcomes of this research can be used by decision-makers to predict the operative and long-term impacts of epidemic outbreaks on the SCs and develop pandemic SC plans. Our approach can also help to identify the successful and wrong elements of risk mitigation/preparedness and recovery policies in case of epidemic outbreaks. The paper is concluded by summarizing the most important insights and outlining future research agenda.

Clinical and computed tomographic imaging features of novel coronavirus pneumonia caused by SARS-CoV-2

Journal of Infection, Volume 80, Issue 4, 2020

Abstract:

Purpose

To investigate the clinical and imaging characteristics of computed tomography (CT) in novel coronavirus pneumonia (NCP) caused by SARS-CoV-2.

Materials and methods

A retrospective analysis was performed on the imaging findings of patients confirmed with COVID-19 pneumonia who had chest CT scanning and treatment after disease onset. The clinical and imaging data were analyzed.

Results

Fifty patients were enrolled, including mild type in nine, common in 28, severe in 10 and critically severe in the rest three. Mild patients (29 years) were significantly (P<0.03) younger than either common (44.5 years) or severe (54.7) and critically severe (65.7 years) patients, and common patients were also significantly (P<0.03) younger than severe and critically severe patients. Mild patients had low to moderate fever (<39.1 °C), 49 (98%) patients had normal or slightly reduced leukocyte count, 14 (28%) had decreased counts of lymphocytes, and 26 (52%) patients had increased C-reactive protein. Nine mild patients were negative in CT imaging. For all the other types of NCP, the lesion was in the right upper lobe in 30 cases, right middle lobe in 22, right lower lobe in 39, left upper lobe in 33 and left lower lobe in 36. The lesion was primarily located in the peripheral area under the pleura with possible extension towards the pulmonary hilum. Symmetrical lesions were seen in 26 cases and asymmetrical in 15. The density of lesion was mostly uneven with ground glass opacity as the primary presentation accompanied by partial consolidation and fibrosis.

Conclusion

CT imaging presentations of NCP are mostly patchy ground glass opacities in the peripheral areas under the pleura with partial consolidation which will be absorbed with formation of fibrotic stripes if improved. CT scanning provides important bases for early diagnosis and treatment of NCP.

https://doi.org/10.1016/j.jinf.2020.02.017

A search for medications to treat COVID-19 via in silico molecular docking models of the SARS-CoV-2 spike glycoprotein and 3CL protease

Travel Medicine and Infectious Disease, 2020

Abstract:
The COVID-19 has now been declared a global emergency by the World Health Organization. There is an emergent need to search for possible medications.

Method

Utilization of the available sequence information, homology modeling, and in silico docking a number of available medications might prove to be effective in inhibiting the COVID-19 two main drug targets the spike glycoprotein and the 3CL protease.

Results

Several compounds were determined from the in silico docking models that might prove to be effective inhibitor for the COVID-19. Several antiviral medications: Zanamivir, Indinavir, Saquinavir, and Remdesivir show potential as and 3CLPRO main proteinase inhibitors and as a treatment of COVID-19.

Conclusion

Zanamivir, Indinavir, Saquinavir, and Remdesivir are among the exciting hits on the 3CLPRO main proteinase. It is also exciting to uncover that Flavin Adenine Dinucleotide (FAD) Adeflavin, B2 Deficiency medicine, and Coenzyme A, a coenzyme, may also be potentially used for the treatment of SARS-CoV-2 infections. The use of these off-label medications may be beneficial in the treatment of the COVID-19.

https://doi.org/10.1016/j.tmaid.2020.101646

Osama M. Al-Quteimat, Amer Mustafa Amer

SARS-CoV-2 outbreak: How can pharmacists help?

Research in Social and Administrative Pharmacy, 2020

Abstract:

Coronaviruses (CoVs) are a large family of viruses that cause disorders ranging from a mild cold to severe disease. Some of the CoVs are zoonotic, meaning they can be transmitted from animals to humans. In December 2019, the world awoke to a new zoonotic strain of CoV that was named SARS-CoV-2 (standing for severe acute respiratory syndrome coronavirus 2), which has been classified as a high-consequence infectious disease. In addition, serious complications related to COVID-19 have been reported in some patients. These include acute respiratory distress syndrome, acute renal failure, septic shock and ventilator-associated pneumonia. The pharmacist, as a healthcare practitioner, can play an important role in hindering the spread of COVID-19, and can be an active participant in national and community efforts to fight and contain this outbreak.

https://doi.org/10.1016/j.sapharm.2020.03.018

Yang Pan, Daitao Zhang, Peng Yang, Leo L M Poon, Quanyi Wang

Viral load of SARS-CoV-2 in clinical samples

The Lancet Infectious Diseases, Volume 20, Issue 4, 2020

https://doi.org/10.1016/S1473-3099(20)30113-4
First confirmed detection of SARS-CoV-2 in untreated wastewater in Australia: A proof of concept for the wastewater surveillance of COVID-19 in the community

Science of The Total Environment, 2020

Abstract:

Infection with SARS-CoV-2, the etiologic agent of the ongoing COVID-19 pandemic, is accompanied by the shedding of the virus in stool. Therefore, the quantification of SARS-CoV-2 in wastewater affords the ability to monitor the prevalence of infections among the population via wastewater-based epidemiology (WBE). In the current work, SARS-CoV-2 RNA was concentrated from wastewater in a catchment in Australia and viral RNA copies were enumerated using reverse transcriptase quantitative polymerase chain reaction (RT-qPCR) resulting in two positive detections within a six day period from the same wastewater treatment plant (WWTP). The estimated RNA copy numbers observed in the wastewater were then used to estimate the number of infected individuals in the catchment via Monte Carlo simulation. Given the uncertainty and variation in the input parameters, the model estimated a median range of 171 to 1090 infected persons in the catchment, which is in reasonable agreement with clinical observations. This work highlights the viability of WBE for monitoring infectious diseases, such as COVID-19, in communities. The work also draws attention to the need for further methodological and molecular assay validation for enveloped viruses in wastewater.

https://doi.org/10.1016/j.scitotenv.2020.138764

Pregnant versus non-pregnant SARS-CoV-2 and COVID-19 Hospital Admissions: The first 4 weeks in New York

American Journal of Obstetrics and Gynecology, 2020

https://doi.org/10.1016/j.ajog.2020.04.012

SARS-CoV-2 shedding and infectivity – Authors' reply

The Lancet, 2020

https://doi.org/10.1016/S0140-6736(20)30869-2

Anna Petherick
Developing antibody tests for SARS-CoV-2

The Lancet, Volume 395, Issue 10230, 2020

https://doi.org/10.1016/S0140-6736(20)30788-1


A field indoor air measurement of SARS-CoV-2 in the patient rooms of the largest hospital in Iran

Science of The Total Environment, Volume 725, 2020

Abstract:

The coronavirus disease 2019 (COVID-19) emerged in Wuhan city, China, in late 2019 and has rapidly spread throughout the world. The major route of transmission of SARS-CoV-2 is in contention, with the airborne route a likely transmission pathway for carrying the virus within indoor environments. Until now, there has been no evidence for detection of airborne severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and this may have implication for the potential spread of the COVID-19. We investigated the air of patient rooms with confirmed COVID-19 in the largest hospital in Iran, on March 17, 2020. To collect the SARS-CoV-2 particles, ten air samples were collected into the sterile standard midget impingers containing 20 mL DMEM with 100 μg/mL streptomycin, 100 U/mL penicillin and 1% antifoam reagent for 1 h. Besides, indoor particle number concentrations, CO2, relative humidity and temperature were recorded throughout the sampling duration. Viral RNA was extracted from samples taken from the impingers and Reverse-Transcription PCR (RT-PCR) was applied to confirm the positivity of collected samples based on the virus genome sequence. Fortunately, in this study all air samples which were collected 2 to 5 m from the patients’ beds with confirmed COVID-19 were negative. Despite we indicated that all air samples were negative, however, we suggest further in vivo experiments should be conducted using actual patient cough, sneeze and breath aerosols in order to show the possibility of generation of the airborne size carrier aerosols and the viability fraction of the embedded virus in those carrier aerosols.

https://doi.org/10.1016/j.scitotenv.2020.138401

Massoud Sokouti, Ramin Sadeghi, Saeid Pashazadeh, Saeid Eslami, Mohsen Sokouti, Morteza Ghojazadeh, Babak Sokouti

Comparative Global Epidemiological Investigation of SARS-CoV-2 and SARS-CoV Diseases Using Meta-MUMS Tool Through Incidence, Mortality, and Recovery Rates

Archives of Medical Research, 2020

https://doi.org/10.1016/j.arcmed.2020.04.005
Nicola Decaro, Alessio Lorusso

**Novel human coronavirus (SARS-CoV-2): A lesson from animal coronaviruses**

Veterinary Microbiology, Volume 244, 2020

**Abstract:**

The recent pandemic caused by the novel human coronavirus, referred to as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), not only is having a great impact on the health care systems and economies in all continents but it is also causing radical changes of common habits and life styles. The novel coronavirus (CoV) recognizes, with high probability, a zoonotic origin but the role of animals in the SARS-CoV-2 epidemiology is still largely unknown. However, CoVs have been known in animals since several decades, so that veterinary coronavirologists have a great expertise on how to face CoV infections in animals, which could represent a model for SARS-CoV-2 infection in humans. In the present paper, we provide an up-to-date review of the literature currently available on animal CoVs, focusing on the molecular mechanisms that are responsible for the emergence of novel CoV strains with different antigenic, biologic and/or pathogenetic features. A full comprehension of the mechanisms driving the evolution of animal CoVs will help better understand the emergence, spreading, and evolution of SARS-CoV-2.

https://doi.org/10.1016/j.vetmic.2020.108693


**Gastrointestinal Manifestations of SARS-CoV-2 Infection and Virus Load in Fecal Samples from the Hong Kong Cohort and Systematic Review and Meta-analysis**

Gastroenterology, 2020

**Abstract:**

Infection with SARS-CoV-2 causes COVID-19, which has been characterized by fever, respiratory, and gastrointestinal symptoms as well as shedding of virus RNA into feces. We performed a systematic review and meta-analysis of published gastrointestinal symptoms and detection of virus in stool, and also summarized data from a cohort of patients with COVID-19 in Hong Kong.

**Methods**

We collected data from the cohort of patients with COVID-19 in Hong Kong (n=59; diagnosis from February 2 through Feb 29, 2020), and searched PubMed, Embase, Cochrane and three Chinese databases through March 11, 2020 according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. We analyzed pooled data on the prevalence of overall and individual gastrointestinal symptoms (anorexia, nausea, vomiting, diarrhea, and abdominal pain or discomfort) using a random effects model.

**Results**
Among the 59 patients with COVID-19 in Hong Kong, 15 patients (25.4%) had gastrointestinal symptoms and 9 patients (15.3%) had stool that tested positive for virus RNA. Stool viral RNA was detected in 38.5% and 8.7% among those with and without diarrhea, respectively (P=.02). The median fecal viral load was 5.1 log10cpm in patients with diarrhea vs 3.9 log10cpm in patients without diarrhea (P=.06). In a meta-analysis of 60 studies, comprising 4243 patients, the pooled prevalence of all gastrointestinal symptoms was 17.6% (95% CI, 12.3%–24.5%); 11.8% of patients with non-severe COVID-19 had gastrointestinal symptoms (95% CI, 4.1%–29.1%) and 17.1% of patients with severe COVID-19 had gastrointestinal symptoms (95% CI, 6.9%–36.7%). In the meta-analysis, the pooled prevalence of stool samples that were positive for virus RNA was 48.1% (95% CI, 38.3%–57.9%); of these samples, 70.3% of those collected after loss of virus from respiratory specimens tested positive for the virus (95% CI, 49.6%–85.1%).

Conclusions

In an analysis of data from the Hong Kong cohort of patients with COVID-19 and a meta-analysis of findings from publications, we found that 17.6% of patients with COVID-19 had gastrointestinal symptoms. Virus RNA was detected in stool samples from 48.1% patients—even in stool collected after respiratory samples tested negative. Healthcare workers should therefore exercise caution in collecting fecal samples or performing endoscopic procedures in patients with COVID-19—even during patient recovery.

https://doi.org/10.1053/j.gastro.2020.03.065

Walter D. Cardona Maya, Stefan S. Du Plessis, Paula A. Velilla

**SARS-CoV-2 and the Testis: similarity to other viruses and routes of infection**

Reproductive BioMedicine Online, 2020

**Abstract:**

Since the latest coronavirus outbreak, the number of infected individuals and COVID-19 cases have been increasing exponentially worldwide. Of interest is the evidence that orchitis can develop due to coronavirus infection. Therefore, it is not unreasonable to believe that the latest coronavirus, SARS-CoV-2, could be transmitted by semen. Consequently, it is paramount that individuals who could potentially be infected take all possible care to mitigate the likely risk of infection through sexual intercourse.

https://doi.org/10.1016/j.rbmo.2020.04.009
Abdo A. Elfiky

Ribavirin, Remdesivir, Sofosbuvir, Galidesivir, and Tenofovir against SARS-CoV-2 RNA dependent RNA polymerase (RdRp): A molecular docking study
Life Sciences, 2020

Abstract:
A new human coronavirus (HCoV), which has been designated SARS-CoV-2, began spreading in December 2019 in Wuhan City, China causing pneumonia called COVID-19. The spread of SARS-CoV-2 has been faster than any other coronaviruses that have succeeded in crossing the animal-human barrier. There is concern that this new virus will spread around the world as did the previous two HCoVs—Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)—each of which caused approximately 800 deaths in the years 2002 and 2012, respectively. Thus far, 11,268 deaths have been reported from the 258,842 confirmed infections in 168 countries.

Main methods
In this study, the RNA-dependent RNA polymerase (RdRp) of the newly emerged coronavirus is modeled, validated, and then targeted using different anti-polymerase drugs currently on the market that have been approved for use against various viruses.

Key findings
The results suggest the effectiveness of Ribavirin, Remdesivir, Sofosbuvir, Galidesivir, and Tenofovir as potent drugs against SARS-CoV-2 since they tightly bind to its RdRp. In addition, the results suggest guanosine derivative (IDX-184), Setrobuvir, and YAK as top seeds for antiviral treatments with high potential to fight the SARS-CoV-2 strain specifically.

Significance
The availability of FDA-approved anti-RdRp drugs can help treat patients and reduce the danger of the mysterious new viral infection COVID-19. The drugs mentioned above can tightly bind to the RdRp of the SARS-CoV-2 strain and thus may be used to treat the disease. No toxicity measurements are required for these drugs since they were previously tested prior to their approval by the FDA.

https://doi.org/10.1016/j.lfs.2020.117592

B. Coutard, C. Valle, X. de Lamballerie, B. Canard, N.G. Seidah, E. Decroly

The spike glycoprotein of the new coronavirus 2019-nCoV contains a furin-like cleavage site absent in CoV of the same clade
Antiviral Research, Volume 176, 2020

Abstract:
In 2019, a new coronavirus (2019-nCoV) infecting Humans has emerged in Wuhan, China. Its genome has been sequenced and the genomic information promptly released. Despite a high similarity with the genome sequence of SARS-CoV and SARS-like CoVs, we identified a peculiar furin-like cleavage site in the Spike protein of the 2019-nCoV, lacking in the other SARS-like CoVs.
In this article, we discuss the possible functional consequences of this cleavage site in the viral cycle, pathogenicity and its potential implication in the development of antivirals.

https://doi.org/10.1016/j.antiviral.2020.104742

Ai-Hua Zhang, Jun-Ling Ren, Xi-Jun Wang

Reply to “The use of traditional Chinese medicines to treat SARS-CoV-2 may cause more harm than good”
Pharmacological Research, 2020

https://doi.org/10.1016/j.phrs.2020.104775

Edoardo Conticini, Bruno Frediani, Dario Caro

Can atmospheric pollution be considered a co-factor in extremely high level of SARS-CoV-2 lethality in Northern Italy?
Environmental Pollution, 2020

Abstract:
This paper investigates the correlation between the high level of Severe Acute Respiratory Syndrome CoronaVirus 2 (SARS-CoV-2) lethality and the atmospheric pollution in Northern Italy. Indeed, Lombardy and Emilia Romagna are Italian regions with both the highest level of virus lethality in the world and one of Europe’s most polluted area. Based on this correlation, this paper analyzes the possible link between pollution and the development of acute respiratory distress syndrome and eventually death. We provide evidence that people living in an area with high levels of pollutant are more prone to develop chronic respiratory conditions and suitable to any infective agent. Moreover, a prolonged exposure to air pollution leads to a chronic inflammatory stimulus, even in young and healthy subjects. We conclude that the high level of pollution in Northern Italy should be considered an additional co-factor of the high level of lethality recorded in that area.

https://doi.org/10.1016/j.envpol.2020.114465

Barry Atkinson, Eskild Petersen

SARS-CoV-2 shedding and infectivity
The Lancet, 2020

https://doi.org/10.1016/S0140-6736(20)30868-0

Angela Patrì, Lucia Gallo, Maria Guarino, Gabriella Fabbrocini

Sexual transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): A new possible route of infection?
Journal of the American Academy of Dermatology, 2020
Karine Pautrat, Naïma Chergui

**SARS-CoV-2 infection may result in appendicular syndrome: Chest CT scan before appendectomy**

Journal of Visceral Surgery, 2020

**Abstract:**

The initial clinical presentation of CoronaVirus Disease 2019 may be appendicular syndrome. An abdominal CT scan ruled out a diagnosis of appendicitis and a chest CT scan yielded a diagnosis of SARS-CoV-2 infection. CT scan is required before considering emergency surgery for acute appendicitis.

Zhoukun Ling, Xi Xu, Qingxin Gan, Lieguang Zhang, Liangping Luo, Xiaoping Tang, Jinxin Liu

**Asymptomatic SARS-CoV-2 infected patients with persistent negative CT findings**

European Journal of Radiology, Volume 126, 2020

Junwen Luan, Yue Lu, Shan Gao, Leiliang Zhang

**A potential inhibitory role for integrin in the receptor targeting of SARS-CoV-2**

Journal of Infection, 2020


**Global Threat of SARS-CoV-2/COVID-19 and the Need for More and Better Diagnostic Tools**

Archives of Medical Research, 2020

Jianhui Peng, Mingke Wang, Gangqing Zhang, Eying Lu

**Seven discharged patients turning positive again for SARS-CoV-2 on quantitative RT-PCR**
American Journal of Infection Control, 2020

https://doi.org/10.1016/j.ajic.2020.03.017

Helena Barrasa, Jordi Rello, Sofia Tejada, Alejandro Martín, Goiatz Balziskueta, Cristina Vinuesa, Borja Fernández-Miret, Ana Villagra, Ana Vallejo, Ana San Sebastián, Sara Cabañes, Sebastián Iribarren, Fernando Fonseca, Javier Maynar

SARS-Cov-2 in Spanish Intensive Care: Early Experience with 15-day Survival In Vitoria

Anaesthesia Critical Care & Pain Medicine, 2020

Abstract:

Purpose: Community transmission of SARS-CoV-2 was detected in Spain in February 2020, with 216% intensive care unit (ICU) capacity expanded in Vitoria by March 18th, 2020. Methods: We identified patients from the two public hospitals in Vitoria who were admitted to ICU with confirmed infection by SARS-CoV-2. Data reported here were available in March 31th, 2020. Mortality was assessed in those who completed 7-days of ICU stay. Results: We identified 48 patients (27 males) with confirmed SARS-CoV-2. Median [interquartile range (IQR)] age of patients was 63 [51-75] years. Symptoms began a median of 7 [5-12] days before ICU admission. The most common comorbidities identified were obesity (n = 48%), arterial hypertension (n = 44%) and chronic lung disease (n = 37%). All patients were admitted by hypoxemic respiratory failure and none received non-invasive mechanical ventilation. Forty-five (94%) underwent intubation, 3 HFNT, 1 (2%) extracorporeal membrane oxygenation (ECMO) and 22 (49%) required prone position. After 15 days, 14/45 (31%) intubated patients died (13% within one week), 10 (22%) were extubated, and 21/45 (47%) underwent mechanical ventilation. Six patients had documented co-infection. Procalcitonin plasma above 0.5 µg/L was associated with 16% vs. 19% (p = 0.78) risk of death after 7 days. Conclusion: This early experience with SARS-CoV-2 in Spain suggests that a strategy of right oxygenation avoiding non-invasive mechanical ventilation was life-saving. Seven-day mortality in SARS-CoV-2 requiring intubation was lower than 15%, with 80% of patients still requiring mechanical ventilation. After 15 days of ICU admission, half of patients remained intubated, whereas one third died.

https://doi.org/10.1016/j.accpm.2020.04.001

Rui Liu, Huan Han, Fang Liu, Zhihua Lv, Kailang Wu, Yingle Liu, Yong Feng, Chengliang Zhu

Positive rate of RT-PCR detection of SARS-CoV-2 infection in 4880 cases from one hospital in Wuhan, China, from Jan to Feb 2020

Clinica Chimica Acta, Volume 505, 2020, Pages 172-175

Abstract:

There’s an outbreak of a novel coronavirus (SARS-CoV-2) infection since December 2019, first in China, and currently with more than 80 thousand confirmed infection globally in 29 countries till March 2, 2020. Identification, isolation and caring for patients early are essential to limit human-to-human transmission including reducing secondary infections among close contacts and health care
workers, preventing transmission amplification events. The RT-PCR detection of viral nucleic acid test (NAT) was one of the most quickly established laboratory diagnosis method in a novel viral pandemic, just as in this COVID-19 outbreak.

Methods

4880 cases that had respiratory infection symptoms or close contact with COVID-19 patients in hospital in Wuhan, China, were tested for SARS-CoV-2 infection by use of quantitative RT-PCR (qRT-PCR) on samples from the respiratory tract. Positive rates were calculated in groups divided by genders or ages.

Results

The positive rate was about 38% for the total 4880 specimens. Male and older population had a significant higher positive rates. However, 57% was positive among the specimens from the Fever Clinics. Binary logistic regression analysis showed that age, not gender, was the risk factor for SARS-CoV-2 infection in fever clinics.

Conclusions

Therefore, we concluded that viral NAT played an important role in identifying SARS-CoV-2 infection.

https://doi.org/10.1016/j.cca.2020.03.009

Junguo Zhang, Guanwen Lin, Jie Zeng, Jianguo Lin, Junzhang Tian, Guowei Li

Challenges of SARS-CoV-2 and lessons learnt from SARS in Guangdong Province, China

Journal of Clinical Virology, Volume 126, 2020

Abstract:

With lessons learnt from the SARS outbreak in 2003, Guangdong Province is taking the lead in bringing COVID-19 under control by multiple strict regulations in combination with effective healthcare provision.

https://doi.org/10.1016/j.jcv.2020.104341

Cristiano Pagnini, Riccardo Urgesi, Maria Carla Di Paolo, Maria Giovanna Graziani

Fighting the battle against SARS-CoV-2 as gastroenterologists in Italy

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.03.067

Bruno Tilocco, Alessio Soggiu, Maurizio Sanguinetti, Vincenzo Musella, Domenico Britti, Luigi Bonizzi, Andrea Urbani, Paola Roncada
Comparative computational analysis of SARS-CoV-2 nucleocapsid protein epitopes in taxonomically related coronaviruses

Microbes and Infection, 2020

Abstract:
Several research lines are currently ongoing to address the multitude of facets of the pandemic COVID-19. In line with the One-Health concept, extending the target of the studies to the animals which humans are continuously interacting with may favor a better understanding of the SARS-CoV-2 biology and pathogenetic mechanisms; thus, helping to adopt the most suitable containment measures. The last two decades have already faced severe manifestations of the coronavirus infection in both humans and animals, thus, circulating epitopes from previous outbreaks might confer partial protection from SARS-CoV-2 infections. In the present study, we provide an in-silico survey of the major nucleocapsid protein epitopes and compare them with the homologues of taxonomically-related coronaviruses with tropism for animal species that are closely inter-related with the human beings population all over the world. Protein sequence alignment provides evidence of high sequence homology for some of the investigated proteins. Moreover, structural epitope mapping by homology modelling revealed a potential immunogenic value also for specific sequences scoring a lower identity with SARS-CoV-2 nucleocapsid proteins. These evidence provide a molecular structural rationale for a potential role in conferring protection from SARS-CoV-2 infection and identifying potential candidates for the development of diagnostic tools and prophylactic-oriented strategies.


Andrea Lombardi, Giorgio Bozzi, Davide Mangioni, Antonio Muscatello, Anna Maria Peri, Lucia Taramasso, Riccardo Ungaro, Alessandra Bandera, Andrea Gori

Duration of quarantine in hospitalized patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection: a question needing an answer

Journal of Hospital Infection, 2020

https://doi.org/10.1016/j.jhin.2020.03.003

V.C.C. Cheng, S-C. Wong, G.S.W. Kwan, W-T. Hui, K-Y. Yuen

Disinfection of N95 respirators by ionized hydrogen peroxide during pandemic coronavirus disease 2019 (COVID-19) due to SARS-CoV-2

Journal of Hospital Infection, 2020

https://doi.org/10.1016/j.jhin.2020.04.003

Shuntong Kang, Wenyao Peng, Yuhao Zhu, Shiyao Lu, Min Zhou, Wei Lin, Wenfang Wu, Shu Huang, Liping Jiang, Xuan Luo, Meichun Deng
Recent progress in understanding 2019 novel coronavirus (SARS-CoV-2) associated with human respiratory disease: detection, mechanisms and treatment

International Journal of Antimicrobial Agents, 2020

Abstract:

Viral respiratory diseases such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) always pose a severe threat to people. First identified in late December 2019, a novel coronavirus (2019-nCoV; SARS-CoV-2) has affected many provinces in China and multiple countries worldwide. The viral outbreak has aroused panic and a public-health emergency around the world, and the number of infections continues to rise. However, the causes and consequences of the pneumonia remain unknown. To effectively implement epidemic prevention, early identification and diagnosis are critical to disease control. Here we scrutinise a series of available studies by global scientists on the clinical manifestations, detection methods and treatment options for the disease caused by SARS-CoV-2, named coronavirus disease 2019 (COVID-19), and also propose potential strategies for preventing the infection.

https://doi.org/10.1016/j.ijantimicag.2020.105950

Lidia Morawska, Junji Cao

Airborne transmission of SARS-CoV-2: The world should face the reality

Environment International, Volume 139, 2020

Abstract:

Hand washing and maintaining social distance are the main measures recommended by the World Health Organization (WHO) to avoid contracting COVID-19. Unfortunately, these measures do not prevent infection by inhalation of small droplets exhaled by an infected person that can travel distance of meters or tens of meters in the air and carry their viral content. Science explains the mechanisms of such transport and there is evidence that this is a significant route of infection in indoor environments. Despite this, no countries or authorities consider airborne spread of COVID-19 in their regulations to prevent infections transmission indoors. It is therefore extremely important, that the national authorities acknowledge the reality that the virus spreads through air, and recommend that adequate control measures be implemented to prevent further spread of the SARS-CoV-2 virus, in particularly removal of the virus-laden droplets from indoor air by ventilation.

https://doi.org/10.1016/j.envint.2020.105730

Ye Qiu, Yuan-Bo Zhao, Qiong Wang, Jin-Yan Li, Zhi-Jian Zhou, Ce-Heng Liao, Xing-Yi Ge

Predicting the angiotensin converting enzyme 2 (ACE2) utilizing capability as the receptor of SARS-CoV-2

Microbes and Infection, 2020

Abstract:
SARS-CoV-2, the newly identified human coronavirus causing severe pneumonia pandemic, was probably originated from Chinese horseshoe bats. However, direct transmission of the virus from bats to humans is unlikely due to lack of direct contact, implying the existence of unknown intermediate hosts. Angiotensin converting enzyme 2 (ACE2) is the receptor of SARS-CoV-2, but only ACE2s of certain species can be utilized by SARS-CoV-2. Here, we evaluated and ranked the receptor-utilizing capability of ACE2s from various species by phylogenetic clustering and sequence alignment with the currently known ACE2s utilized by SARS-CoV-2. As a result, we predicted that SARS-CoV-2 tends to utilize ACE2s of various mammals, except murines, and some birds, such as pigeon. This prediction may help to screen the intermediate hosts of SARS-CoV-2.

https://doi.org/10.1016/j.micinf.2020.03.003

karim bendjelid, Raphael Giraud

**Treating hypoxemic patients with SARS-COV-2 pneumonia: Back to applied physiology**

Anaesthesia Critical Care & Pain Medicine, 2020

https://doi.org/10.1016/j.accpm.2020.04.003

Zhihai Zhou, Yuan Sun, Xiaoling Yan, Xiaoyu Tang, Qianni Li, Yaorong Tan, Tian Lan, Jingyun Ma

**Swine acute diarrhea syndrome coronavirus (SADS-CoV) antagonizes interferon-β production via blocking IPS-1 and RIG-I**

Virus Research, Volume 278, 2020

**Abstract:**

Swine acute diarrhea syndrome coronavirus (SADS-CoV), a newly emerging enteric coronavirus, is considered to be associated with swine acute diarrhea syndrome (SADS) which has caused significantly economic losses to the porcine industry. Interactions between SADS-CoV and the host innate immune response is unclear yet. In this study, we used IPEC-J2 cells as a model to explore potential evasion strategies employed by SADS-CoV. Our results showed that SADS-CoV infection failed to induce IFN-β production, and inhibited poly (I:C) and Sendai virus (SeV)-triggered IFN-β expression. SADS-CoV also blocked poly (I:C)-induced phosphorylation and nuclear translocation of IRF-3 and NF-κB. Furthermore, SADS-CoV did not interfere with the activity of IFN-β promoter stimulated by IRF3, TBK1 and IKKe, but counteracted its activation induced by IPS-1 and RIG-I. Collectively, this study is the first investigation that shows interactions between SADS-CoV and the host innate immunity, which provides information of the molecular mechanisms underlying SADS-CoV infection.

https://doi.org/10.1016/j.virusres.2019.197843

Tung Phan

**Genetic diversity and evolution of SARS-CoV-2**
Abstract:

COVID-19 is a viral respiratory illness caused by a new coronavirus called SARS-CoV-2. The World Health Organization declared the SARS-CoV-2 outbreak a global public health emergency. We performed genetic analyses of eighty-six complete or near-complete genomes of SARS-CoV-2 and revealed many mutations and deletions on coding and non-coding regions. These observations provided evidence of the genetic diversity and rapid evolution of this novel coronavirus.

https://doi.org/10.1016/j.meegid.2020.104260

Carlos Gustavo Wambier, Andy Goren

SARS-COV-2 infection is likely to be androgen mediated

Journal of the American Academy of Dermatology, 2020

https://doi.org/10.1016/j.jaad.2020.04.032


Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study

The Lancet Infectious Diseases, 2020

Abstract:

Background

Coronavirus disease 2019 (COVID-19) causes severe community and nosocomial outbreaks. Comprehensive data for serial respiratory viral load and serum antibody responses from patients infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are not yet available. Nasopharyngeal and throat swabs are usually obtained for serial viral load monitoring of respiratory infections but gathering these specimens can cause discomfort for patients and put health-care workers at risk. We aimed to ascertain the serial respiratory viral load of SARS-CoV-2 in posterior oropharyngeal (deep throat) saliva samples from patients with COVID-19, and serum antibody responses.

Methods

We did a cohort study at two hospitals in Hong Kong. We included patients with laboratory-confirmed COVID-19. We obtained samples of blood, urine, posterior oropharyngeal saliva, and rectal swabs. Serial viral load was ascertained by reverse transcriptase quantitative PCR (RT-qPCR). Antibody levels against the SARS-CoV-2 internal nucleoprotein (NP) and surface spike
protein receptor binding domain (RBD) were measured using EIA. Whole-genome sequencing was done to identify possible mutations arising during infection.

Findings

Between Jan 22, 2020, and Feb 12, 2020, 30 patients were screened for inclusion, of whom 23 were included (median age 62 years [range 37–75]). The median viral load in posterior oropharyngeal saliva or other respiratory specimens at presentation was 5·2 log10 copies per mL (IQR 4·1–7·0). Salivary viral load was highest during the first week after symptom onset and subsequently declined with time (slope −0·15, 95% CI −0·19 to −0·11; R2=0·71). In one patient, viral RNA was detected 25 days after symptom onset. Older age was correlated with higher viral load (Spearman's ρ=0·48, 95% CI 0·074–0·75; p=0·020). For 16 patients with serum samples available 14 days or longer after symptom onset, rates of seropositivity were 94% for anti-NP IgG (n=15), 88% for anti-NP IgM (n=14), 100% for anti-RBD IgG (n=16), and 94% for anti-RBD IgM (n=15). Anti-SARS-CoV-2-NP or anti-SARS-CoV-2-RBD IgG levels correlated with virus neutralisation titre (R2>0·9). No genome mutations were detected on serial samples.

Interpretation

Posterior oropharyngeal saliva samples are a non-invasive specimen more acceptable to patients and health-care workers. Unlike severe acute respiratory syndrome, patients with COVID-19 had the highest viral load near presentation, which could account for the fast-spreading nature of this epidemic. This finding emphasises the importance of stringent infection control and early use of potent antiviral agents, alone or in combination, for high-risk individuals. Serological assay can complement RT-qPCR for diagnosis.

Funding

Richard and Carol Yu, May Tam Mak Mei Yin, The Shaw Foundation Hong Kong, Michael Tong, Marina Lee, Government Consultancy Service, and Sanming Project of Medicine.

https://doi.org/10.1016/S1473-3099(20)30196-1

Josep M. Garcia-Alamino

**Human biases and the SARS-CoV-2 pandemic**

Intensive and Critical Care Nursing, 2020

https://doi.org/10.1016/j.iccn.2020.102861

Rozhgar A. Khailany, Muhamad Safdar, Mehmet Ozaslan

**Genomic characterization of a novel SARS-CoV-2**

Gene Reports, 2020

Abstract:

A new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) associated with human to human transmission and extreme human sickness has been as of late announced from the city of Wuhan in China. Our objectives were to mutation analysis between recently reported genomes at various times and locations and to characterize the genomic structure of SARS-CoV-2 using
bioinformatics programs. Information on the variation of viruses is of considerable medical and biological impacts on the prevention, diagnosis, and therapy of infectious diseases. To understand the genomic structure and variations of the SARS-CoV-2. The study analyzed 95 SARS-CoV-2 complete genome sequences available in GenBank, National Microbiology Data Center (NMDC) and NGDC Genome Warehouse from December-2019 until 05 of April-2020. The genomic signature analysis demonstrates that a strong association between the time of sample collection, location of sample and accumulation of genetic diversity. We found 116 mutations, the three most common mutations were 8782C>T in ORF1ab gene, 28144T>C in ORF8 gene and 29095C>T in the N gene. The mutations might affect the severity and spread of the SARS-CoV-2. The finding heavily supports an intense requirement for additional prompt, inclusive investigations that combine genomic detail, epidemiological information and graph records of the clinical features of patients with COVID-19.

https://doi.org/10.1016/j.genrep.2020.100682

Jiwon Woo, Eunice Yoojin Lee, Mirae Lee, Taeyeon Kim, Yong-Eun Cho

An in vivo cell-based assay for investigating the specific interaction between the SARS-CoV N-protein and its viral RNA packaging sequence

Biochemical and Biophysical Research Communications, Volume 520, Issue 3, 2019, Pages 499-506

Abstract:

The SARS-CoV nucleocapsid (N) protein serves multiple functions in viral replication, transcription, and assembly of the viral genome complex. Coronaviruses specifically package genomic RNA into assembled virions, and in SARS-CoV, it is reported that this process is driven by an interaction between the N-protein and a packaging signal encoded within the viral RNA. While recent studies have uncovered the sequence of this packaging signal, little is known about the specific interaction between the N-protein and the packaging signal sequence, and the mechanisms by which this interaction drives viral genome packaging. In this study, we developed a novel in vivo cell-based assay for examining this interaction between the N-protein and packaging signal RNA for SARS-CoV, as well as other viruses within the coronaviridae family. Our results demonstrate that the N-protein specifically recognizes the SARS-CoV packaging signal with greater affinity compared to signals from other coronaviruses or non-coronavirus species. We also use deletion mapping to identify a 151-nt region within the packaging signal sequence that is critical for N-protein-RNA binding, and conversely, we show that both the N-terminal and C-terminal domains of the N protein are necessary for recognizing the packaging RNA. These results describe, for the first time, in vivo evidence for an interaction between the SARS-CoV N-protein and its packaging signal RNA, and demonstrate the feasibility of using this cell-based assay to further probe viral RNA-protein interactions in future studies.

https://doi.org/10.1016/j.bbrc.2019.09.115

Junwen Luan, Yue Lu, Xiaolu Jin, Leiliang Zhang

Spike protein recognition of mammalian ACE2 predicts the host range and an optimized ACE2 for SARS-CoV-2 infection
Biochemical and Biophysical Research Communications, 2020

**Abstract:**
SARS-CoV-2 causes the recent global COVID-19 public health emergency. ACE2 is the receptor for both SARS-CoV-2 and SARS-CoV. To predict the potential host range of SARS-CoV-2, we analyzed the key residues of ACE2 for recognizing S protein. We found that most of the selected mammals including pets (dog and cat), pangolin and Circetidae mammals remained the most of key residues for association with S protein from SARS-CoV and SARS-CoV-2. The interaction interface between cat/dog/pangolin/Chinese hamster ACE2 and SARS-CoV/SARS-CoV-2 S protein was simulated through homology modeling. We identified that N82 in ACE2 showed a closer contact with SARS-CoV-2 S protein than M82 in human ACE2. Our finding will provide important insights into the host range of SARS-CoV-2 and a new strategy to design an optimized ACE2 for SARS-CoV-2 infection.

[https://doi.org/10.1016/j.bbrc.2020.03.047](https://doi.org/10.1016/j.bbrc.2020.03.047)

Guan-Zhu Han

**Pangolins Harbor SARS-CoV-2-Related Coronaviruses**

Trends in Microbiology, 2020

**Abstract:**
The pandemic of coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2 has posed a severe threat to global public health. Yet, the origin of SARS-CoV-2 remains mysterious. Several recent studies (e.g., Lam et al., Xiao et al.) identified SARS-CoV-2-related viruses in pangolins, providing novel insights into the evolution and diversity of SARS-CoV-2-related viruses.

[https://doi.org/10.1016/j.tim.2020.04.001](https://doi.org/10.1016/j.tim.2020.04.001)

Leon Caly, Julian D. Druce, Mike G. Catton, David A. Jans, Kylie M. Wagstaff

**The FDA-approved Drug Ivermectin inhibits the replication of SARS-CoV-2 in vitro**

Antiviral Research, 2020

**Abstract:**
Although several clinical trials are now underway to test possible therapies, the worldwide response to the COVID-19 outbreak has been largely limited to monitoring/containment. We report here that Ivermectin, an FDA-approved anti-parasitic previously shown to have broad-spectrum anti-viral activity in vitro, is an inhibitor of the causative virus (SARS-CoV-2), with a single addition to Vero-hSLAM cells 2 hours post infection with SARS-CoV-2 able to effect ~5000-fold reduction in viral RNA at 48 h. Ivermectin therefore warrants further investigation for possible benefits in humans.

Yanis Roussel, Audrey Giraud-Gatineau, Marie-Thérèse Jimeno, Jean-Marc Rolain, Christine Zandotti, Philippe Colson, Didier Raoult

**SARS-CoV-2: fear versus data**
International Journal of Antimicrobial Agents, 2020

**Abstract:**
SARS-CoV-2, the novel coronavirus from China, is spreading around the world, causing a huge reaction despite its current low incidence outside China and the Far East. Four common coronaviruses are in current circulation and cause millions of cases worldwide. This article compares the incidence and mortality rates of these four common coronaviruses with those of SARS-CoV-2 in Organisation for Economic Co-operation and Development countries. It is concluded that the problem of SARS-CoV-2 is probably being overestimated, as 2.6 million people die of respiratory infections each year compared with less than 4000 deaths for SARS-CoV-2 at the time of writing.

https://doi.org/10.1016/j.ijantimicag.2020.105947

Paolo Tarantino, Dario Trapani, Giuseppe Curigliano

**Conducting phase 1 cancer clinical trials during the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)–related disease pandemic**
European Journal of Cancer, Volume 132, 2020

https://doi.org/10.1016/j.ejca.2020.03.023

Grace Lui, Lowell Ling, Christopher KC Lai, Eugene YK Tso, Kitty SC Fung, Veronica Chan, Tracy HY Ho, Fion Luk, Zigiui Chen, Joyce KC Ng, Kai-ming Chow, Peter KC Cheng, RickJason CW Chan, Dominic NC Tsang, Charles Gomersall, David SC Hui, Paul KS Chan

**Viral dynamics of SARS-CoV-2 across a spectrum of disease severity in COVID-19**
Journal of Infection, 2020

https://doi.org/10.1016/j.jinf.2020.04.014

Ka-Tim Choy, Alvina Yin-Lam Wong, Prathanporn Kaewpreedee, Sin Fun Sia, Dongdong Chen, Kenrie Pui Yan Hui, Daniel Ka Wing Chu, Michael Chi Wai Chan, Peter Pak-Hang Cheung, Xuhui Huang, Malik Peiris, Hui-Ling Yen

**Remdesivir, lopinavir, emetine, and homoharringtonine inhibit SARS-CoV-2 replication in vitro**
Antiviral Research, Volume 178, 2020

**Abstract:**
An escalating pandemic by the novel SARS-CoV-2 virus is impacting global health and effective therapeutic options are urgently needed. We evaluated the in vitro antiviral effect of compounds that were previously reported to inhibit coronavirus replication and compounds that are currently under evaluation in clinical trials for SARS-CoV-2 patients. We report the antiviral effect of remdesivir, lopinavir, homorringtonine, and emetine against SARS-CoV-2 virus in Vero E6 cells with the estimated 50% effective concentration at 23.15 μM, 26.63 μM, 2.55 μM and 0.46 μM, respectively. Ribavirin or favipiravir that are currently evaluated under clinical trials showed no inhibition at 100 μM. Synergy between remdesivir and emetine was observed, and remdesivir at 6.25 μM in combination with emetine at 0.195 μM may achieve 64.9% inhibition in viral yield. Combinational therapy may help to reduce the effective concentration of compounds below the therapeutic plasma concentrations and provide better clinical benefits.

https://doi.org/10.1016/j.antiviral.2020.104786

Giacomo Novara, Gianluca Giannarini, Cosimo De Nunzio, Francesco Porpiglia, Vincenzo Ficarra

Risk of SARS-CoV-2 Diffusion when Performing Minimally Invasive Surgery During the COVID-19 Pandemic

European Urology, 2020

https://doi.org/10.1016/j.eururo.2020.04.015

Chang-xiao Liu

Pay attention to situation of SARS-CoV-2 and TCM advantages in treatment of novel coronavirus infection

Chinese Herbal Medicines, 2020

Abstract:

Since the outbreak of the new coronavirus epidemic, novel coronavirus has infected nearly 100,000 people in more than 110 countries. How to face this new coronavirus epidemic outbreak is an important issue. Basic reproduction number (R0) is an important parameter in epidemiology; The basic reproduction number of an infection can be thought of as the expected number of cases directly generated by one case in a population where all individuals are susceptible to infection. Epidemiology dynamics is a mathematical model based on a susceptibility-infection-recovery epidemic model. Researchers analyzed the epidemiological benefits of different transmission rates for the establishment of effective strategy in prevention and control strategies for epidemic infectious diseases. In this review, the early use of TCM for light and ordinary patients, can rapidly improve symptoms, shorten hospitalization days and reduce severe cases transformed from light and normal. Many TCM formulas and products have wide application in treating infectious and non-infectious diseases. The TCM theoretical system of treating epidemic diseases with TCM and the treatment scheme of integrated Chinese and Western medicine have proved their effectiveness in clinical practice. TCM can cure COVID-19 pneumonia, and also shows that the role of TCM in blocking the progress of COVID-19 pneumonia.

https://doi.org/10.1016/j.chmed.2020.03.004
Yoshiharu Uno

**Why does SARS-CoV-2 invade the gastrointestinal epithelium?**

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.04.006

Shibo Jiang, Christopher Hillyer, Lanying Du

**Neutralizing Antibodies against SARS-CoV-2 and Other Human Coronaviruses**

Trends in Immunology, 2020

Abstract:

Coronavirus (CoV) disease 2019 (COVID-19) caused by severe acute respiratory syndrome (SARS)-CoV-2 (also known as 2019-nCoV) is threatening global public health, social stability, and economic development. To meet this challenge, this article discusses advances in the research and development of neutralizing antibodies (nAbs) for the prevention and treatment of infection by SARS-CoV-2 and other human CoVs.

https://doi.org/10.1016/j.it.2020.03.007

Simone Piva, Matteo Filippini, Fabio Turla, Sergio Catteneo, Alessio Margola, Silvia De Fulviis, Ida Nardiello, Silvia Beretta, Laura Ferrari, Raffaella Trotta, Gloria Erbici, Emanuele Focà, Francesco Castelli, Frank Rasulo, Michael J. Lanspa, Nicola Latronico

**Clinical presentation and initial management critically ill patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in Brescia, Italy**

Journal of Critical Care, 2020

Abstract:

An ongoing pandemic of COVID-19 that started in Hubei, China has resulted in massive strain on the healthcare infrastructure in Lombardy, Italy. The management of these patients is still evolving.

Materials and methods

This is a single-center observational cohort study of critically ill patients infected with COVID-19. Bedside clinicians abstracted daily patient data on history, treatment, and short-term course. We describe management and a proposed severity scale for treatment used in this hospital.

Results

44 patients were enrolled; with incomplete information on 11. Of the 33 studied patients, 91% were male, median age 64; 88% were overweight or obese. 45% were hypertensive, 12% had been taking an ACE-inhibitor. Noninvasive ventilation was performed on 39% of patients for part or all or their ICU stay with no provider infection. Most patient received antibiotics for pneumonia. Patients also
received lopinivir/ritonavir (82%), hydroxychloroquine (79%), and tocilizumab (12%) according to this treatment algorithm. Nine of 10 patients survived their ICU course and were transferred to the floor, with one dying in the ICU.

Conclusions

ICU patients with COVID-19 frequently have hypertension. Many could be managed with noninvasive ventilation, despite the risk of aerosolization. The use of a severity scale augmented clinician management.

https://doi.org/10.1016/j.jcrc.2020.04.004

Xian Zhang, Xuhui Chen, Liwen Chen, Chaohua Deng, Xiaojing Zou, Weiyong Liu, Huimin Yu, Bo Chen, Xufang Sun

The evidence of SARS-CoV-2 infection on ocular surface

The Ocular Surface, 2020

Abstract:

This is a cross-sectional study of patients who received a COVID-19 diagnosis between December 30, 2019 and February 7, 2020 at Tongji Hospital. A total of 102 patients (48 Male [47%] and 54 Female [53%]) with clinical symptoms, Rt, and chest Computed Tomography (CT) abnormalities were identified with a clinical diagnosis of COVID-19. Patients had a mean [SD] gestational age of 57.63 [14.90] years. Of a total of 102 patients identified, 72 patients (36 men [50%] and 36 women [50%]; mean [SD] age, 58.68 [14.81] years) were confirmed to have COVID-19 by laboratory diagnosis with a SARS-CoV-2 RT-PCR assay. Only two patients (2.78%) with conjunctivitis were identified from 72 patients with a laboratory confirmed COVID-19. Of those two patients, SARS-CoV-2 RNA fragments were found in ocular discharges by SARS-CoV-2 RT-PCR in only one patient. Our findings suspect the incidence of SARS-CoV-2 infection through the ocular surface is extremely low, while the nosocomial infection of SARS-CoV-2 through the eyes after occupational exposure is a potential route. To lower the SARS-CoV-2 nosocomial infection, all health care professionals should wear protective goggles. The inefficient diagnostic method and the sampling time lag may contribute to the lower positive rate of conjunctival swab samples of SARS-CoV-2.

https://doi.org/10.1016/j.jtos.2020.03.010

Avelino Núñez-Delgado

What do we know about the SARS-CoV-2 coronavirus in the environment?

Science of The Total Environment, Volume 727, 2020

Abstract:

In view of the current situation regarding the Covid-19 disease, a discussion is proposed on the need for research focusing on the presence and evolution of the SARS-CoV-2 virus in water, soils and other environmental compartments, reached through wastewater and sewage sludge spreading. Also, the evaluation of current treatments for wastewater and sewage sludge, as well as the eventual development of new specific techniques, based on sorption, nanotechnology, etc., would be of great
interest for controlling the environmental dissemination of these viruses in the current and eventual future outbreaks.

https://doi.org/10.1016/j.scitotenv.2020.138647

Lorenzo Norsa, Amedeo Indriolo, Naire Sansotta, Paola Cosimo, Salvatore Greco, Lorenzo D'Antiga

Uneventful course in IBD patients during SARS-CoV-2 outbreak in northern Italy

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.03.062

Indwiani Astuti, Ysrafil

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2): An overview of viral structure and host response

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, 2020

Abstract:

As a result of its rapid spread in various countries around the world, on March 11, 2020, WHO issued an announcement of the change in coronavirus disease 2019 status from epidemic to pandemic disease. The virus that causes this disease is indicated originating from animals traded in a live animal market in Wuhan, China. Severe Acute Respiratory Syndrome Coronavirus 2 can attack lung cells because there are many conserved receptor entries, namely Angiotensin Converting Enzyme-2. The presence of this virus in host cells will initiate various protective responses leading to pneumonia and Acute Respiratory Distress Syndrome. This review aimed to provide an overview related to this virus and examine the body's responses and possible therapies.

Method

We searched PubMed databases for Severe Acute Respiratory Syndrome Coronavirus-2, Middle East respiratory syndrome-related coronavirus and Severe Acute Respiratory Syndrome Coronavirus. Full texts were retrieved, analyzed and developed into an easy-to-understand review.

Results

We provide a complete review related to structure, origin, and how the body responds to this virus infection and explain the possibility of an immune system over-reaction or cytokine storm. We also include an explanation of how this virus creates modes of avoidance to evade immune system attacks. We further explain the therapeutic approaches that can be taken in the treatment and prevention of this viral infection.

Conclusion

In summary, based on the structural and immune-evasion system of coronavirus, we suggest several approaches to treat the disease.

https://doi.org/10.1016/j.dsx.2020.04.020
L. Guotao, Z. Xingpeng, D. Zhihui, W. Huirui

**SARS-CoV-2 infection presenting with hematochezia**

Médecine et Maladies Infectieuses, 2020

[https://doi.org/10.1016/j.medmal.2020.03.005](https://doi.org/10.1016/j.medmal.2020.03.005)

Chengrui Zhu, Yunhai Wu, Hongyan Liu, Yuan Ban, Xiaochun Ma, Zhidan Zhang

**Early pulmonary rehabilitation for SARS-CoV-2 pneumonia: Experience from an intensive care unit outside of the Hubei province in China**

Heart & Lung, 2020

[https://doi.org/10.1016/j.hrtlng.2020.04.007](https://doi.org/10.1016/j.hrtlng.2020.04.007)

Luxiang Liu, Jingjing Quan, Jiaojian Lv, Siqin Long, Wei Hu, Huang Zhuge, Zhihui Zhou, Dongdong Zhao

**A cluster of pneumonia associated with the SARS-Cov-2 outside of Wuhan related to a house-warming banquet**

Journal of Infection, 2020

[https://doi.org/10.1016/j.jinf.2020.03.034](https://doi.org/10.1016/j.jinf.2020.03.034)

Adam J Kucharski, Rosalind M Eggo

**Invisible spread of SARS-CoV-2 – Authors' reply**

The Lancet Infectious Diseases, 2020

[https://doi.org/10.1016/S1473-3099(20)30275-9](https://doi.org/10.1016/S1473-3099(20)30275-9)

Yuhan Xing, Wei Ni, Qin Wu, Wenjie Li, Guoju Li, Wendi Wang, Jianning Tong, Xiufeng Song, Gary Wing Kin Wong, Quansheng Xing

**Dynamics of faecal SARS-CoV-2 in infected children during the convalescent phase**

Journal of Infection, 2020

[https://doi.org/10.1016/j.jinf.2020.03.049](https://doi.org/10.1016/j.jinf.2020.03.049)

Xueting Ou, Liyang Zhou, Huanliang Huang, Yuebao Lin, Xingfei Pan, Dexiong Chen
A severe case with co-infection of SARS-CoV-2 and common respiratory pathogens

Travel Medicine and Infectious Disease, 2020
https://doi.org/10.1016/j.tmaid.2020.101672

Chang-quan Ling

Traditional Chinese medicine is a resource for drug discovery against 2019 novel coronavirus (SARS-CoV-2)

Journal of Integrative Medicine, Volume 18, Issue 2, 2020, Pages 87-88
https://doi.org/10.1016/j.joim.2020.02.004

Philippe Colson, Jean-Marc Rolain, Didier Raoult

Chloroquine for the 2019 novel coronavirus SARS-CoV-2

https://doi.org/10.1016/j.ijantimicag.2020.105923

Jaffar A. Al-Tawfiq

Viral loads of SARS-CoV, MERS-CoV and SARS-CoV-2 in respiratory specimens: What have we learned?

Travel Medicine and Infectious Disease, 2020
https://doi.org/10.1016/j.tmaid.2020.101629

Hua Zhao, Dingding Shen, Haiyan Zhou, Jun Liu, Sheng Chen

Guillain-Barré syndrome associated with SARS-CoV-2 infection: causality or coincidence?

The Lancet Neurology, 2020
https://doi.org/10.1016/S1474-4422(20)30109-5

Lingyan Zhou, Meng Zhang, Jing Wang, Jing Gao

Sars-Cov-2: Underestimated damage to nervous system

Travel Medicine and Infectious Disease, 2020
https://doi.org/10.1016/j.tmaid.2020.101642
Rocco Barazzoni, Stephan C. Bischoff, Joao Breda, Kremlin Wickramasinghe, Zeljko Krznaric, Dorit Nitzan, Matthias Pirlich, Pierre Singer

ESPEN expert statements and practical guidance for nutritional management of individuals with SARS-CoV-2 infection

Clinical Nutrition, 2020

Abstract:

The COVID-19 pandemics is posing unprecedented challenges and threats to patients and healthcare systems worldwide. Acute respiratory complications that require intensive care unit (ICU) management are a major cause of morbidity and mortality in COVID-19 patients. Patients with worst outcomes and higher mortality are reported to include immunocompromised subjects, namely older adults and polymorbid individuals and malnourished people in general. ICU stay, polymorbidity and older age are all commonly associated with high risk for malnutrition, representing per se a relevant risk factor for higher morbidity and mortality in chronic and acute disease. Also importantly, prolonged ICU stays are reported to be required for COVID-19 patients stabilization, and longer ICU stay may per se directly worsen or cause malnutrition, with severe loss of skeletal muscle mass and function which may lead to disability, poor quality of life and additional morbidity. Prevention, diagnosis and treatment of malnutrition should therefore be routinely included in the management of COVID-19 patients. In the current document, the European Society for Clinical Nutrition and Metabolism (ESPEN) aims at providing concise guidance for nutritional management of COVID-19 patients by proposing 10 practical recommendations. The practical guidance is focused to those in the ICU setting or in the presence of older age and polymorbidity, which are independently associated with malnutrition and its negative impact on patient survival.

https://doi.org/10.1016/j.clnu.2020.03.022

Yangli Liu, Haihong Chen, Kejing Tang, Yubiao Guo

Clinical manifestations and outcome of SARS-CoV-2 infection during pregnancy

Journal of Infection, 2020

https://doi.org/10.1016/j.jinf.2020.02.028

Joshua D. Brown

Cannabidiol as prophylaxis for SARS-CoV-2 and COVID-19? Unfounded claims versus potential risks of medications during the pandemic

Research in Social and Administrative Pharmacy, 2020

https://doi.org/10.1016/j.sapharm.2020.03.020

Marta Colaneri, Elena Seminari, Antonio Piralla, Valentina Zuccaro, …COVID19 IRCCS San Matteo Pavia Task Force
Lack of SARS-CoV-2 RNA environmental contamination in a tertiary referral hospital for infectious diseases in Northern Italy.

Journal of Hospital Infection, 2020

https://doi.org/10.1016/j.jhin.2020.03.018

Nian Xiong, Tao Wang, Zhicheng Lin

Invisible spread of SARS-CoV-2

The Lancet Infectious Diseases, 2020

https://doi.org/10.1016/S1473-3099(20)30263-2

Xingfei Pan, Dexiong Chen, Yong Xia, Xinwei Wu, Tangsheng Li, Xueling Ou, Liyang Zhou, Jing Liu

Asymptomatic cases in a family cluster with SARS-CoV-2 infection

The Lancet Infectious Diseases, Volume 20, Issue 4, 2020

https://doi.org/10.1016/S1473-3099(20)30114-6

Huanqin Han, Qingfeng Luo, Fan Mo, Lieming Long, Weiqiang Zheng

SARS-CoV-2 RNA more readily detected in induced sputum than in throat swabs of convalescent COVID-19 patients

The Lancet Infectious Diseases, 2020

https://doi.org/10.1016/S1473-3099(20)30174-2

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CT screening for early diagnosis of SARS-CoV-2 infection – Authors' reply

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M.A. Al-Muharraqi

Testing recommendation for COVID-19 (SARS-CoV-2) in patients planned for surgery - continuing the service and ‘suppressing’ the pandemic

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Arguments in favour of remdesivir for treating SARS-CoV-2 infections

International Journal of Antimicrobial Agents, 2020

https://doi.org/10.1016/j.ijantimicag.2020.105933

Ye-Min Qu, En-Ming Kang, Hai-Yan Cong

Positive result of Sars-Cov-2 in sputum from a cured patient with COVID-19

Travel Medicine and Infectious Disease, 2020

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SARS-CoV-2 is an appropriate name for the new coronavirus

The Lancet, Volume 395, Issue 10228, 2020, Pages 949-950

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Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China

The Lancet Oncology, Volume 21, Issue 3, 2020, Pages 335-337

https://doi.org/10.1016/S1470-2045(20)30096-6

Antoine Flahault

Has China faced only a herald wave of SARS-CoV-2?

Farid Rahimi, Amin Talebi Bezmin Abadi

**Case-finding: Fast, Available, and Efficient Font-line Diagnostics for SARS-CoV-2**

Archives of Medical Research, 2020

https://doi.org/10.1016/j.arcmed.2020.04.008

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**SARS-CoV, MERS-CoV and now the 2019-novel CoV: Have we investigated enough about coronaviruses? – A bibliometric analysis**

Travel Medicine and Infectious Disease, Volume 33, 2020

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Hui Li, Liang Liu, Dingyu Zhang, Jiuyang Xu, Huaping Dai, Nan Tang, Xiao Su, Bin Cao

**SARS-CoV-2 and viral sepsis: observations and hypotheses**

The Lancet, 2020

**Abstract:**

Since the outbreak of coronavirus disease 2019 (COVID-19), clinicians have tried every effort to understand the disease, and a brief portrait of its clinical features have been identified. In clinical practice, we noticed that many severe or critically ill COVID-19 patients developed typical clinical manifestations of shock, including cold extremities and weak peripheral pulses, even in the absence of overt hypotension. Understanding the mechanism of viral sepsis in COVID-19 is warranted for exploring better clinical care for these patients. With evidence collected from autopsy studies on COVID-19 and basic science research on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and SARS-CoV, we have put forward several hypotheses about SARS-CoV-2 pathogenesis after multiple rounds of discussion among basic science researchers, pathologists, and clinicians working on COVID-19. We hypothesise that a process called viral sepsis is crucial to the disease mechanism of COVID-19. Although these ideas might be proven imperfect or even wrong later, we believe they can provide inputs and guide directions for basic research at this moment.

https://doi.org/10.1016/S0140-6736(20)30920-X

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**The use of Traditional Chinese Medicines to treat SARS-CoV-2 may cause more harm than good**
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Nutrition support in the time of SARS-CoV-2 (COVID-19)
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Fighting the battle against SARS-CoV-2 as gastroenterologists in Italy
Gastroenterology, 2020
https://doi.org/10.1053/j.gastro.2020.03.067

Huimin Sun, Mengxin Lu, Song Chen, Zhenshun Cheng, Yong Xiong, Xinghuan Wang
Nosocomial SARS-CoV-2 infection among nurses in Wuhan at a single centre
Journal of Infection, 2020
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https://doi.org/10.1016/j.bulcan.2020.03.001

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Neurotropism of SARS-CoV 2: Mechanisms and manifestations
Journal of the Neurological Sciences, Volume 412, 2020
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Full Spectrum of Cancer Patients in SARS-CoV-2 Infection Still Being Described
Clinical Oncology, 2020
https://doi.org/10.1016/j.clon.2020.03.016

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The use of Janus kinase inhibitors in the time of SARS-CoV-2
Journal of the American Academy of Dermatology, 2020
https://doi.org/10.1016/j.jaad.2020.03.099

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Coronavirus (COVID-19), First Indication of Efficacy of Gene-Eden-VIR/Novirin in SARS-CoV-2 Infections
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A Spanish-translated clinical algorithm for management of suspected SARS-CoV-2 infection in pregnant women
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**On the molecular determinants the SARS-CoV-2 attack**

Clinical Immunology, 2020

https://doi.org/10.1016/j.clim.2020.108426

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**CT screening for early diagnosis of SARS-CoV-2 infection**

The Lancet Infectious Diseases, 2020

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**Renin-angiotensin system: The unexpected flaw inside the human immune system revealed by SARS-CoV-2**

Medical Hypotheses, Volume 140, 2020

https://doi.org/10.1016/j.mehy.2020.109686

Anne K. Cordes, Albert Heim

**Rapid random access detection of the novel SARS-coronavirus-2 (SARS-CoV-2, previously 2019-nCoV) using an open access protocol for the Panther Fusion**

Journal of Clinical Virology, Volume 125, 2020

https://doi.org/10.1016/j.jcv.2020.104305

Xinmiao Fu, Qi Ying, Tieyong Zeng, Tao Long, Yan Wang

**Simulating and forecasting the cumulative confirmed cases of SARS-CoV-2 in China by Boltzmann function-based regression analyses**

Journal of Infection, Volume 80, Issue 5, 2020, Pages 578-606

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Yu He, Zhengli Wang, Fang Li, Yuan Shi
Public health might be endangered by possible prolonged discharge of SARS-CoV-2 in stool

Journal of Infection, Volume 80, Issue 5, 2020, Pages e18-e19

https://doi.org/10.1016/j.jinf.2020.02.031

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Diagnosis of SARS-CoV-2 Infection based on CT scan vs. RT-PCR: Reflecting on Experience from MERS-CoV

Journal of Hospital Infection, 2020

https://doi.org/10.1016/j.jhin.2020.03.001

Gregory A Poland

SARS-CoV-2: a time for clear and immediate action

The Lancet Infectious Diseases, 2020

https://doi.org/10.1016/S1473-3099(20)30250-4

Benoit You, Alain Ravaud, Anne Canivet, Gérard Ganem, Philippe Giraud, Rosine Guimbaud, Laure Kaluzinski, Ivan Krakowski, Didier Mayeur, Thomas Grellety, Jean-Pierre Lotz

The official French guidelines to protect patients with cancer against SARS-CoV-2 infection

The Lancet Oncology, 2020

https://doi.org/10.1016/S1470-2045(20)30204-7

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Secondary attack rate and superspreading events for SARS-CoV-2

The Lancet, Volume 395, Issue 10227, 2020, Page e47

https://doi.org/10.1016/S0140-6736(20)30462-1

Giulia Bonato, Lorenzo Dioscoridi, Massimiliano Mutignani

Faecal-oral transmission of SARS-COV-2: practical implications

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.03.066
Katherine J. Hill, Clark D. Russell, Sarah Clifford, Kate Templeton, Claire L. Mackintosh, Oliver Koch, Rebecca K. Sutherland

**The index case of SARS-CoV-2 in Scotland**

Journal of Infection, 2020

**Abstract:**

Since its identification in December 2019, SARS-CoV-2 has infected 125,048 persons globally with cases identified in 118 countries across all continents. We report on the Scottish index case of SARS-CoV-2 infection, the virus causing COVID-19.

[https://doi.org/10.1016/j.jinf.2020.03.022](https://doi.org/10.1016/j.jinf.2020.03.022)

Feng Wen, Hai Yu, Jinyue Guo, Yong Li, Kaijian Luo, Shujian Huang

**Identification of the hyper-variable genomic hotspot for the novel coronavirus SARS-CoV-2**

Journal of Infection, 2020

[https://doi.org/10.1016/j.jinf.2020.02.027](https://doi.org/10.1016/j.jinf.2020.02.027)

Guillaume Favre, Léo Pomar, Xiaolong Qi, Karin Nielsen-Saines, Didier Musso, David Baud

**Guidelines for pregnant women with suspected SARS-CoV-2 infection**

The Lancet Infectious Diseases, 2020

[https://doi.org/10.1016/S1473-3099(20)30157-2](https://doi.org/10.1016/S1473-3099(20)30157-2)
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Ubaid Ur Rahman Qureshi, Sadia Saleem, Aisha Khan, Muhammad Sohail Afzal, Muhammad Shahzad Ali, Haroon Ahmed

Outbreak of novel Corona virus (2019-nCoV); implications for travelers to Pakistan

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101571

Yumeng Gao, Chao Shi, Yujun Chen, Ping Shi, Juan Liu, Yong Xiao, Yuan Shen, Enping Chen

A cluster of the Corona Virus Disease 2019 caused by incubation period transmission in Wuxi, China

Journal of Infection, 2020

Abstract:

Background

The infectivity and transmission capacity of COVID-2019 cases during the incubation period are not very clear. The manuscript described a cluster to provide information for research on incubation period infection.

Methods

We collected the required data from “Public Health Emergency Reporting Management Information System”, epidemiological questionnaires for the cases, and laboratories.

Results

The cluster involved four generations, each of which was transmitted to the next generation during the incubation period. The time was 2–7 days, 6–7 days, 3–8 days and 9 days prior to onset. As of March 11, the fourth-generation cases had no symptoms. Combined with the epidemiological data, we inferred that the source of the cluster was caused by the first-generation, who contacted with more than ten Wuhan people during the annual meeting from January 15 to 16. Two cases in this cluster were tested positive again during isolation and observation after discharge.

Conclusions

We determined incubation period was infectious, and confirmed that it was contagious 9 days before the onset. The patients who were discharged might need to be observed for a period of time. This study was useful for the practical work, such as in the investigation of close contacts.

https://doi.org/10.1016/j.jinf.2020.03.042

Vural Fidan

New type of corona virus induced acute otitis media in adult

American Journal of Otolaryngology, 2020

Abstract:
Since late December 2019, a new type of coronavirus (CIVID-19) causing a cluster of respiratory infections was first identified in Wuhan-China. And it disseminated to all countries. Generally, COVID-19 cases have fever, cough, respiratory distress findings (dyspnoea, intercostal retraction, cyanosis etc.). In this paper, we have presented an adult otitis media case whom infected with COVID-19, but she have not any classical COVID-19 symptoms.

https://doi.org/10.1016/j.amjoto.2020.102487


**Full-genome evolutionary analysis of the novel corona virus (2019-nCoV) rejects the hypothesis of emergence as a result of a recent recombination event**

Infection, Genetics and Evolution

Volume 79, 2020

**Abstract:**

A novel coronavirus (2019-nCoV) associated with human to human transmission and severe human infection has been recently reported from the city of Wuhan in China. Our objectives were to characterize the genetic relationships of the 2019-nCoV and to search for putative recombination within the subgenus of sarbecovirus.

**Methods**

Putative recombination was investigated by RDP4 and Simplot v3.5.1 and discordant phylogenetic clustering in individual genomic fragments was confirmed by phylogenetic analysis using maximum likelihood and Bayesian methods.

**Results**

Our analysis suggests that the 2019-nCoV although closely related to BatCoV RaTG13 sequence throughout the genome (sequence similarity 96.3%), shows discordant clustering with the Bat_SARS-like coronavirus sequences. Specifically, in the 5'-part spanning the first 11,498 nucleotides and the last 3'-part spanning 24,341–30,696 positions, 2019-nCoV and RaTG13 formed a single cluster with Bat_SARS-like coronavirus sequences, whereas in the middle region spanning the 3'-end of ORF1a, the ORF1b and almost half of the spike regions, 2019-nCoV and RaTG13 grouped in a separate distant lineage within the sarbecovirus branch.

**Conclusions**

The levels of genetic similarity between the 2019-nCoV and RaTG13 suggest that the latter does not provide the exact variant that caused the outbreak in humans, but the hypothesis that 2019-nCoV has originated from bats is very likely. We show evidence that the novel coronavirus (2019-nCov) is not-mosaic consisting in almost half of its genome of a distinct lineage within the betacoronavirus. These genomic features and their potential association with virus characteristics and virulence in humans need further attention.

https://doi.org/10.1016/j.meegid.2020.104212
Mohamed A. Daw

**Corona virus infection in Syria, Libya and Yemen; an alarming devastating threat**

Travel Medicine and Infectious Disease, 2020

[https://doi.org/10.1016/j.tmaid.2020.101652](https://doi.org/10.1016/j.tmaid.2020.101652)

Dongming Wang, Min Zhou, Xiuquan Nie, Weihong Qiu, Meng Yang, Xing Wang, Tao Xu, Zi Ye, Xiaobing Feng, Yang Xiao, Weihong Chen

**Epidemiological characteristics and transmission model of Corona Virus Disease 2019 in China**

Journal of Infection

Volume 80, Issue 5, 2020

[https://doi.org/10.1016/j.jinf.2020.03.008](https://doi.org/10.1016/j.jinf.2020.03.008)

Krishna Prasad Acharya

**Resource poor countries ought to focus on early detection and containment of novel corona virus at the point of entry**

Clinical Epidemiology and Global Health, 2020

[https://doi.org/10.1016/j.cegh.2020.03.001](https://doi.org/10.1016/j.cegh.2020.03.001)

Lisi Deng, Chunna Li, Qi Zeng, Xi Liu, Xinghua Li, Haitang Zhang, Zhongsi Hong, Jinyu Xia

**Arbidol combined with LPV/r versus LPV/r alone against Corona Virus Disease 2019: A retrospective cohort study**

Journal of Infection, 2020

**Abstract:**

**Summary**

**Background**

Corona Virus Disease 2019 (COVID-19) due to the 2019 novel coronavirus (SARS-CoV-2) emerged in Wuhan city and rapidly spread throughout China. We aimed to compare arbidol and lopinavir/ritonavir(LPV/r) treatment for patients with COVID-19 with LPV/r only.

**Methods**

In this retrospective cohort study, we included adults (age≥18years) with laboratory-confirmed COVID-19 without Invasive ventilation, diagnosed between Jan 17, 2020, and Feb 13, 2020. Patients, diagnosed after Jan 17, 2020, were given oral arbidol and LPV/r in the combination group.
and oral LPV/r only in the monotherapy group for 5–21 days. The primary endpoint was a negative conversion rate of coronavirus from the date of COVID-19 diagnosis (day 7, day 14), and assessed whether the pneumonia was progressing or improving by chest CT (day 7).

Results

We analyzed 16 patients who received oral arbidol and LPV/r in the combination group and 17 who received oral LPV/r only in the monotherapy group, and both initiated after diagnosis. Baseline clinical, laboratory, and chest CT characteristics were similar between groups. The SARS-CoV-2 could not be detected for 12 (75%) of 16 patients’ nasopharyngeal specimens in the combination group after seven days, compared with 6 (35%) of 17 in the monotherapy group (p < 0.05). After 14 days, 15 (94%) of 16 and 9 (52.9%) of 17, respectively, SARS-CoV-2 could not be detected (p < 0.05). The chest CT scans were improving for 11 (69%) of 16 patients in the combination group after seven days, compared with 5 (29%) of 17 in the monotherapy group (p < 0.05).

Conclusion

In patients with COVID-19, the apparent favorable clinical response with arbidol and LPV/r supports further LPV/r only.

https://doi.org/10.1016/j.jinf.2020.03.002

Mohamed A. Daw

Preliminary epidemiological analysis of suspected cases of coronavirus infection in Libya

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101634

Pu Yang, Pin Liu, Dan Li, Dongchi Zhao

Corona Virus Disease 2019, a growing threat to children?

Journal of Infection, 2020

https://doi.org/10.1016/j.jinf.2020.02.024
Titres d’articles contenant: “COVID-19”
Caring for older adults with multiple myeloma during the COVID-19 Pandemic: Perspective from the International Forum for Optimizing Care of Older Adults with Myeloma

Journal of Geriatric Oncology, 2020

https://doi.org/10.1016/j.jgo.2020.04.008

Implications for forensic death investigations from first Swiss case of non-hospital treatment with COVID-19

Forensic Imaging, 2020

Abstract:

Case details: A case of a 50-year old HIV-positive man is presented, with focus on visualization of post-mortem computed tomography (PMCT) of the lungs, in comparison to a forensic control case. He was found dead at home, a day after his nasopharyngeal swab had returned positive for SARS-COV-2, three days after the sample had been taken as an outpatient, over five weeks after first exhibiting possible symptoms. 3D-visualization was performed by visually discriminating correlates for aerated, poorly aerated and non-aerated lung regions. The visual side-by-side comparison with a control case shows the deterioration beyond any "normal" post-mortem finding. The PMCT findings in the lungs resemble those of patients with acute respiratory distress syndrome (ARDS), while histologically identified inflammation also shows, in part binuclear, lymphocytes. In addition, acute liver dystrophy and acute tubular necrosis in the kidneys were found. Except coronary artery atherosclerosis, there appeared to be no remarkable pathology of the heart. Comment: With the pandemic impact of SARS-COV-2, a range of issues unfolds, also for medicolegal investigations into deaths, as we report the first Swiss case of fatal SARS-COV-2 pneumonia with features of a severe acute respiratory distress syndrome of an outpatient. As this pandemic from the view of risk assessment does constitute a black swan, underestimated fat tails as technical reason should be addressed by also analyzing apparent extreme single observations. This case of an outpatient (without intensive-care treatment) shows a pulmonary progression beyond the typical findings of COVID-19, to a non-specific picture of ARDS, where histologically, binuclear lymphocytes were remarked. What appeared to be an initially slow progression with final rapid escalation raises the question whether nasopharyngeal swabs or pulmonary CT might be better suited for screening high-risk patients. The apparent absence of symptoms and relatively late clinic consultation appeared to contrast with the extensive pathology, raising the question whether any search for super-spreaders should not just focus on asymptomatic but under-reported symptomatic patients, and whether their prolonged circulation in everyday life would justify more extensive face mask policies. As post-mortem testing for SARS-COV-2 may not be available for every case, PMCT may provide sensitive testing for lung changes related to COVID-19. In order to allow for more medicolegal investigations in the context of COVID-19, any extra tests may have to be financed by stakeholders in epidemiology, infectious disease or policy.
Deblina Roy, Sarvodaya Tripathy, Sujita Kumar Kar, Nivedita Sharma, Sudhir Kumar Verma, Vikas Kaushal

**Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic**

Asian Journal of Psychiatry, Volume 51, 2020

**Abstract:**

Novel Corona Virus Disease (COVID-19) originating from China has rapidly crossed borders, infecting people throughout the whole world. This phenomenon has led to a massive public reaction; the media has been reporting continuously across borders to keep all informed about the pandemic situation. All these things are creating a lot of concern for people leading to heightened levels of anxiety. Pandemics can lead to heightened levels of stress; Anxiety is a common response to any stressful situation. This study attempted to assess the knowledge, attitude, anxiety experience, and perceived mental healthcare need among adult Indian population during the COVID-19 pandemic. An online survey was conducted using a semi-structured questionnaire using a non-probability snowball sampling technique. A total of 662 responses were received. The responders had a moderate level of knowledge about the COVID-19 infection and adequate knowledge about its preventive aspects. The attitude towards COVID-19 showed peoples' willingness to follow government guidelines on quarantine and social distancing. The anxiety levels identified in the study were high. More than 80 % of the people were preoccupied with the thoughts of COVID-19 and 72 % reported the need to use gloves, and sanitizers. In this study, sleep difficulties, paranoia about acquiring COVID-19 infection and distress related social media were reported in 12.5 %, 37.8 %, and 36.4 % participants respectively. The perceived mental healthcare need was seen in more than 80 % of participants. There is a need to intensify the awareness and address the mental health issues of people during this COVID-19 pandemic.

https://doi.org/10.1016/j.aip.2020.102083

L.A. Boccalatte, J.J. Larrañaga, G.M. Perez Raffo, C.A. Teijido, G. García Fornari, M.I. Staneloni, M.F. Figari

**Brief guideline for the prevention of COVID-19 infection in head and neck and otolaryngology surgeons**

American Journal of Otolaryngology, 2020
Abstract:

Importance

Anatomically, viral density is greater in the nasal cavity and the nasopharynx. It is to be expected that instrumentation in or through those areas will entail a higher risk of transmission. That's why head and neck and otolaryngologist surgeons are among the most vulnerable health professionals.

Observations

Surgeons should essentially perform procedures they require. Surgeries should be performed with personal protective equipment suitable for the high risk of aerosolization: goggles, N95 face mask, facial mask, blood-repelling gown and gloves. It is advisable to have the cooperative COVID-19 test in all patients. Telemedicine is a useful resource if resources allow it.

Conclusions and relevance

Otolaryngologists and related specialists are among the groups at higher risk when performing surgeries and upper airway examinations. There are no emergencies in a pandemic. The care of health professionals is crucial to combating this health situation.

https://doi.org/10.1016/j.amjoto.2020.102484

Roger Foo, Yibin Wang, Wolfram-Hubertus Zimmermann, Johannes Backs, Dao Wen Wang

Cardiovascular molecular mechanisms of disease with COVID-19

Journal of Molecular and Cellular Cardiology, 2020

https://doi.org/10.1016/j.yjmcc.2020.04.010

Fujun Peng, Lei Tu, Yongshi Yang, Peng Hu, Runsheng Wang, Qinyong Hu, Feng Cao, Taijiao Jiang, Jinyu Sun, Guogang Xu, Christopher Chang


Canadian Journal of Cardiology, 2020

Abstract:

With over 1,800,000 cases and 110,000 deaths globally, COVID-19 is one of worst infectious disease outbreaks in history. The objective of this paper is to critically review the available evidence regarding the lessons learned from the Chinese experience regarding COVID-19 prevention and management. The steps that have led to a near disappearance of new cases in China included rapid sequencing of the virus to establish testing kits which allowed tracking of infected persons in and out of Wuhan. In addition, aggressive quarantine measures included the complete isolation of Wuhan and then later Hebei and the rest of the country, as well as closure of all schools and non-essential businesses. Other measures included the rapid construction of two new hospitals and the establishment of Fangcang shelter hospitals. In the absence of a vaccine, the management of COVID-19 included antivirals, high flow oxygen, mechanical ventilation, corticosteroids, hydroxychloroquine, tocilizumab, interferons, intravenous immunoglobulin and convalescent plasma infusions. These measures appeared to provide only moderate success. While some measures have been supported by weak descriptive data, their effectiveness is still unclear pending well-
controlled clinical trials. In the end, it was the enforcement of drastic quarantine measures that stopped SARS-CoV-2 from spreading. The earlier the implementation, the less likely resources will be depleted. The most critical factors in stopping a pandemic are early recognition of infected individuals, carriers and contacts, and early implementation of quarantine measures with an organized, proactive and unified strategy at a national level. Delays result in significantly higher death tolls.

https://doi.org/10.1016/j.cjca.2020.04.010

Samad Ghaffari, Neda Roshanravan, Helda Tutunchi, Alireza Ostadrahimi, Mahboub Pouraghaei, Behnam Kafil

Oleoylethanolamide, A Bioactive Lipid Amide, as A Promising Treatment Strategy for Coronavirus/COVID-19

Archives of Medical Research, 2020

Abstract:
The current outbreak of COVID-19 (coronavirus) has been identified by World Health Organization (WHO) as a global pandemic. With the emergence of the COVID-19 virus and considering the lack of effective pharmaceutical treatment for it, there is an urgent need to identify safe and effective drugs or potential adjuvant therapy in this regard. Bioactive lipids with an array of known health-promoting properties can be suggested as effective agents in alleviating acute respiratory stress induced by virus. The bioactive lipid amide, oleoylethanolamide (OEA), due to several distinctive homeostatic properties, including anti-inflammatory activities, modulation of immune response, and anti-oxidant effects can be considered as a novel potential pharmacological alternative for the management of COVID-19.

https://doi.org/10.1016/j.arcmed.2020.04.006

Lei Huang, Xiwen Zhang, Xinyue Zhang, Zhijian Wei, Lingli Zhang, Jingjing Xu, Peipei Liang, Yuanhong Xu, Chengyuan Zhang, Aman Xu

Rapid asymptomatic transmission of COVID-19 during the incubation period demonstrating strong infectivity in a cluster of youngsters aged 16-23 years outside Wuhan and characteristics of young patients with COVID-19: A prospective contact-tracing study

Journal of Infection, 2020

Abstract:
The outbreak of coronavirus-disease-2019 (COVID-19) has rapidly spread to many places outside Wuhan. Previous studies on COVID-19 mostly included older hospitalized-adults. Little information on infectivity among and characteristics of youngsters with COVID-19 is available.

Methods
A cluster of 22 close-contacts of a 22-year-old male (Patient-Index) including youngsters with laboratory-confirmed COVID-19 and hospitalized close-contacts testing negative for severe-acute-
respiratory-syndrome-coronavirus-2 (SARS-CoV-2) in Anhui Province, China was prospectively-traced.

Results

Since January 23, 2020, we enrolled a cluster of eight youngsters with COVID-19 (median age [range], 22 [16–23] years; six males) originating from Patient-Index returning from Wuhan to Hefei on January 19. Patient-Index visited his 16-year-old female cousin in the evening on his return, and met 15 previous classmates in a get-together on January 21. He reported being totally asymptomatic and were described by all his contacts as healthy on January 19-21. His very first symptoms were itchy eyes and fever developed at noon and in the afternoon on January 22, respectively. Seven youngsters (his cousin and six classmates) became infected with COVID-19 after a few-hour-contact with Patient-Index. None of the patients and contacts had visited Wuhan (except Patient-Index), or had any exposure to wet-markets, wild-animals, or medical-institutes within three months. For affected youngsters, the median incubation-period was 2 days (range, 1–4). The median serial-interval was 1 day (range, 0–4). Half or more of the eight COVID-19-infected youngsters had fever, cough, sputum production, nasal congestion, and fatigue on admission. All patients had mild conditions. Six patients developed pneumonia (all mild; one bilateral) on admission. As of February 20, four patients were discharged.

Conclusions

SARS-CoV-2-infection presented strong infectivity during the incubation-period with rapid transmission in this cluster of youngsters outside Wuhan. COVID-19 developed in these youngsters had fast onset and various nonspecific atypical manifestations, and were much milder than in older patients as previously reported.

https://doi.org/10.1016/j.jinf.2020.03.006

Gopalkrishna Barkur, Vibha, Giridhar B. Kamath

Sentiment analysis of nationwide lockdown due to COVID 19 outbreak: Evidence from India

Asian Journal of Psychiatry, Volume 51, 2020

https://doi.org/10.1016/j.ajp.2020.102089

Abraham Edgar Gracia-Ramos

Is the ACE2 Overexpression a Risk Factor for COVID-19 Infection?

Archives of Medical Research, 2020

Abstract:

In the recent coronavirus disease (COVID-19) outbreak, a higher proportion of patients with severe disease were found in older persons with comorbidities. This observation has been related to the use of drugs that can increase the cellular expression of angiotensin-converting enzyme 2 (ACE2) that has been recognized as target to which the virus bind to cells. Although this hypothesis is possible, it may also have other explanations which are discussed.
Yiqun Gan, Yidi Chen, Cheng Wang, Carl Latkin, Brian J. Hall

The fight against COVID-19 and the restoration of trust in Chinese medical professionals

Asian Journal of Psychiatry, 2020

Bryan Hoffman

Tip of the spear: An interview with the Washington State Nursing Care Quality Assurance Commission at the onset of the COVID-19 pandemic

Teaching and Learning in Nursing, 2020

Christel Daniel

La recherche clinique à partir d’entrepôts de données. L’expérience de l’Assistance Publique – Hôpitaux de Paris (AP-HP) à l’épreuve de la pandémie Covid-19

La Revue de Médecine Interne, 2020

Roopa Bhat, Aws Hamid, Jeffrey R. Kunin, Sachin S. Saboo, Kiran Batra, Dhiraj Baruah, Ambarish P. Bhat

Chest Imaging in Patients Hospitalized With COVID-19 Infection - A Case Series

Current Problems in Diagnostic Radiology, 2020

Abstract:

COVID-19 (Corona Virus Disease-19) is a zoonotic illness first reported in the city of Wuhan, China in December 2019, and is now officially a global pandemic as declared by the World Health Organization. The infection is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 infected patients can be asymptomatic carriers or present with mild-to-severe respiratory symptoms. Imaging, including computed tomography is not recommended to screen/diagnose COVID-19 infections, but plays an important role in management of these patients, and to rule out alternative diagnoses or coexistent diseases. In our multicenter case series, we outline the clinical presentations and illustrate the most common imaging manifestations in patients hospitalized with COVID-19.
Head and neck oncology during the COVID-19 pandemic: Reconsidering traditional treatment paradigms in light of new surgical and other multilevel risks

Oral Oncology, 2020

Abstract:

The COVID-19 pandemic demands reassessment of head and neck oncology treatment paradigms. Head and neck cancer (HNC) patients are generally at high-risk for COVID-19 infection and severe adverse outcomes. Further, there are new, multilevel COVID-19-specific risks to patients, surgeons, health care workers (HCWs), institutions and society. Urgent guidance in the delivery of safe, quality head and neck oncologic care is needed. Novel barriers to safe HNC surgery include: 1) imperfect presurgical screening for COVID-19; 2) prolonged SARS-CoV-2 aerosolization; 3) occurrence of multiple, potentially lengthy, aerosol generating procedures (AGPs) within a single surgery; 4) potential incompatibility of enhanced personal protective equipment (PPE) with routine operative equipment; 5) existential or anticipated PPE shortages. Additionally, novel, COVID-19-specific multilevel risks to HNC patients, HCWs and institutions, and society include: use of immunosuppressive therapy, nosocomial COVID-19 transmission, institutional COVID-19 outbreaks, and, at some locations, societal resource deficiencies requiring health care rationing. Traditional head and neck oncology doctrines require reassessment given the extraordinary COVID-19-specific risks of surgery. Emergent, comprehensive management of these novel, multilevel surgical risks are needed. Until these risks are managed, we temporarily favor nonsurgical therapy over surgery for most mucosal squamous cell carcinomas, wherein surgery and nonsurgical therapy are both first-line options. Where surgery is traditionally preferred, we recommend multidisciplinary evaluation of multilevel surgical-risks, discussion of possible alternative nonsurgical therapies and shared-decision-making with the patient. Where surgery remains indicated, we recommend judicious preoperative planning and development of COVID-19-specific perioperative protocols to maximize the safety and quality of surgical and oncologic care.

https://doi.org/10.1016/j.oraloncology.2020.104684


Journal of Pediatric Urology, 2020

Abstract:

Summary

The COVID-19-pandemic forces hospitals to reorganize into a dual patient flow system. Healthcare professionals are forced to make decisions in patient prioritization throughout specialties. Most
pediatric urology pathologies do not require immediate or urgent care, however, delay may compromise future renal function or fertility. Contact with patients and parents, either physical in safe conditions or by (video)telephone must continue. The Paediatric-Urology-Guidelines-panel of the EAU proposes recommendations on prioritization of care. Pediatric-Urology program directors must ensure education, safety and attention for mental health of staff. Upon resumption of care, adequate prioritization must ensure minimal impact on outcome.

https://doi.org/10.1016/j.jpurol.2020.04.007

Yu-Hsuan Lin, Chun-Hao Liu, Yu-Chuan Chiu

Google searches for the keywords of “wash hands” predict the speed of national spread of COVID-19 outbreak among 21 countries

Brain, Behavior, and Immunity, 2020

Abstract:

This study hypothesized that national population health literacy might reflect on their keywords searching. We applied Google searches for “wash hands” and “face mask” during January 19 to February 18 as a surrogate of national population health literacy among 21 countries, and examine whether google searches for “wash hands” and “face masks” would protect from increased numbers of confirmed cases of among 21 countries We found the increased google searches for “wash hands” from January 19 to February 18, 2020, correlated with a lower spreading speed of COVID-19 from February 19 to March 10, 2020 among 21 countries (Pearson’s correlation coefficient of −0.70, P < 0.001). The result highlights the importance of public awareness of hand washing in preventing COVID-19 disease spreading.

https://doi.org/10.1016/j.bbi.2020.04.020

Parisa Karami, Maliheh Naghavi, Abdolamir Feyzi, Mehdi Aghamohammadi, Mohammad Sadegh Novin, Ahmadreza Mobaien, Mohamad Qorbanisani, Aida Karami, Amir Hossein Norooznezhad

Mortality of a pregnant patient diagnosed with COVID-19: A case report with clinical, radiological, and histopathological findings

Travel Medicine and Infectious Disease, 2020

Abstract:

This report highlights details on a pregnant case of COVID-19 who unfortunately did not survive. This 27-year-old woman at her 30 and 3/7 weeks’ gestation was referred to our center with fever, myalgia, and cough. The laboratory investigations showed leukopenia and lymphopenia as well as increased creatinine and CRP levels. The first chest X-ray (faint bilateral patchy opacities) and CT scan (some faint subpleural ground-glass opacities associated with pleural thickening) were not typical for initial COVID-19 pulmonary infection, however, the treatment for COVID-19 was started. Due to respiratory distress, she was intubated and put under mechanical ventilation. After a while, the fetus was born with Apgar score of 0 and did not react to the neonatal cardiopulmonary resuscitation protocol. Finally, due to deterioration in the clinical and imaging findings, the patient was expired as a result of multi-organ failure. Following the death, autopsy was performed and the
histopathologic evaluations of the lungs showed evidence of viral pneumonia (viral cytopathic effect and a mild increase in alveolar wall thickness) and ARDS (hyaline membrane). Also, reverse transcription-polymerase chain reaction (RT-PCR) confirmed SARS-CoV-2 infection in the lungs. To our knowledge, this is the first report of maternal death with confirmed COVID-19 infection.

https://doi.org/10.1016/j.tmaid.2020.101665

Henry Chesbrough

**To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective**

Industrial Marketing Management, 2020

**Abstract:**

Covid-19 has severely tested our public health systems. Recovering from Covid-19 will soon test our economic systems. Innovation will have an important role to play in recovering from the aftermath of the coronavirus. This article discusses both how to manage innovation as part of that recovery, and also derives some lessons from how we have responded to the virus so far, and what those lessons imply for managing innovation during the recovery.

https://doi.org/10.1016/j.indmarman.2020.04.010

Katherine He, Allan Stolarski, Edward Whang, Gentian Kristo

**Addressing General Surgery residents’ concerns in the early phase of the COVID-19 pandemic.**

Journal of Surgical Education, 2020

https://doi.org/10.1016/j.jsurg.2020.04.003

Zahra Sedaghat, Narges Karimi

**Guillain Barre syndrome associated with COVID-19 infection: A case report**

Journal of Clinical Neuroscience, 2020

**Abstract:**

Novel outbreak with coronavirus 2019 began since 31 December 2019. Coronaviruses can cause multiple systemic infections that respiratory complications are the most obvious symptoms. In this report, we describe the symptoms of Guillain Barre syndrome (GBS) in one infected patient with COVID-19, for the first time. We reported a 65-years-old male patient with complaints of acute progressive symmetric ascending quadriparesis. Two weeks prior to hospitalization, the patient suffered from cough, fever, and RT-PCR was reported positive for COVID-19 infection. The electrodiagnostic test showed that the patient is an AMSAN variant of GBS. COVID-19 stimulates inflammatory cells and produces various inflammatory cytokines and as a result, it creates immune-mediated processes. GBS is an immune-mediated disorder and molecular mimicry as a mechanism of autoimmune disorder plays an important role in creating it. It is unclear whether COVID-19
induces the production of antibodies against specific gangliosides. Further investigations should be conducted about the mechanism of GBS in patients with COVID-19, in the future.

https://doi.org/10.1016/j.jocn.2020.04.062

Ruyuan He, Zilong Lu, Lin Zhang, Tao Fan, Rui Xiong, Xiaokang Shen, Haojie Feng, Heng Meng, Weichen Lin, Wenyang Jiang, Qing Geng

The clinical course and its correlated immune status in COVID-19 pneumonia

Journal of Clinical Virology, 2020

Abstract:

Objectives
To explore the clinical course and its dynamic features of immune status in COVID-19 patients and find predictors correlated with severity and prognosis of COVID-19.

Methods
The electronic medical records of 204 patients with COVID-19 pneumonia confirmed by nucleic acid testing were retrospectively collected and analyzed.

Results
All Patients were divided into severe (69) and non-severe group (135). Lymphocyte subsets count, including CD3 + T cell, CD4 + T cell, CD8 + T cell, B cell (CD19+) and NK cell (CD16 + 56+), were significantly lower in severe group (P<0.001). The dynamic levels of T lymphocytes in severe group were significantly lower from disease onset, but in the improved subgroup the value of T lymphocyte began to increase after about 15-day treatment and finally returned to the normal level. The cut-off value of the counts of CD3+ (576), CD4+ (391) and CD8+ (214) T cell were calculated and indicated significantly high sensitivity and specificity for severity of COVID-19.

Conclusion
Our results shown that the decrease of CD3+, CD4+ and CD8 + T lymphocyte correlated with the course of patients with COVID-19 pneumonia, especially in severe cases. The level of T lymphocyte could be used as an indicator for prediction of severity and prognosis of patients with COVID-19 pneumonia. The application of glucocorticoid should be cautious in severe cases.

https://doi.org/10.1016/j.jcv.2020.104361

Aseem Mehra, Seema Bharadwaj, Swapnajeet Sahoo, Shaheena Parveen, Ajay Pal Singh, Subho Chakrabarti, Sandeep Grover

A crisis for elderly with mental disorders: Relapse of symptoms due to heightened anxiety due to COVID-19

Asian Journal of Psychiatry, 2020

https://doi.org/10.1016/j.ajp.2020.102114
No evidence of SARS-CoV-2 in semen of males recovering from COVID-19

Abstract:

Objective
To describe detection of SARS-CoV-2 in seminal fluid of patients recovering from COVID-19 and describe the expression profile of ACE2 and TMPRSS2 within the testicle.

Design
observational, cross-sectional study

Setting
Tertiary referral center

Patients
Thirty-four adult Chinese males diagnosed with COVID-19 through confirmatory quantitative reverse transcriptase-polymerase chain reaction (qRT-PCR) from pharyngeal swab samples

Intervention
None

Main Outcome Measures
Identification of SARS-CoV-2 on qRT-PCR of single ejaculated semen samples. Semen quality was not assessed. Expression patterns of ACE2 and TMPRSS2 in the human testis are explored through previously published single-cell transcriptome datasets.

Results
Six patients (19%) demonstrated scrotal discomfort concerning for viral orchitis around the time of COVID-19 confirmation. SARS-CoV-2 was not detected in semen after a median of 31 days (IQR: 29-36 days) from COVID-19 diagnosis. Single-cell transcriptome analysis demonstrates sparse expression of ACE2 and TMPRSS2, with almost no overlapping gene expression.

Conclusions
SARS-CoV-2 was not detected in the semen of patients recovering from COVID-19 one month after COVID-19 diagnosis. ACE2-mediated viral entry of SARS-CoV-2 into target host cells is unlikely to occur within the human testicle based on ACE2 and TMPRSS2 expression. The long-term effects of SARS-CoV-2 on male reproductive function remain unknown.

https://doi.org/10.1016/j.fertnstert.2020.04.024

Xiaochen Li, Shuyun Xu, Muqing Yu, Ke Wang, Yu Tao, Ying Zhou, Jing Shi, Min Zhou, Bo Wu, Zhenyu Yang, Cong Zhang, Junqing Yue, Zhiguo Zhang, Harald Renz, Xiansheng Liu, Jungang Xie, Min Xie, Jianping Zhao
Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan

Abstract:

Background

In December 2019, COVID-19 outbreak occurred in Wuhan. Data on the clinical characteristics and outcomes of patients with severe COVID-19 are limited.

Objective

The severity on admission, complications, treatment, and outcomes of COVID-19 patients were evaluated.

Methods

Patients with COVID-19 admitted to Tongji Hospital from January 26, 2020 to February 5, 2020 were retrospectively enrolled and followed-up until March 3, 2020. Potential risk factors for severe COVID-19 were analyzed by a multivariable binary logistic model. Cox proportional hazard regression model was used for survival analysis in severe patients.

Results

We identified 269 (49.1%) of 548 patients as severe cases on admission. Elder age, underlying hypertension, high cytokine levels (IL-2R, IL-6, IL-10, and TNF-a), and high LDH level were significantly associated with severe COVID-19 on admission. The prevalence of asthma in COVID-19 patients was 0.9%, markedly lower than that in the adult population of Wuhan. The estimated mortality was 1.1% in nonsevere patients and 32.5% in severe cases during the average 32 days of follow-up period. Survival analysis revealed that male, elder age, leukocytosis, high LDH level, cardiac injury, hyperglycemia, and high-dose corticosteroid use were associated with death in patients with severe COVID-19.

Conclusions

Patients with elder age, hypertension, and high LDH level need careful observation and early intervention to prevent the potential development of severe COVID-19. Severe male patients with heart injury, hyperglycemia, and high-dose corticosteroid use may have high risk of death.

https://doi.org/10.1016/j.jaci.2020.04.006

John L. Sapp, Wael Alqarawi, Ciorsti J. MacIntyre, Rafik Tadros, Christian Steinberg, Jason D. Roberts, Zachary Laksman, Jeff S. Healey, Andrew D. Krahn

Guidance On Minimizing Risk of Drug-Induced Ventricular Arrhythmia During Treatment of COVID-19: A Statement from the Canadian Heart Rhythm Society

Canadian Journal of Cardiology, 2020

Abstract:

The COVID-19 pandemic has led to efforts at rapid investigation and application of drugs which may improve prognosis, but for which safety and efficacy are not yet established. This document
attempts to provide reasonable guidance for use of antimicrobials which have uncertain benefit but may increase risk of QT prolongation and ventricular proarrhythmia, notably, chloroquine, hydroxychloroquine, azithromycin, and lopinavir/ritonavir. During the pandemic, efforts to reduce spread and minimize effects on health care resources mandate minimization of unnecessary medical procedures and testing. We recommend that the risk of drug proarrhythmia be minimized by: 1. discontinuing unnecessary medications which may also increase the QT interval, 2. identifying outpatients who are likely at low risk and do not need further testing (no history of prolonged QT, unexplained syncope or family history of premature sudden cardiac death, no medications which may prolong the QT interval, and/or prior known normal QTc), and 3. performing baseline testing in hospitalized patients or those who may be at higher risk. If baseline ECG testing reveals a moderately prolonged QTc, optimization of medications and electrolytes may permit therapy. If the QTc is markedly prolonged, drugs which further prolong it should be avoided, or expert consultation may permit administration with mitigating precautions. These recommendations are made while there are no known effective treatments for COVID-19 and should be revisited when further data on efficacy and safety becomes available.

https://doi.org/10.1016/j.cjca.2020.04.003

L Plaçais, Q Richier

COVID-19: caractéristiques cliniques, biologiques et radiologiques chez l’adulte, l’enfant et la femme enceinte. Une mise au point au cœur de la pandémie

La Revue de Médecine Interne, 2020

Abstract:

La propagation du nouveau coronavirus SARS-CoV-2, découvert en Chine en janvier 2020, a mené à une pandémie dès mars 2020, obligeant chaque système de soins des pays touchés à une adaptation rapide. Pour mieux faire face à cette crise sanitaire majeure, qui a donné lieu à de nombreuses publications scientifiques, nous avons synthétisé les principales études cliniques originales afin de faciliter la prise en charge au quotidien des patients atteints de COVID-19. Nous détaillons les premiers signes et l’évolution de la maladie ainsi que les différentes formes cliniques, y compris extra-pulmonaires, telles qu’elles sont connues au début de cette pandémie. Nous insistons sur les marqueurs cliniques, biologiques et scannographiques prédictifs de sévérité ou de mortalité. Enfin, nous discutons de l’impact de l’infection par le SARS-CoV-2 dans les populations suspectes d’être à haut risque de formes sévères.

The spread of the new coronavirus SARS-CoV-2, discovered in China in January 2020, led to a pandemic as early as March 2020, forcing every health care system in the affected countries to adapt quickly. In order to better address this major health crisis, which has given rise to numerous scientific publications, we have synthesized the main original clinical studies to facilitate the day-to-day management of patients with COVID-19. We detail the early signs and progression of the disease as well as the different clinical forms, including extra-pulmonary, as known at the beginning of this pandemic. We focus on clinical, biological and CT markers predictive of severity or mortality. Finally, we discuss the impact of SARS-CoV-2 infection in populations suspected to be at high risk of severe forms.

https://doi.org/10.1016/j.revmed.2020.04.004

The Annals of Thoracic Surgery, 2020

**Abstract:**

The extraordinary demands of managing the COVID-19 pandemic has disrupted the world’s ability to care for patients with thoracic malignancies. As a hospital’s COVID-19 population increases and hospital resources are depleted, the ability to provide surgical care is progressively restricted - forcing surgeons to prioritize among their cancer populations. Representatives from multiple cancer, surgical and research organizations have come together to provide a guide for triaging patients with thoracic malignancies, as the impact of COVID-19 evolves as each hospital.

[https://doi.org/10.1016/j.athoracsur.2020.03.005](https://doi.org/10.1016/j.athoracsur.2020.03.005)

Yaron Ogen

**Assessing nitrogen dioxide (NO2) levels as a contributing factor to coronavirus (COVID-19) fatality**

Science of The Total Environment, Volume 726, 2020

**Abstract:**

Nitrogen dioxide (NO2) is an ambient trace-gas result of both natural and anthropogenic processes. Long-term exposure to NO2 may cause a wide spectrum of severe health problems such as hypertension, diabetes, heart and cardiovascular diseases and even death. The objective of this study is to examine the relationship between long-term exposure to NO2 and coronavirus fatality. The Sentinel-5P is used for mapping the tropospheric NO2 distribution and the NCEP/NCAR reanalysis for evaluating the atmospheric capability to disperse the pollution. The spatial analysis has been conducted on a regional scale and combined with the number of death cases taken from 66 administrative regions in Italy, Spain, France and Germany. Results show that out of the 4443 fatality cases, 3487 (78%) were in five regions located in north Italy and central Spain. Additionally, the same five regions show the highest NO2 concentrations combined with downwards airflow which prevent an efficient dispersion of air pollution. These results indicate that the long-term exposure to this pollutant may be one of the most important contributors to fatality caused by the COVID-19 virus in these regions and maybe across the whole world.

[https://doi.org/10.1016/j.scitotenv.2020.138605](https://doi.org/10.1016/j.scitotenv.2020.138605)

Ziying Lei, Huijuan Cao, Yusheng Jie, Zhanlian Huang, Xiaoyan Guo, Junfeng Chen, Liang Peng, Hong Cao, Xiaoling Dai, Jing Liu, Xuejun Li, Jianyun Zhu, Wenxiong Xu, Dabiao Chen, Zhiliang Gao, Jianrong He, Bingliang Lin

**A cross-sectional comparison of epidemiological and clinical features of patients with coronavirus disease (COVID-19) in Wuhan and outside Wuhan, China**

Travel Medicine and Infectious Disease, 2020

**Abstract:**
Background

Coronavirus disease 2019 (COVID-19) has spread outside the initial epicenter of Wuhan. We compared cases in Guangzhou and Wuhan to illustrate potential changes in pathogenicity and epidemiological characteristics as the epidemic has progressed.

Methods

We studied 20 patients admitted to the Third Affiliated Hospital of Sun Yat-Sen University in Guangzhou, China from January 22 to February 12, 2020. Data were extracted from medical records. These cases were compared with the 99 cases, previously published in Lancet, from Wuhan Jinyintan Hospital from January 1 to January 20, 2020.

Results

Guangzhou patients were younger and had better prognosis than Wuhan patients. The Wuhan patients were more likely to be admitted to the ICU (23% vs 5%) and had a higher mortality rate (11% vs 0%). Cases in Guangzhou tended to be more clustered. Diarrhea and vomiting were more common among Guangzhou patients and SARS-CoV-2 RNA was found in feces. Fecal SARS-CoV-2 RNA remained positive when nasopharyngeal swabs turned negative in some patients.

Conclusions

This study indicates possible diminishing virulence of the virus in the process of transmission. Yet persistent positive RNA in feces after negative nasopharyngeal swabs suggests a possible prolonged transmission period that challenges current quarantine practices.

https://doi.org/10.1016/j.tmaid.2020.101664

Yunbao Pan, Xinran Li, Gui Yang, Junli Fan, Yueting Tang, Jin Zhao, Xinghua Long, Shuang Guo, Ziwu Zhao, Yinjuan Liu, Hanning Hu, Han Xue, Yirong Li

Serological immunochromatographic approach in diagnosis with SARS-CoV-2 infected COVID-19 patients

Journal of Infection, 2020

Abstract:

An outbreak of new coronavirus SARS-CoV-2 was occurred in Wuhan, China and rapidly spread to other cities and nations. The standard diagnostic approach that widely adopted in the clinic is nucleic acid detection by real-time RT-PCR. However, the false-negative rate of the technique is unneglectable and serological methods are urgently warranted. Here, we presented the colloidal gold-based immunochromatographic (ICG) strip targeting viral IgM or IgG antibody and compared it with real-time RT-PCR. The sensitivity of ICG assay with IgM and IgG combinatorial detection in nucleic acid confirmed cases were 11.1%, 92.9% and 96.8% at the early stage (1–7 days after onset), intermediate stage (8–14 days after onset), and late stage (more than 15 days), respectively. The ICG detection capacity in nucleic acid-negative suspected cases was 43.6%. In addition, the concordance of whole blood samples and plasma showed Cohen's kappa value of 0.93, which represented the almost perfect agreement between two types of samples. In conclusion, serological ICG strip assay in detecting SARS-CoV-2 infection is both sensitive and consistent, which is considered as an excellent supplementary approach in clinical application.
COVID-19 and telemedicine: Immediate action required for maintaining healthcare providers well-being

Journal of Clinical Virology, Volume 126, 2020

Abstract:

The well-being of the health care workforce is the cornerstone of every well-functioning health system. As a result of the pandemic, medical healthcare providers are under an enormous amount of workload pressure along with increased total health expenditures. The overwhelming burden of COVID-19 illness could lead to caregiver burnout. Direct-to-consumer telemedicine can enable patients to connect with their healthcare provider at a distance. This virtual platform could be used by smartphones or webcam-enabled computers and allows physicians to effectively screen patients with early signs of COVID-19 before they reach to hospital.

Features of anosmia in COVID-19

Médecine et Maladies Infectieuses, 2020

Abstract:

Background: Medical publications about anosmia with COVID-19 are scarce. We aimed to describe the prevalence and features of anosmia in COVID-19 patients. Methods: We retrospectively included COVID-19 patients with anosmia between March 1 and March 17, 2020. We used SARS-CoV-2 real time PCR in respiratory samples to confirm the cases. Results: Fifty-four of 114 patients (47%) with confirmed COVID-19 reported anosmia. Mean age of the 54 patients was 47 (±16) years; 67% were females and 37% were hospitalized. The median Charlson comorbidity index was 0.70 (±1.6 [0-7]). Forty-six patients (85%) had dysgeusia and 28% presented with pneumonia. Anosmia began 4.4 (±1.9 [1-8]) days after infection onset. The mean duration of anosmia was 8.9 (±6.3 [1-21]) days and 98% of patients recovered within 28 days. Conclusions: Anosmia was present in half of our European COVID-19 patients and was often associated with dysgeusia.

Can post-exposure prophylaxis for COVID-19 be considered as one of outbreak response strategies in long-term care hospitals?

International Journal of Antimicrobial Agents, 2020
Abstract:

With ongoing global outbreak of coronavirus disease 2019 (COVID-19), management of exposure events is a concern. Long-term care hospitals (LTCHs) are especially vulnerable to cluster outbreaks, since it is difficult to find facilities and healthcare personnel for their separate isolation care in a large outbreak situation. Although several drugs have been proposed as treatment regimens, there are no data on the effectiveness and safety of post-exposure prophylaxis (PEP) for COVID-19. After a large COVID-19 exposure event in a LTCH in Korea, PEP using hydroxychloroquine (HCQ) was conducted to 211 persons including 189 patients and 22 careworkers, whose baseline polymerase chain reaction (PCR) tests for COVID-19 were negative. PEP was completed in 184 (97.4%) patients and 21 (95.5%) careworkers without serious adverse events. At the end of 14 days of quarantine, follow-up PCR tests were all negative. Based on our experience, further clinical studies would be conducted for COVID-19 PEP.

https://doi.org/10.1016/j.ijantimicag.2020.105988

Jinsong Zhang, Lan Shuai, Hui Yu, Zhouye Wang, Meihui Qiu, Lu Lu, Xuan Cao, Weipin Xia, Yuanyuan Wang, Runsen Chen

Acute stress, behavioural symptoms and mood states among school-age children with attention-deficit/hyperactive disorder during the COVID-19 outbreak

Asian Journal of Psychiatry, Volume 51, 2020

https://doi.org/10.1016/j.ajp.2020.102077

Mauro Percudani, Matteo Corradin, Mauro Moreno, Annamaria Indelicato, Antonio Vita

Mental Health Services in Lombardy during COVID-19 outbreak

Psychiatry Research, Volume 288, 2020

Abstract:

Lombardy is the Region in Italy the most heavily affected by coronavirus disease (COVID-19) contagion. The Regional Health Authority mandates that mental health services should be guaranteed, identifying mental health as a priority for their citizens. Recommendations for occupational and health safety have been provided to patients and hospital staff, including support for telemedicine activities and remote psychosocial interventions. Services of the Mental Health Departments of Milano “Niguarda” and Brescia “Spedali Civili” Hospitals are providing continued care at a community, residential and hospital level, and to positive COVID-19 psychiatric patients in need of hospitalization.

https://doi.org/10.1016/j.psychres.2020.112980

Fei Shao, Shuang Xu, Xuedi Ma, Zhouming Xu, Jiayou Lyu, Michael Ng, Hao Cui, Changxiao Yu, Qing Zhang, Peng Sun, Ziren Tang

In-hospital cardiac arrest outcomes among patients with COVID-19 pneumonia in Wuhan, China
Abstract:

Objective

: To describe the characteristics and outcomes of patients with severe COVID-19 and in-hospital cardiac arrest (IHCA) in Wuhan, China.

Methods

The outcomes of patients with severe COVID-19 pneumonia after IHCA over a 40-day period were retrospectively evaluated. Between January 15 and February 25, 2020, data for all cardiopulmonary resuscitation (CPR) attempts for IHCA that occurred in a tertiary teaching hospital in Wuhan, China were collected according to the Utstein style. The primary outcome was restoration of spontaneous circulation (ROSC), and the secondary outcomes were 30-day survival, and neurological outcome.

Results

: Data from 136 patients showed 119 (87.5%) patients had a respiratory cause for their cardiac arrest, and 113 (83.1%) were resuscitated in a general ward. The initial rhythm was asystole in 89.7%, pulseless electrical activity (PEA) in 4.4%, and shockable in 5.9%. Most patients with IHCA were monitored (93.4%) and in most resuscitation (89%) was initiated <1min. The average length of hospital stay was 7 days and the time from illness onset to hospital admission was 10 days. The most frequent comorbidity was hypertension (30.2%), and the most frequent symptom was shortness of breath (75%). Of the patients receiving CPR, ROSC was achieved in 18 (13.2%) patients, 4 (2.9%) patients survived for at least 30 days, and one patient achieved a favourable neurological outcome at 30 days. Cardiac arrest location and initial rhythm were associated with better outcomes.

Conclusion

: Survival of patients with severe COVID-19 pneumonia who had an in-hospital cardiac arrest was poor in Wuhan.

https://doi.org/10.1016/j.resuscitation.2020.04.005

Hu Yun, Zhuoran Sun, Jun Wu, Aiguo Tang, Min Hu, Zhongyuan Xiang

Laboratory data analysis of novel coronavirus (COVID-19) screening in 2510 patients

Clinica Chimica Acta, 2020

Abstract:

Background

Novel coronavirus (COVID-19) is highly infectious and requires early detection, isolation, and treatment. We tried to find some useful information by analyzing the covid-19 screening data, so as to provide help for clinical practice.

Method
We collected nucleic acid and hematology data from 2510 patients for COVID-19 infection for retrospective analysis.

Result

COVID-19 and influenza A and B infection rates were 1.3%, 3%, and 3%, respectively. COVID-19 nucleic acid was detected in stool but not in tear samples from 8 positive patients. Among the 32 patients with COVID-19, 15 (47%) and 16 (50%) patients showed decreased lymphocyte count and lymphocyte ratio, 21 (66%) and 24 (75%) patients showed decreased eosinophil count and eosinophil ratio, and 18 (56%) patients showed increased C-reactive protein. Ten hematological indicators significantly differed in the blood of patients with COVID-19 and those with influenza A and B (P < 0.05). Eighteen hematological indicators significantly differed between patients with COVID-19 and negative patients (P < 0.05).

Conclusion

The positive rate of influenza A and B infection was higher than that of COVID-19. When pharyngeal swab collection may cause infection, fecal samples can be examined. Evaluation of pharyngeal swab and fecal samples can improve the positive rate of nucleic acid detection. The COVID-19 can cause some hematological indices changes.

https://doi.org/10.1016/j.cca.2020.04.018

Maroun Khoury, Patricia R.M. Rocco, Donald G Phinney, Mauro Krampera, Ivan Martin, Sowmya Viswanathan, Jan A. Nolta, Katarina LeBlanc, Jacques Galipeau, Daniel J. Weiss

Cell-Based Therapies for COVID-19: Proper Clinical Investigations are Essential

Cytotherapy, 2020

Abstract:

The serious consequences of the global COVID-19 pandemic have prompted a rapid global response to develop effective therapies that can lessen disease severity in infected patients. Cell-based approaches, primarily using mesenchymal stromal cells (MSCs), have demonstrated a strong safety profile and possible efficacy in patients with the acute respiratory distress syndrome (ARDS), but whether these therapies are effective for treating respiratory virus-induced ARDS is unknown. According to the WHO ICTRP and the NIH clinicaltrials.gov databases, 27 clinical investigations of MSC-based cell therapy approaches have begun in China since the onset of the COVID-19 outbreak, as well as a growing number of academic and industry trials elsewhere. Several recent published reports have suggested potential efficacy; however, the available data presented is either anecdotal or from incomplete, poorly controlled investigations. Therefore, while there may be a potential role for MSCs and other cell-based therapies in treatment of COVID-19, these need to be investigated in a rationally designed, controlled approach if safety and efficacy are to be demonstrated accurately. We urge that the field proceeds by finding balance between swift experimentation and communication of results, and scientifically coherent generation and analysis of clinical data.

https://doi.org/10.1016/j.jcyt.2020.04.089
Yuan Wu, Jun Wang, Chenggang Luo, Sheng Hu, Xi Lin, Aimee E. Anderson, Eduardo Bruera, Xiaoxin Yang, Shaozhong Wei, Yu Qian

**A comparison of burnout frequency among oncology physicians and nurses working on the front lines and usual wards during the COVID-19 epidemic in Wuhan, China**

Journal of Pain and Symptom Management, 2020

**Abstract:**

**Context**

The epidemic of Coronavirus Disease 2019 (COVID-19) was first identified in Wuhan, China and has now spread worldwide. In the affected countries, physicians and nurses are under heavy workload conditions and are at high risk of infection.

**Objectives**

The aim of this study was to compare the frequency of burnout between physicians and nurses on the front line and those working in usual wards.

**Methods**

A survey with 49 questions total was administered to 220 medical staff members from the COVID-19 front lines and usual wards, with a ratio of 1:1. General information such as age, gender, marriage status, and the Maslach Burnout Inventory-Medical Personnel (MBI), were gathered and compared.

**Results**

The group working on the front lines had a lower frequency of burnout (13% versus 39%, P < .0001), and were less worried about being infected compared to the usual ward group.

**Conclusion**

Compared to medical staff working on their usual wards for uninfected patients, medical staff working on the COVID-19 front line had a lower frequency of burnout. These results suggest that in the face of the COVID-19 crisis, both front line and usual ward staff should be considered when policies and procedures to support the well-being of health care workers are devised.

https://doi.org/10.1016/j.jpainsymman.2020.04.008

Donald C. Hall, Hai-Feng Ji

**A search for medications to treat COVID-19 via in silico molecular docking models of the SARS-CoV-2 spike glycoprotein and 3CL protease**

Travel Medicine and Infectious Disease, 2020

**Abstract:**

**Background**

The COVID-19 has now been declared a global emergency by the World Health Organization. There is an emergent need to search for possible medications.
Method

Utilization of the available sequence information, homology modeling, and in silico docking a number of available medications might prove to be effective in inhibiting the COVID-19 two main drug targets the spike glycoprotein and the 3CL protease.

Results

Several compounds were determined from the in silico docking models that might prove to be effective inhibitor for the COVID-19. Several antiviral medications: Zanamivir, Indinavir, Saquinavir, and Remdesivir show potential as and 3CLPRO main proteinase inhibitors and as a treatment of COVID-19.

Conclusion

Zanamivir, Indinavir, Saquinavir, and Remdesivir are among the exciting hits on the 3CLPRO main proteinase. It is also exciting to uncover that Flavin Adenine Dinucleotide (FAD) Adeflavin, B2 Deficiency medicine, and Coenzyme A, a coenzyme, may also be potentially used for the treatment of SARS-CoV-2 infections. The use of these off-label medications may be beneficial in the treatment of the COVID-19.

https://doi.org/10.1016/j.tmaid.2020.101646

Casey M. O’Connor, Afshin A. Anoushiravani, Matthew R. DiCaprio, William L. Healy, Richard Iorio

**Economic Recovery Following the COVID-19 Pandemic: Resuming Elective Orthopaedic Surgery and Total Joint Arthroplasty**

The Journal of Arthroplasty, 2020

[https://doi.org/10.1016/j.arth.2020.04.038](https://doi.org/10.1016/j.arth.2020.04.038)

Ranil Jayawardena, Piumika Sooriyaarachchi, Michail Chourdakis, Chandima Jeewandara, Priyanga Ranasinghe

**Enhancing immunity in viral infections, with special emphasis on COVID-19: A review**

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, 2020

**Abstract:**

Background and aims

Balanced nutrition which can help in maintaining immunity is essential for prevention and management of viral infections. While data regarding nutrition in coronavirus infection (COVID-19) are not available, in this review, we aimed to evaluated evidence from previous clinical trials that evaluated nutrition-based interventions for viral diseases (with special emphasis on respiratory infections), and summaries our observations.

Methods
A systematic search strategy was employed using keywords to search the literature in 3 key medical databases: PubMed®, Web of Science® and SciVerse Scopus®. Studies were considered eligible if they were controlled trials in humans, measuring immunological parameters, on viral and respiratory infections. Clinical trials on vitamins, minerals, nutraceuticals and probiotics were included.

Results
total of 640 records were identified initially and 22 studies were included from other sources. After excluding duplicates and articles that did not meet the inclusion criteria, 43 studies were obtained (vitamins: 13; minerals: 8; nutraceuticals: 18 and probiotics: 4). Among vitamins, A and D showed a potential benefit, especially in deficient populations. Among trace elements, selenium and zinc have also shown favourable immune-modulatory effects in viral respiratory infections. Several nutraceuticals and probiotics may have some role in enhancing immune functions. Micronutrients may be beneficial in nutritionally depleted elderly population.

Conclusions
We summaries possible benefits of some vitamins, trace elements, nutraceuticals and probiotics. Nutrition principles based on these data could be useful in possible prevention and management of COVID-19

https://doi.org/10.1016/j.dsx.2020.04.015


Incidence of thrombotic complications in critically ill ICU patients with COVID-19

Thrombosis Research, 2020

Abstract:

Introduction
COVID-19 may predispose to both venous and arterial thromboembolism due to excessive inflammation, hypoxia, immobilisation and diffuse intravascular coagulation. Reports on the incidence of thrombotic complications are however not available.

Methods
We evaluated the incidence of the composite outcome of symptomatic acute pulmonary embolism (PE), deep-vein thrombosis, ischemic stroke, myocardial infarction or systemic arterial embolism in all COVID-19 patients admitted to the ICU of 2 Dutch university hospitals and 1 Dutch teaching hospital.

Results
We studied 184 ICU patients with proven COVID-19 pneumonia of whom 23 died (13%), 22 were discharged alive (12%) and 139 (76%) were still on the ICU on April 5th 2020. All patients received at least standard doses thromboprophylaxis. The cumulative incidence of the composite outcome was 31% (95%CI 20-41), of which CTPA and/or ultrasonography confirmed VTE in 27% (95%CI 17-37%) and arterial thrombotic events in 3.7% (95%CI 0-8.2%). PE was the most frequent
thrombotic complication (n = 25, 81%). Age (adjusted hazard ratio (aHR) 1.05/per year, 95%CI 1.004-1.01) and coagulopathy, defined as spontaneous prolongation of the prothrombin time > 3 s or activated partial thromboplastin time > 5 s (aHR 4.1, 95%CI 1.9-9.1), were independent predictors of thrombotic complications.

Conclusion

The 31% incidence of thrombotic complications in ICU patients with COVID-19 infections is remarkably high. Our findings reinforce the recommendation to strictly apply pharmacological thrombosis prophylaxis in all COVID-19 patients admitted to the ICU, and are strongly suggestive of increasing the prophylaxis towards high-prophylactic doses, even in the absence of randomized evidence.

https://doi.org/10.1016/j.thromres.2020.04.013

Eiran Z. Gorodeski, Parag Goyal, Zachary L. Cox, Jennifer T. Thibodeau, Rebecca Reay, Kismet Rasmusson, Joseph G. Rogers, Randall C. Starling

Virtual Visits for Care of Patients with Heart Failure in the Era of COVID-19: A Statement from the Heart Failure Society of America

Journal of Cardiac Failure, 2020

https://doi.org/10.1016/j.cardfail.2020.04.008

Raju Vaishya, Mohd Javaid, Ibrahim Haleem Khan, Abid Haleem

Artificial Intelligence (AI) applications for COVID-19 pandemic


Abstract:

Background and aims

Healthcare delivery requires the support of new technologies like Artificial Intelligence (AI), Internet of Things (IoT), Big Data and Machine Learning to fight and look ahead against the new diseases. We aim to review the role of AI as a decisive technology to analyze, prepare us for prevention and fight with COVID-19 (Coronavirus) and other pandemics.

Methods

The rapid review of the literature is done on the database of Pubmed, Scopus and Google Scholar using the keyword of COVID-19 or Coronavirus and Artificial Intelligence or AI. Collected the latest information regarding AI for COVID-19, then analyzed the same to identify its possible application for this disease.

Results

We have identified seven significant applications of AI for COVID-19 pandemic. This technology plays an important role to detect the cluster of cases and to predict where this virus will affect in future by collecting and analyzing all previous data.
Conclusions

Healthcare organizations are in an urgent need for decision-making technologies to handle this virus and help them in getting proper suggestions in real-time to avoid its spread. AI works in a proficient way to mimic like human intelligence. It may also play a vital role in understanding and suggesting the development of a vaccine for COVID-19. This result-driven technology is used for proper screening, analyzing, prediction and tracking of current patients and likely future patients. The significant applications are applied to tracks data of confirmed, recovered and death cases.

https://doi.org/10.1016/j.dsx.2020.04.012

Garrett Prince, Michelle Sergel

Persistent hiccups as an atypical presenting complaint of COVID-19

The American Journal of Emergency Medicine, 2020

Abstract:

Hiccups (singultus) are reflex inspiratory movements that involve the swallowing reflex arc and can be classified as acute (<48 h) or persistent (>48 h). A 62-year-old man with no history of malignancy or pulmonary disease presented to the Emergency Department with a four-day history of persistent hiccups. Other than episodic hiccupping, his physical examination was otherwise unremarkable. An abnormal chest X-ray led to a CT scan of the chest with IV contrast, which demonstrated regional, peripheral groundglass opacities of the upper lobes with small focal groundglass opacities scattered throughout the lungs. He was tested for COVID-19 per admission protocol, started on hydroxychloroquine, his hiccups improved, and he was discharged to home after 3 days. An emergency medicine physician should keep COVID-19 on the differential and be vigilant of exposure in atypical presentations.

https://doi.org/10.1016/j.ajem.2020.04.045

Xun Ding, Jia Xu, Jun Zhou, Qingyun Long

Chest CT findings of COVID-19 pneumonia by duration of symptoms

European Journal of Radiology, 2020

Abstract:

Purpose

To evaluate lung abnormalities on thin-section computed tomographic (CT) scans in patients with COVID-19 and correlate findings to duration of symptoms.

Methods

In total, 348 CT scans in 112 patients were classified according to the time after the onset of the initial symptoms, namely stage-1 (0-4 days); stage-2 (5-9 days); stage-3 (10-14 days); stage-4 (15-21 days); stage-5 (22-28 days); and stage-6 (>28 days). Each lung lobe was evaluated for extent affected by ground-glass opacities (GGO), crazy-paving pattern and consolidation, in five categories of percentual severity. Summation of scores from all five lung lobes provided the total CT score (maximal CT score, 25).
Results

The predominant patterns of lung abnormalities were GGOs, crazy-paving pattern, consolidation and linear opacities. The frequency of crazy-paving pattern, consolidation and linear opacities peaked at stage-3 (62.7%), stage-4 (75.0%) and stage-5 (83.1%), respectively, and decreased thereafter. Total CT scores increased from stage-1 to stage-2 (2.8 ± 3.1, vs. 6.5 ± 4.6, respectively, \(P < 0.01\)), and thereafter remained high. The lower lobes were more inclined to be involved with higher CT scores except for stage-1. At stage-6 98.1% of CT scans still showed abnormalities (CT score 7.5 ± 4.1).

Conclusion

Thin-section CT could provide semi-quantitative analysis of pulmonary damage severity. This disease changed rapidly at the early stage, then tended to be stable and lasted for a long time.

https://doi.org/10.1016/j.ejrad.2020.109009

Yuri Bruinen de Bruin, Anne-Sophie Lequarre, Josephine McCourt, Peter Clevestig, Filippo Pigazzani, Maryam Zare Jeddi, Claudio Colosio, Margarida Goulart

Initial impacts of global risk mitigation measures taken during the combatting of the COVID-19 pandemic

Safety Science, 2020

Abstract:

This paper presents an analysis of risk mitigation measures taken by countries around the world facing the current COVID-19 outbreak. In light of the current pandemic the authors collated and clustered (using harmonised terminology) the risk mitigation measures taken around the globe in the combat to contain, and since March 11 2020, to limit the spread of the SARS-CoV-2 virus known to cause the Coronavirus disease 2019 (COVID-19). This overview gathers lessons learnt, providing an update on the current knowledge for authorities, sectors and first responders on the effectiveness of said measures, and may allow enhanced prevention, preparedness and response for future outbreaks. Various measures such as mobility restrictions, physical distancing, hygienic measures, socio-economic restrictions, communication and international support mechanisms have been clustered and are reviewed in terms of the nature of the actions taken and their qualitative early-perceived impact. At the time of writing, it is still too premature to express the quantitative effectiveness of each risk mitigation cluster, but it seems that the best mitigation results are reported when applying a combination of voluntary and enforceable measures.

https://doi.org/10.1016/j.ssci.2020.104773

Christian M. Hedrich

COVID-19 – Considerations for the paediatric rheumatologist

Clinical Immunology, Volume 214, 2020

Abstract:
The novel coronavirus SARS-CoV2 is a threat to the health and well-being of millions of lives across the globe. A significant proportion of adult patients require hospitalisation and may develop severe life-threatening complications. Children, on the other hand, can carry and transmit the virus, but usually do not develop severe disease. Mortality in the paediatric age-group is relatively low. Differences in virus containment and clearance, as well as reduced inflammation-related tissue and organ damage may be caused by age-specific environmental and host factors. Since severe complications in adults are frequently caused by uncontrolled immune responses and a resulting “cytokine storm” that may be controlled by targeted blockade of cytokines, previously established treatment with immunosuppressive treatments may indeed protect children from complications.

https://doi.org/10.1016/j.clim.2020.108420

Oluwatomi Iken, Uzoma Abakporo, Olaniyi Ayobami, Timothy Attoye

COVID-19: Travel health and the implications for sub-Saharan Africa

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101645

Grace DiGiovanni, Kathryn Mousaw, Terri Lloyd, Nancy Dukelow, Bryan Fitzgerald, Heidi D'Aurizio, Kah Poh Loh, Supriya Mohile, Erika Ramsdale, Ronald Maggiore, Jason Zittel, Sindhuja Kadambi, Allison Magnuson

Development of a telehealth geriatric assessment model in response to the COVID-19 pandemic

Journal of Geriatric Oncology, 2020

https://doi.org/10.1016/j.jgo.2020.04.007

Sanjay R. Parikh, Jeffrey R. Avansino, Andre AS. Dick, Brianna K. Enriquez, Jeremy M. Geiduschek, Lynn D. Martin, Ruth A. McDonald, Suzanne M. Yandow, Danielle M. Zerr, Jeffrey G. Ojemann

Collaborative Multi-Disciplinary Incident Command at Seattle Children’s Hospital for Rapid Preparatory Pediatric Surgery Countermeasures to the COVID-19 Pandemic

Journal of the American College of Surgeons, 2020

Abstract:

Washington State was the first U.S. state to have a patient test positive for COVID-19. Prior to this, our children’s hospital proactively implemented an incident command structure which allowed for collaborative creation of safety measures, policies and procedures for both patients, families, staff and providers. Although the treatment and protective standards are continuously evolving, this commentary shares our thoughts on how an institution, specifically surgical services may develop collaborative process improvement to accommodate for rapid and ongoing change. Specific changes
outlined include [1] early establishment of incident command [2] personal protective equipment conservation, [3] workforce safety, [4] surgical and ambulatory patient triage, and [5] optimization of trainee education. Please note that the contents of this manuscript are shared in the interest of providing collaborative information and are under continuous development as our regional situation changes. We recognize the limitations of this commentary and do not suggest that our approaches represent validated best practices.

https://doi.org/10.1016/j.jamcollsurg.2020.04.012

Mainak Banerjee, Soumen Chakraborty, Rimesh Pal

Diabetes self-management amid COVID-19 pandemic

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 4, 2020, Pages 351-354

Abstract:

Background and aims

COVID-19 pandemic has challenged the physician-centered approach of diabetes care in India that is primarily based on routine clinic visits. We aim to review the various aspects of patient-centered care via diabetes self-management education based on available literature.

Methods

This is a narrative review using Pubmed, EMBASE and Google Scholar search till March 29, 2020. Search terms were “COVID-19”, “diabetes self-care”, “diabetes self-management education”, “DSME”, “diabetes self-management in India”, “diabetes self-care in India” and “DSME in India”.

Results

We have discussed an educational plan on diabetes self-management that can be adopted for people with diabetes mellitus in our country amid the ongoing pandemic. We have also identified the barriers to diabetes self-management in the current scenario and suggested possible solutions to overcome those.

Conclusions

We have reemphasized the need for a simultaneous patient-centered approach in routine diabetes care that has to be coordinated by a multidisciplinary team amid the ongoing COVID-19 pandemic.

https://doi.org/10.1016/j.dsx.2020.04.013

Emily A. Troyer, Jordan N. Kohn, Suzi Hong

Are we facing a crashing wave of neuropsychiatric sequelae of COVID-19? Neuropsychiatric symptoms and potential immunologic mechanisms

Brain, Behavior, and Immunity, 2020

Abstract:
The coronavirus disease 19 (COVID-19) pandemic is a significant psychological stressor in addition to its tremendous impact on every facet of individuals’ lives and organizations in virtually all social and economic sectors worldwide. Fear of illness and uncertainty about the future precipitate anxiety- and stress-related disorders, and several groups have rightfully called for the creation and dissemination of robust mental health screening and treatment programs for the general public and front-line healthcare workers. However, in addition to pandemic-associated psychological distress, the direct effects of the virus itself (several acute respiratory syndrome coronavirus; SARS-CoV-2), and the subsequent host immunologic response, on the human central nervous system (CNS) and related outcomes are unknown. We discuss currently available evidence of COVID-19 related neuropsychiatric sequelae while drawing parallels to past viral pandemic-related outcomes. Past pandemics have demonstrated that diverse types of neuropsychiatric symptoms, such as encephalopathy, mood changes, psychosis, neuromuscular dysfunction, or demyelinating processes, may accompany acute viral infection, or may follow infection by weeks, months, or longer in recovered patients. The potential mechanisms are also discussed, including viral and immunological underpinnings. Therefore, prospective neuropsychiatric monitoring of individuals exposed to SARS-CoV-2 at various points in the life course, as well as their neuroimmune status, are needed to fully understand the long-term impact of COVID-19, and to establish a framework for integrating psychoneuroimmunology into epidemiologic studies of pandemics.

https://doi.org/10.1016/j.bbi.2020.04.027

N. Woznitza, A. Nair, S.S. Hare

COVID-19: A case series to support radiographer preliminary clinical evaluation

Radiography, 2020


Maria Nicola, Zaid Alsafi, Catrin Sohrabi, Ahmed Kerwan, Ahmed Al-Jabir, Christos Iosifidis, Maliha Agha, Riaz Agha

The Socio-Economic Implications of the Coronavirus and COVID-19 Pandemic: A Review

International Journal of Surgery, 2020

Abstract:

The COVID-19 pandemic has resulted in over 1.4 million confirmed cases and over 83,000 deaths globally. It has also sparked fears of an impending economic crisis and recession. Social distancing, self-isolation and travel restrictions forced a decrease in the workforce across all economic sectors and caused many jobs to be lost. Schools have closed down, and the need of commodities and manufactured products has decreased. In contrast, the need for medical supplies has significantly increased. The food sector has also seen a great demand due to panic-buying and stockpiling of food products. In response to this global outbreak, we summarise the socio-economic effects of COVID-19 on individual aspects of the world economy.

https://doi.org/10.1016/j.ijsu.2020.04.018
Jonathan DePierro, Sandra Lowe, Craig Katz

Lessons learned from 9/11: Mental health perspectives on the COVID-19 pandemic

Psychiatry Research, Volume 288, 2020

Abstract:

The COVID-19 pandemic will likely lead to high rates of PTSD, depression, and substance misuse among survivors, victims’ families, medical workers, and other essential personnel. The mental health response to the 9/11/01 terrorist attacks, culminating in a federally-funded health program, provides a template for how providers may serve affected individuals. Drawing on the 9/11 experience, we highlight effective prevention measures, likely short and long-term treatment needs, vulnerable subgroups, and important points of divergence between 9/11 and the COVID-19 pandemic. Mental health monitoring, early identification of at-risk individuals, and treatment irrespective of financial barriers are essential for minimizing chronic distress.

https://doi.org/10.1016/j.psychres.2020.113024

Olivier Fabre, Olivier Rebet, Ionut Carjaliu, Mihai Radutoiu, Laurence Gautier, Ilir Hysi

Severe Acute Proximal Pulmonary Embolism and COVID-19: A Word of Caution

The Annals of Thoracic Surgery, 2020

Abstract:

Acute pulmonary embolism is an uncharacteristic presentation in patients with COVID-19. Here we describe the case of a young woman presenting with severe pulmonary embolism, without any associated symptoms of infections. A clot in a patent foramen ovale was noted. Despite emergency surgical embolectomy, her clinical conditions continued to deteriorate. She was put on extracorporeal life support and tested positive for COVID-19. She died of multiorgan failure on day 10. COVID-19 may have a thrombogenic effect and it may need to be considered in cases of pulmonary embolism and in absence of any obvious risk factor.

https://doi.org/10.1016/j.athoracsur.2020.04.005

John W. Goodell

COVID-19 and finance: Agendas for future research

Finance Research Letters, 2020

Abstract:

This paper highlights the enormous economic and social impact of COVID-19 with respect to articles that have either prognosticated such a large-scale event, and its economic consequences, or have assessed the impacts of other epidemics and pandemics. A consideration of possible impacts of COVID-19 on financial markets and institutions, either directly or indirectly, is briefly outlined
by drawing on a variety of literatures. A consideration of the characteristics of COVID-19, along with what research suggests have been the impacts of other past events that in some ways roughly parallel COVID-19, points toward avenues of future investigation.

Amir Moghanibashi-Mansourieh

Assessing the anxiety level of Iranian general population during COVID-19 outbreak

Asian Journal of Psychiatry, 2020

Abstract:

This study is aimed to assess the anxiety level of Iranian general population during COVID-19 outbreak. The online questionnaire surveyed 10,754 individuals from the general population of 31 provinces of Iran who completed the questionnaire on social networks from March 1 to March 9, 2020. The inferential statistics suggests that the level of anxiety was higher among women (95% CI [0.1, 81.36], p < 0.001), people who more followed corona-related news (p < 0.001) and the age group of 21-40 years (p < 0.001). Ultimately, the level of anxiety was significantly higher among people who had at least one family member, relative, or friend who contracted COVID-19 disease (95% CI [1.2, 35.03], p < 0.001). The health care system should adopt a package of psychosocial interventions to reduce the anxiety of high risk groups.

https://doi.org/10.1016/j.ajp.2020.102076

Riccardo Campi, Daniele Amparore, Umberto Capitanio, Enrico Checcucci, Andrea Salonia, Cristian Fiori, Andrea Minervini, Alberto Briganti, Marco Carini, Francesco Montorsi, Sergio Serni, Francesco Porpiglia

Assessing the Burden of Nondeferrable Major Uro- oncologic Surgery to Guide Prioritisation Strategies During the COVID-19 Pandemic: Insights from Three Italian High-volume Referral Centres

European Urology, 2020

Abstract:

The coronavirus 2019 (COVID-19) pandemic has led to an unprecedented emergency scenario for all aspects of health care, including urology. At the time of writing, Italy was the country with the highest rates of both infection and mortality. A panel of experts recently released recommendations for prioritising urologic surgeries in a low-resource setting. Of note, major cancer surgery represents a compelling challenge. However, the burden of these procedures and the impact of such recommendations on urologic practice are currently unknown. To fill this gap, we assessed the yearly proportion of high-priority major uro- oncologic surgeries at three Italian high-volume academic centres. Of 2387 major cancer surgeries, 32.3% were classified as high priority (12.6% of radical nephroureterectomy, 17.3% of nephrectomy, 33.9% of radical prostatectomy, and 36.2% of radical cystectomy cases). Moreover, 26.4% of high-priority major cancer surgeries were performed in patients at higher perioperative risk (American Society of Anesthesiologists score ≥3), with radical cystectomy contributing the most to this cohort (50%). Our real-life data contextualise ongoing recommendations on prioritisation strategies during the current COVID-19 pandemic,
highlighting the need for better patient selection for surgery. We found that approximately two-thirds of elective major uro-oncologic surgeries can be safely postponed or changed to another treatment modality when the availability of health care resources is reduced.

Patient summary

We used data from three high-volume Italian academic urology centres to evaluate how many surgeries performed for prostate, bladder, kidney, and upper tract urothelial cancer can be postponed in times of emergency. We found that approximately two-thirds of patients with these cancers do not require high-priority surgery. Conversely, of patients requiring high-priority surgery, approximately one in four is considered at high perioperative risk. These patients may pose challenges in allocation of resources in critical scenarios such as the current COVID-19 pandemic.

https://doi.org/10.1016/j.eururo.2020.03.054

Kazuha Nakamura, Mayu Hikone, Hiroshi Shimizu, Yusuke Kuwahara, Maki Tanabe, Mioko Kobayashi, Takuto Ishida, Kazuhiro Sugiyama, Takuya Washino, Naoya Sakamoto, Yuichi Hamabe

A sporadic COVID-19 pneumonia treated with extracorporeal membrane oxygenation in Tokyo, Japan: A case report

Journal of Infection and Chemotherapy, 2020

Abstract:

Introduction

An ongoing outbreak of a novel coronavirus disease (coronavirus disease 2019, COVID-19) has become a global threat. While clinical reports from China to date demonstrate that the majority of cases remain relatively mild and recover with supportive care, it is also crucial to be well prepared for severe cases warranting intensive care. Initiating appropriate infection control measures may not always be achievable in primary care or in acute-care settings.

Case

A 45-year-old man was admitted to the intensive care unit due to severe pneumonia, later confirmed as COVID-19. His initial evaluation in the resuscitation room and treatments in the intensive care unit was performed under droplet and contact precaution with additional airborne protection using the N95 respirator mask. He was successfully treated in the intensive care unit with mechanical ventilation and extracorporeal membrane oxygenation for respiratory support; and antiretroviral treatment with lopinavir/ritonavir. His total intensive care unit stay was 15 days and was discharged on hospital day 24.

Conclusions

Strict infection control precautions are not always an easy task, especially under urgent care in an intensive care unit. However, severe cases of COVID-19 pneumonia, or another novel infectious disease, could present at any moment and would be a continuing challenge to pursue appropriate measures. We need to be well prepared to secure healthcare workers from exposure to infectious diseases and nosocomial spread, as well as to provide necessary intensive care.

https://doi.org/10.1016/j.jiac.2020.03.018
Cardiovascular disease potentially contributes to the progression and poor prognosis of COVID-19

Nutrition, Metabolism and Cardiovascular Diseases, 2020

Abstract:

Background

A novel coronavirus severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) caused pneumonia, Coronavirus Disease 2019 (COVID-19), outbroke in Wuhan, China in December 2019, and spread all over the world. Patients with COVID-19 showed huge differences in the hospital stays, progression and prognosis. As reported, the comorbidities may play an important role in COVID-19. Here, we aim to address the role of cardiovascular disease (CVD) in the progression and prognosis of COVID-19.

Methods

83 confirmed COVID-19 patients were divided into the CVD (n=42) and non-CVD (n=41) group according to their medical history. Medical records information including demographic data, medical history, clinical characteristics, laboratory examinations, chest computed tomography (CT) as well as treatment measures were collected, analyzed and compared between two groups.

Results

COVID-19 patients with CVD showed: (1) more severe pathological changes in the lung, (2) elevated injury-related enzymes including α-hydroxybutyrate dehydrogenase (HDBH), lactate dehydrogenase (LDH), γ-glutamyltransferase (GGT), creatine kinase (CK) and alanine aminotransferase (ALT), (3) significantly increased uncontrolled inflammation related markers, such as c-reactive protein (CRP), interleukin (IL)-6, serum ferritin, erythrocyte sedimentation rate (ESR) and serum amyloid A (SAA), (4) serious hypercoagulable status reflected by increased D-dimer and serum fibrinogen (FIB), and (5) higher mortality, compared to COVID-19 patients without CVD.

Conclusions

Our data indicated that CVD is a strong risk factor for a rapid progression and bad prognosis of COVID-19. More intensive medical care should be applied to patients with CVD to prevent rapid deterioration of the disease.

https://doi.org/10.1016/j.numecd.2020.04.013
Clinical Management for COVID-19 in Hematopoietic Cell Transplantation and Cellular Therapy Patients in the United States

Abstract:

ABSTRACT

The coronavirus-19 (COVID-19) pandemic poses a significant risk to patients undergoing hematopoietic stem cell transplantation (HCT) or cellular therapy. The American Society for Transplantation and Cellular Therapy Pharmacy Special Interest Group Steering Committee aims to provide pharmacy practice management recommendations for how to transition clinical HCT or cellular therapy pharmacy services using telemedicine capabilities in the inpatient and outpatient settings to maintain an equivalent level of clinical practice while minimizing viral spread in a high-risk, immunocompromised population. In addition, the Steering Committee offers clinical management recommendations for COVID-19 in HCT and cellular therapy recipients based on the rapidly developing literature. As the therapeutic and supportive care interventions for COVID-19 expand, collaboration with clinical pharmacy providers is critical to ensure safe administration in HCT recipients. Attention to drug-drug interactions (DDIs) and toxicity, particularly QTc prolongation, warrants close cardiac monitoring and potential cessation of concomitant QTc-prolonging agents. Expanded indications for hydroxychloroquine and tocilizumab have already caused stress on the usual supply chain. Detailed prescribing algorithms, decision pathways, and specific patient population stock may be necessary. The COVID-19 pandemic has challenged all members of the health care team, and we must continue to remain vigilant in providing pharmacy clinical services to one of the most high-risk patient populations while also remaining committed to providing compassionate and safe care for patients undergoing HCT and cellular therapies.

https://doi.org/10.1016/j.bbmt.2020.04.005

Cuiyan Wang, Riyu Pan, Xiaoyang Wan, Yilin Tan, Linkang Xu, Roger S. McIntyre, Faith N. Choo, Bach Tran, Roger Ho, Vijay K. Sharma, Cyrus Ho

A longitudinal study on the mental health of general population during the COVID-19 epidemic in China

Abstract:

In addition to being a public physical health emergency, Coronavirus disease 2019 (COVID-19) affected global mental health, as evidenced by panic-buying worldwide as cases soared. Little is known about changes in levels of psychological impact, stress, anxiety and depression during this pandemic. This longitudinal study surveyed the general population twice - during the initial outbreak, and the epidemic's peak four weeks later, surveying demographics, symptoms, knowledge, concerns, and precautionary measures against COVID-19. There were 1738 respondents from 190 Chinese cities (1210 first-survey respondents, 861 s-survey respondents; 333 respondents participated in both). Psychological impact and mental health status were assessed by the Impact of Event Scale-Revised (IES-R) and the Depression, Anxiety and Stress Scale (DASS-21), respectively. IES-R measures PTSD symptoms in survivorship after an event. DASS-21 is based on tripartite model of psychopathology that comprise a general distress construct with distinct
This study found that there was a statistically significant longitudinal reduction in mean IES-R scores (from 32.98 to 30.76, \( p < 0.01 \)) after 4 weeks. Nevertheless, the mean IES-R score of the first- and second-survey respondents were above the cut-off scores (>24) for PTSD symptoms, suggesting that the reduction in scores was not clinically significant. During the initial evaluation, moderate-to-severe stress, anxiety and depression were noted in 8.1%, 28.8% and 16.5%, respectively and there were no significant longitudinal changes in stress, anxiety and depression levels (\( p > 0.05 \)). Protective factors included high level of confidence in doctors, perceived survival likelihood and low risk of contracting COVID-19, satisfaction with health information, personal precautionary measures. As countries around the world brace for an escalation in cases, Governments should focus on effective methods of disseminating unbiased COVID-19 knowledge, teaching correct containment methods, ensuring availability of essential services/commodities, and providing sufficient financial support.

https://doi.org/10.1016/j.bbi.2020.04.028

Hasraddin Guliyev

**Determining the spatial effects of COVID-19 using the spatial panel data model**

Spatial Statistics, 2020

100443

**Abstract:**

This study investigates the propagation power and effects of the coronavirus disease 2019 (COVID-19) in light of published data. We examine the factors affecting COVID-19 together with the spatial effects, and use spatial panel data models to determine the relationship among the variables including their spatial effects. Using spatial panel models, we analyse the relationship between confirmed cases of COVID-19, deaths thereof, and recovered cases due to treatment. We accordingly determine and include the spatial effects in this examination after establishing the appropriate model for COVID-19. The most efficient and consistent model is interpreted with direct and indirect spatial effects.

https://doi.org/10.1016/j.spasta.2020.100443

Qing Deng, Bo Hu, Yao Zhang, Hao Wang, Xiaoyang Zhou, Wei Hu, Yuting Cheng, Jie Yan, Haiqin Ping, Qing Zhou

**Suspected myocardial injury in patients with COVID-19: Evidence from front-line clinical observation in Wuhan, China**

International Journal of Cardiology, 2020

**Abstract:**

**Background**

A novel coronavirus disease (COVID-19) in Wuhan has caused an outbreak and become a major public health issue in China and great concern from international community. Myocarditis and myocardial injury were suspected and may even be considered as one of the leading causes for death
of COVID-19 patients. Therefore, we focused on the condition of the heart, and sought to provide firsthand evidence for whether myocarditis and myocardial injury were caused by COVID-19.

Methods

We enrolled patients with confirmed diagnosis of COVID-19 retrospectively and collected heart-related clinical data, mainly including cardiac imaging findings, laboratory results and clinical outcomes. Serial tests of cardiac markers were traced for the analysis of potential myocardial injury/myocarditis.

Results

112 COVID-19 patients were enrolled in our study. There was evidence of myocardial injury in COVID-19 patients and 14 (12.5%) patients had presented abnormalities similar to myocarditis. Most of patients had normal levels of troponin at admission, that in 42 (37.5%) patients increased during hospitalization, especially in those that died. Troponin levels were significantly increased in the week preceding the death. 15 (13.4%) patients have presented signs of pulmonary hypertension. Typical signs of myocarditis were absent on echocardiography and electrocardiogram.

Conclusions

The clinical evidence in our study suggested that myocardial injury is more likely related to systemic consequences rather than direct damage by the 2019 novel coronavirus. The elevation in cardiac markers was probably due to secondary and systemic consequences and can be considered as the warning sign for recent adverse clinical outcomes of the patients.

https://doi.org/10.1016/j.ijcard.2020.03.087

Bingwen Liu, Min Li, Zhiguang Zhou, Xuan Guan, Yufei Xiang

Can we use interleukin-6 (IL-6) blockade for coronavirus disease 2019 (COVID-19)-induced cytokine release syndrome (CRS)?

Journal of Autoimmunity, 2020

Abstract:

The emergent outbreak of coronavirus disease 2019 (COVID-19) has caused a global pandemic. Acute respiratory distress syndrome (ARDS) and multiorgan dysfunction are among the leading causes of death in critically ill patients with COVID-19. The elevated inflammatory cytokines suggest that a cytokine storm, also known as cytokine release syndrome (CRS), may play a major role in the pathology of COVID-19. However, the efficacy of corticosteroids, commonly utilized antiinflammatory agents, to treat COVID-19-induced CRS is controversial. There is an urgent need for novel therapies to treat COVID-19-induced CRS. Here, we discuss the pathogenesis of severe acute respiratory syndrome (SARS)-induced CRS, compare the CRS in COVID-19 with that in SARS and Middle East respiratory syndrome (MERS), and summarize the existing therapies for CRS. We propose to utilize interleukin-6 (IL-6) blockade to manage COVID-19-induced CRS and discuss several factors that should be taken into consideration for its clinical application.

https://doi.org/10.1016/j.jaut.2020.102452
Joseph Sarkis, Maurie J. Cohen, Paul Dewick, Patrick Schröder

A Brave New World: Lessons from the COVID-19 Pandemic for Transitioning to Sustainable Supply and Production

Resources, Conservation and Recycling, 2020

https://doi.org/10.1016/j.resconrec.2020.104894

Mohsen Ahmadi, Abbas Sharifi, Shadi Dorosti, Saeid Jafarzadeh Ghoushchi, Negar Ghanbari

Investigation of effective climatology parameters on COVID-19 outbreak in Iran

Science of The Total Environment, 2020

Abstract:

SARS CoV-2 (COVID-19) Coronavirus cases are confirmed throughout the world and millions of people are being put into quarantine. A better understanding of the effective parameters in infection spreading can bring about a logical measurement toward COVID-19. The effect of climatic factors on spreading of COVID-19 can play an important role in the new Coronavirus outbreak. In this study, the main parameters, including the number of infected people with COVID-19, population density, intra-provincial movement, and infection days to end of the study period, average temperature, average precipitation, humidity, wind speed, and average solar radiation investigated to understand how can these parameters effects on COVID-19 spreading in Iran? The Partial correlation coefficient (PCC) and Sobol’-Jansen methods are used for analyzing the effect and correlation of variables with the COVID-19 spreading rate. The result of sensitivity analysis shows that the population density, intra-provincial movement have a direct relationship with the infection outbreak. Conversely, areas with low values of wind speed, humidity, and solar radiation exposure to a high rate of infection that support the virus's survival. The provinces such as Tehran, Mazandaran, Alborz, Gilan, and Qom are more susceptible to infection because of high population density, intra-provincial movements and high humidity rate in comparison with Southern provinces.

https://doi.org/10.1016/j.scitotenv.2020.138705

Giuseppe Curigliano, Maria Joao Cardoso, Philip Poortmans, Oreste Gentilini, Gabriella Pravettoni, Ketti Mazzocco, Nehmat Houssami, Olivia Pagani, Elzbieta Senkus, Fatima Cardoso

Recommendations for Triage, Prioritization and Treatment of Breast Cancer Patients During the COVID-19 Pandemic

The Breast, 2020

Abstract:

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) associated disease (COVID-19) outbreak seriously challenges globally all health care systems and professionals. Expert projections estimate that despite social distancing and lockdown being practiced, we have yet to feel the full impact of COVID-19. In this manuscript we provide guidance to prepare for the
impact of COVID-19 pandemic on breast cancer patients and advise on how to triage, prioritize and organize diagnostic procedures, surgical, radiation and medical treatments.

https://doi.org/10.1016/j.breast.2020.04.006

Kim Pollock, Michael Setzen, Peter F. Svider

**Embracing telemedicine into your otolaryngology practice amid the COVID-19 crisis: An invited commentary**

American Journal of Otolaryngology, 2020

**Abstract:**

The COVID-19 pandemic has quickly and radically altered how Otolaryngologists provide patient care in the outpatient setting. Continuity of care with established patients as well as establishment of a professional relationship with new patients is challenging during this Public Health Emergency (PHE). Many geographic areas are under “stay at home” or “shelter in place” directives from state and local governments to avoid COVID-19 exposure risks. Medicare has recently allowed “broad flexibilities to furnish services using remote communications technology to avoid exposure risks to health care providers, patients, and the community.” [1] The implementation of telemedicine, or virtual, services, will help the Otolaryngologists provide needed care to patients while mitigating the clinical and financial impact of the pandemic. The significant coding and billing issues related to implementing telemedicine services are discussed to promote acceptance of this technology by the practicing Otolaryngologist. Of particular importance, outpatient visit Current Procedural Terminology® codes (99201-99215) may be used for telehealth visits performed in real-time audio and video.

https://doi.org/10.1016/j.amjoto.2020.102490

Elizabeth M. Lancaster, Julie A. Sosa, Amanda Sammann, Logan Pierce, Wen Shen, Michael Conte, Elizabeth Wick

**Rapid Response of an Academic Surgical Department to the COVID-19 Pandemic: Implications for Patients, Surgeons, and the Community**

Journal of the American College of Surgeons, 2020

**Abstract:**

**Background**

As the COVID-19 pandemic continues to spread, swift actions and preparation are critical for ensuring the best outcomes for patients and providers. We aim to describe our hospital and Department of Surgery’s experience in preparing for the COVID-19 pandemic and caring for surgical patients during this unprecedented time.

**Study Design**

This is a descriptive study outlining the strategy of a single academic health system for addressing 4 critical issues facing surgical departments during the COVID-19 pandemic: (1) developing a cohesive leadership team and system for frequent communication throughout the department; (2)
ensuring adequate hospital capacity to care for an anticipated influx of COVID-19 patients; (3) safeguarding supplies of blood products and personal protective equipment to protect patients and providers; and (4) preparing for an unstable workforce due to illness and competing personal priorities such as childcare.

Results

Through collaborative efforts within the Department of Surgery and Hospital, we provided concise and regular communication, reduced operating room volume by 80%, secured a 4-week supply of personal protective equipment, and created reduced staffing protocols with back-up staffing plans.

Conclusions

By developing an enabling infrastructure, a department can nimbly respond to crises like COVID-19 by promoting trust among colleagues and emphasizing an unwavering commitment to excellent patient care. Sharing principles and practical applications of these changes is important to optimize responses across the country and world.

https://doi.org/10.1016/j.jamcollsurg.2020.04.007

Stephen Moore, Elaine Gardiner

**Point of Care and Intensive Care Lung Ultrasound: A Reference Guide for Practitioners During COVID-19**

Radiography, 2020

**Abstract:**

**Objectives**

Current events with the recent COVID-19 outbreak are necessitating steep learning curves for the NHS workforce. Ultrasound, although not used in the diagnosis of COVID-19 may be utilised by practitioners at the point of care (POC) or on the intensive care units (ITUs) where rapid assessment of the lung condition may be required. The aim of this article was to review current literature surrounding the use of lung ultrasound in relation to COVID-19 and provide Sonographers with a quick and digestible reference guide for lung pathologies.

**Key Findings**

Ultrasound is being used in Italy and China to help review lung condition during the COVID-19 outbreak however not strictly as a diagnostic tool as Computed Tomography (CT) of the chest and chest radiographs are currently gold standard. Ultrasound is highly sensitive in the detection of multiple lung pathologies which can be demonstrated in conjunction with COVID-19 however to date there are no specific, nor pathognomonic findings which relate to COVID-19 on ultrasound.

**Conclusion**

Lung ultrasound is highly sensitive and can quickly and accurately review lung condition creating potential to assess for changes or resolution over time, especially in the ITU and POC setting. However it should not be used as a diagnostic tool for COVID-19 due to low specificity in relation to the virus.

**Implications for practice**
The adoption of lung ultrasound to monitor lung condition during the COVID-19 outbreak may reduce the need for serial exposure to ionising radiation on the wards and in turn reduce the number of radiographers required to attend infected wards and bays, protecting both patients and the workforce.

https://doi.org/10.1016/j.radi.2020.04.005

Cynthia Magro, J. Justin Mulvey, David Berlin, Gerard Nuovo, Steven Salvatore, Joanna Harp, Amelia Baxter-Stoltzfus, Jeffrey Laurence

**Complement associated microvascular injury and thrombosis in the pathogenesis of severe COVID-19 infection: A report of five cases**

Translational Research, 2020

**Abstract:**

Acute respiratory failure and a systemic coagulopathy are critical aspects of the morbidity and mortality characterizing infection with severe acute respiratory distress syndrome-associated coronavirus-2 (SARS-CoV-2), the etiologic agent of Coronavirus disease 2019 (COVID-19). We examined skin and lung tissues from 5 patients with severe COVID-19 characterized by respiratory failure (n=5) and purpuric skin rash (n=3). The pattern of COVID-19 pneumonitis was predominantly a pauci-inflammatory septal capillary injury with significant septal capillary mural and luminal fibrin deposition and permeation of the inter-alveolar septa by neutrophils. No viral cytopathic changes were observed and the diffuse alveolar damage (DAD) with hyaline membranes, inflammation, and type II pneumocyte hyperplasia, hallmarks of classic ARDS, were not prominent. These pulmonary findings were accompanied by significant deposits of terminal complement components C5b-9 (membrane attack complex), C4d, and mannose binding lectin (MBL)-associated serine protease (MASP)2, in the microvasculature, consistent with sustained, systemic activation of the alternative and lectin-based complement pathways. The purpuric skin lesions similarly showed a pauci-inflammatory thrombogenic vasculopathy, with deposition of C5b-9 and C4d in both grossly involved and normally-appearing skin. In addition, there was co-localization of COVID-19 spike glycoproteins with C4d and C5b-9 in the inter-alveolar septa and the cutaneous microvasculature of two cases examined. In conclusion, at least a subset of sustained, severe COVID-19 may define a type of catastrophic microvascular injury syndrome mediated by activation of complement pathways and an associated procoagulant state. It provides a foundation for further exploration of the pathophysiologic importance of complement in COVID-19, and could suggest targets for specific intervention.

https://doi.org/10.1016/j.trsl.2020.04.007

Anjana Rao Kavoor, Kripa Chakravarthy, Thomas John

**Remote consultations in the era of COVID-19 pandemic: Preliminary experience in a regional Australian public acute mental health care setting**

Asian Journal of Psychiatry, Volume 51, 2020

**Abstract:**
In the wake of the recent pandemic of Corona Virus Disease 2019 (COVID-19), with confirmed cases having crossed 750,000, health systems across the world are getting overwhelmed; making it strenuous to maintain essential health services. Several changes were implemented in our acute mental health care service using a collaborative approach to maintain a balance between preventive measures to ‘flatten the curve’ and to provide care to those who were in need. Mode of service delivery was changed predominantly to tele-medicine, amongst others. It was found to be a workable model, albeit further follow up will be required to better understand its viability and feasibility to withstand the COVID-19 cataclysm.

https://doi.org/10.1016/j.ajp.2020.102074

Eric Lee, Will Loh, Ivy Ang, Yanni Tan

Plastic Bags as Personal Protective Equipment During the COVID-19 Pandemic: Between the Devil and the Deep Blue Sea

The Journal of Emergency Medicine, 2020

https://doi.org/10.1016/j.jemermed.2020.04.016


COVID-19: Initial experience of an international group of hand surgeons

Hand Surgery and Rehabilitation, 2020

Abstract:

L’émergence de la pandémie à Covid-19 a bouleversé les pratiques médicales dans le monde. À première vue, cette pandémie ne concerne pas les chirurgiens de la main. Pourtant, ils ont un rôle à jouer. Le but de cette étude était de décrire les différentes pratiques mises en œuvre contre la pandémie à Covid-19 à partir du retour d’expérience de 47 chirurgiens de la main exerçant sur tous les continents. Le matériel comprenait 47 chirurgiens de la main exerçant dans 34 pays qui ont répondu à un questionnaire en ligne portant sur les protocoles Covid-19 mis en place. Les résultats ont montré que les pratiques étaient hétérogènes, tant pour les patients, les visiteurs et le personnel soignant au bloc opératoire, en salle de réunion, aux services d’hébergement des patients, au service d’accueil des urgences et en consultations externes. Il nous semble essentiel de définir un consensus international en chirurgie de la main pour lutter contre les pandémies virales actuelles et futures.

https://doi.org/10.1016/j.hansur.2020.04.001

Yongli Zheng, Hong Xu, Ming Yang, Yilan Zeng, Hong Chen, Ru Liu, Qingfeng Li, Na Zhang, Dan Wang
Epidemiological characteristics and clinical features of 32 critical and 67 noncritical cases of COVID-19 in Chengdu

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background

In December 2019, Wuhan, China, experienced an outbreak of coronavirus (COVID-19). The number of cases has increased rapidly, but information on the clinical characteristics remains limited.

Objectives

This paper describes the epidemiological and clinical characteristics of COVID-19. Early detection and identification of critically ill patients is necessary to facilitate scientific classification and treatment.

Study design

This study included a retrospective, single-center case series of 99 consecutively hospitalized patients with confirmed COVID-19 at Chengdu Public Health Clinical Medical Center in Chengdu, China, from January 16 to February 20, 2020. The final date of follow-up was February 23, 2020. We collected and analyzed epidemiological, demographic, clinical, laboratory, radiological, and treatment data. We compared outcomes of critically ill patients and noncritically ill patients.

Results

Of the 99 hospitalized patients with COVID-19, the median age was 49 years (minimum, 3 months; maximum, 87 years) and 51 (52 %) were men; 42 (42 %) had traveled to or lived in Wuhan and 48 (49 %) had come into close contact with patients with new coronavirus pneumonia; 41 (41 %) patients had underlying disease. Common symptoms included fever (85 [86 %]), dry cough (84 [85 %]), and fatigue (72 [73 %]). We analyzed the clinical characteristics of patients. We expressed the measurement data as mean ± standard deviation. We collected data for age (49.39 ± 18.45 years), number of hospital days (12.32 ± 6.70 days), and laboratory indicators. We compared critically ill and noncritically ill patients: p-values for age, C-reactive protein, high-sensitivity troponin T, prothrombin time, fibrin degradation products, D-Dimer, and CD4+ count were p < 0.001; and p-values for hospital days, white blood cell, neutrophil, lymphocyte, creatine kinase isoenzyme, myoglobin, N-terminal brain natriuretic peptide, and CD8+ count were p < 0.05.

Conclusions

We collected data from a single-center case series of 32 hospitalized patients who were critically ill with confirmed COVID-19 in Chengdu, China, and compared data with 67 noncritically ill patients. Elderly patients had chronic underlying diseases, notably cardiovascular disease. Higher C-reactive protein levels, higher levels of myocardial damage, and higher brain natriuretic peptide levels; lower white blood cells, neutrophils, and lymphocytes; and lower CD4 and CD8 counts could be used for early detection and identification of critically ill patients, and dynamic Data observation was more important than at a single moment.

https://doi.org/10.1016/j.jcv.2020.104366
Yuwei Liu, Xuebei Du, Jing Chen, Yafei Jin, Li Peng, Harry H.X. Wang, Mingqi Luo, Ling Chen, Yan Zhao

Neutrophil-to-lymphocyte ratio as an independent risk factor for mortality in hospitalized patients with COVID-19

Journal of Infection, 2020

Abstract:

Background

Several studies have described the clinical characteristics of patients with novel coronavirus (SARS-CoV-2)-infected pneumonia (COVID-19), indicating severe patients tended to have higher neutrophil to lymphocyte ratio (NLR). Whether baseline NLR could be an independent predictor of in-hospital death in Chinese COVID-19 patients remains to be investigated.

Methods

A cohort of patients with COVID-19 admitted to the Zhongnan Hospital of Wuhan University from January 1 to February 29 was retrospectively analyzed. The baseline data of laboratory examinations, including NLR were collected. Univariate and multivariate logistic regression models were developed to assess the independent relationship between the baseline NLR and in-hospital all-cause death. A sensitivity analysis was performed by converting NLR from a continuous variable to a categorical variable according to tertile. Interaction and stratified analyses were conducted as well.

Results

245 COVID-19 patients were included in the final analyses, and the in-hospital mortality was 13.47%. Multivariate analysis demonstrated that there was 8% higher risk of in-hospital mortality for each unit increase in NLR (Odds ratio [OR] = 1.08; 95% confidence interval [95% CI], 1.01 to 1.14; P = 0.0147). Compared with patients in the lowest tertile, the NLR of patients in the highest tertile had a 15.04-fold higher risk of death (OR = 16.04; 95% CI, 1.14 to 224.95; P = 0.0395) after adjustment for potential confounders. Notably, the fully adjusted OR for mortality was 1.10 in males for each unit increase of NLR (OR = 1.10; 95% CI, 1.02 to 1.19; P = 0.016).

Conclusions

NLR is an independent risk factor of the in-hospital mortality for COVID-19 patients especially for male. Assessment of NLR may help identify high risk individuals with COVID-19.


Ian Huang, Michael Anthonius Lim, Raymond Pranata

Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia – A systematic review, meta-analysis, and meta-regression

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, 2020

Abstract:
Background and aims

Diabetes Mellitus (DM) is chronic conditions with devastating multi-systemic complication and may be associated with severe form of Coronavirus Disease 2019 (COVID-19). We conducted a systematic review and meta-analysis in order to investigate the association between DM and poor outcome in patients with COVID-19 pneumonia.

Methods

Systematic literature search was performed from several electronic databases on subjects that assess DM and outcome in COVID-19 pneumonia. The outcome of interest was composite poor outcome, including mortality, severe COVID-19, acute respiratory distress syndrome (ARDS), need for intensive care unit (ICU) care, and disease progression.

Results

There were a total of 6452 patients from 30 studies. Meta-analysis showed that DM was associated with composite poor outcome (RR 2.38 [1.88, 3.03], p < 0.001; I2: 62%) and its subgroup which comprised of mortality (RR 2.12 [1.44, 3.11], p < 0.001; I2: 72%), severe COVID-19 (RR 2.45 [1.79, 3.35], p < 0.001; I2: 45%), ARDS (RR 4.64 [1.86, 11.58], p = 0.001; I2: 9%), and disease progression (RR 3.31 [1.08, 10.14], p = 0.04; I2: 0%). Meta-regression showed that the association with composite poor outcome was influenced by age (p = 0.003) and hypertension (p < 0.001). Subgroup analysis showed that the association was weaker in studies with median age ≥55 years-old (RR 1.92) compared to <55 years-old (RR 3.48), and in prevalence of hypertension ≥25% (RR 1.93) compared to <25% (RR 3.06). Subgroup analysis on median age <55 years-old and prevalence of hypertension <25% showed strong association (RR 3.33)

Conclusion

DM was associated with mortality, severe COVID-19, ARDS, and disease progression in patients with COVID-19.

https://doi.org/10.1016/j.dsx.2020.04.018

Ruth Ellen Jones, Kareem R. Abdelfattah

Virtual Interviews in the Era of COVID-19: A Primer for Applicants

Journal of Surgical Education, 2020

Abstract:

Problem

The COVID-19 pandemic is an evolving crisis with widespread impact upon our medical system, including senior trainee travel for fellowship interviews. Numerous institutions have conscientiously deferred in-person interviews or virtual formats. Given the competitive nature of fellowship interviews, candidates may express concern that they are at a disadvantage in engaging in online meetings versus live, on-site interviews, and similarly may feel ill prepared to perform optimally during online interviews.

Approach
We draw upon our experience with online interview platforms in this guide for fellowship candidates who are rapidly adapting to new technology and styles associated with videoconference interviews so that they can best promote themselves for competitive positions.

https://doi.org/10.1016/j.jsurg.2020.03.020

Richard J. Simpson, Emmanuel Katsanis

The immunological case for staying active during the COVID-19 pandemic

Brain, Behavior, and Immunity, 2020

https://doi.org/10.1016/j.bbi.2020.04.041

Loris Roncon, Marco Zuin, Gianluca Rigatelli, Giovanni Zuliani

Diabetic patients with COVID-19 infection are at higher risk of ICU admission and poor short-term outcome

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background


Objectives

To assess the risk of ICU admission and morality risk in diabetic COVID-19 patients.

Study desing

A database search was conducted to identify studies comparing diabetic COVID-19 patients hospitalized in intensive care unit (ICU) and those reporting the overall mortality of these patients published up to March 25, 2020 within MEDLINE, Scopus and Web of Science. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed in abstracting data and assessing validity. Quality assessment was performed using the Newcastle-Ottawa quality assessment scale. The main outcome was the risk of ICU admission in diabetic patients with COVID-19 infection while the second was the mortality risk in overall diabetic COVID-19 patients. Data were pooled using the Mantel-Haenszel random effects models with odds ratio (OR) as the effect measure with the related 95 % confidence interval (CI). Statistical heterogeneity between groups was measured using the Higgins I2 statistic.

Results

Among 1382 patients (mean age 51.5 years, 798 males), DM resulted to be the second more frequent comorbidities. Diabetic patients resulted to have a significant increased risk of ICU admission (OR: 2.79, 95 % CI 1.85–4.22, p < 0.0001, I2 = 46 %). In 471 patients (mean age 56.6 years, 294 males) analysed for the secondary outcome diabetic subjects resulted to be at higher mortality risk (OR 3.21, 95 % CI 1.82–5.64, p < 0.0001, I2 = 16 %).
Conclusions

Diabetic patients with COVID-19 patients are at higher risk of ICU admission and show an higher mortality risk.

https://doi.org/10.1016/j.jcv.2020.104354

Fusi-Schmidhauser Tanja, Preston Nancy, Nikola Keller, Gamondi Claudia

**Conservative management of Covid-19 patients – emergency palliative care in action**

Journal of Pain and Symptom Management, 2020

https://doi.org/10.1016/j.jpainsymman.2020.03.030

Qingxian Cai, Deliang Huang, Hong Yu, Zhibin Zhu, Zhang Xia, Yinan Su, Zhiwei Li, Guangde Zhou, Jizhou Gou, Jiuxin Qu, Yan Sun, Yinxia Liu, Qing He, Jun Chen, Lei Liu, Lin Xu

**Characteristics of Liver Tests in COVID-19 Patients**

Journal of Hepatology, 2020

**Abstract:**

**Background & Aims**

Recent data on the coronavirus disease 2019 (COVID-19) outbreak caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has begun to shine light on the impact of the disease on the liver. But no studies to date have systematically described liver test abnormalities in patients with COVID-19. We evaluated the clinical characteristics of COVID-19 in patients with abnormal liver tests.

**Methods**

Clinical records and laboratory results were obtained from 417 laboratory-confirmed COVID-19 patients who were admitted to the only referral hospital in Shenzhen, China from January 11 to February 21, 2020 and followed up to March 7, 2020. Information of clinical features of patients with abnormal liver tests were collected for analysis.

**Results**

Of 417 patients with COVID-19, 318 (76.3%) had abnormal liver test results and 90 (21.5%) had liver injury during hospitalization. The presence of abnormal liver tests became more pronounced during hospitalization within 2 weeks, with 49 (23.4%), 31 (14.8%), 24 (11.5%) and 51 (24.4%) patients raising liver enzyme levels to more than 3 times of upper limit units in alanine aminotransferase, aspartate aminotransferase, total bilirubin and gamma-glutamyl transferase, respectively. Patients with abnormal liver test of hepatocellular type or mixed type at admission had higher odds of progressing to severe disease (odds ratios (OR)=2.73, 95% confidence interval (CI) 1.19-6.3, and 4.44, 95% CI 1.93-10.23, respectively). The use of lopinavir/ritonavir was also found to lead to increased odds of liver injury (OR from 4.44 to 5.03, both P<0.01).

**Conclusion**
Patients with abnormal liver tests had higher risks of progressing to severe disease. The detrimental effects on liver injury mainly related to certain medications used during hospitalization, should be monitored and evaluated frequently.

https://doi.org/10.1016/j.jhep.2020.04.006

Shengmei Niu, Sijia Tian, Jing Lou, Xuqin Kang, Luxi Zhang, Huixin Lian, Jinjun Zhang

Clinical Characteristics of Older Patients Infected with COVID-19: A Descriptive Study

Archives of Gerontology and Geriatrics, 2020

Abstract:

Objectives

Since the outbreak of 2019 novel coronavirus (COVID-19), which has spread in the world rapidly. Population have a susceptibility to COVID-19, older people were more susceptible to have a variety diseases than younger, including COVID-19 infection with no doubt. This study focused on older patients with COVID-19 infection and analyzed the epidemiological and clinical characteristics of them.

Methods

We collected information on confirmed older patient transferred by Beijing Emergency Medical Service (EMS) to the designated hospitals from Jan 20 to Feb 29, 2020. The information including demographic, epidemiological, clinical, classification of severity and outcomes. All cases were categorized into three groups and compared the difference between aged 50-64 years, 65-79 years and older than 80 years.

Results

56.7% of elderly confirmed patients were male, fever (78.3%), cough (56.7%), dyspnea (30.0%), and fatigue (23.3%) were common symptoms of COVID-19 infection. Classification of severity has statistically significant differences between the three groups, compared with middle-aged patients and aged 65-79 years group, older than 80 years group had significant statistical differences in contacted to symptomatic case in 14 days. As of Feb 29, 38.3% patients had discharged and 53.3% patients remained in hospital in our study, the fatality of COVID-19 infection in elderly was 8.3%.

Conclusions

The COVID-19 infection is generally susceptible with a relatively high fatality rate in older patients, we should pay more attention to the elderly patients with COVID-19 infection.

https://doi.org/10.1016/j.archger.2020.104058

Neven Ljubicic, Sanja Stojavljevic-Shapeski, Lucija Virovic-Jukic, Marko Nikolic

Plexiglass barrier box to improve ERCP safety during the COVID-19 pandemic

Gastrointestinal Endoscopy, 2020

**Planning and coordination of the radiological response to the coronavirus disease 2019 (COVID-19) pandemic: the Singapore experience**

Clinical Radiology, 2020

**Abstract:**

Coronavirus disease 2019 (COVID-19) has spread fast and extensively around the world, with significant mortality and morbidity. As this is a respiratory infection, chest radiography and computed tomography (CT) are important imaging techniques in the work-up of this disease. Given its highly infectious nature, cross-infection within the healthcare setting and radiology departments needs to be addressed actively and prevented. We describe the response of radiology departments in Singapore to this pandemic, in terms of diagnosis, re-configuration of the department, re-organisation and segregation of staff, infection control, managerial, and leadership issues.

Nicola Cosentino, Emilio Assanelli, Luca Merlino, Mario Mazza, Antonio L. Bartorelli, Giancarlo Marenzi

**An In-hospital Pathway for Acute Coronary Syndrome Patients During the COVID-19 Outbreak: Initial Experience under Real-world Suboptimal Conditions**

Canadian Journal of Cardiology, 2020

**Abstract:**

Unstructured Abstract

In Lombardy (Italy), due to the COVID-19 outbreak, there is an urgent need to manage cardiovascular emergencies, including acute coronary syndrome (ACS), with appropriate standards of care and dedicated preventive measures and pathways against the risk of SARS-CoV-2 infection. For this reason, the Government of Lombardy decided to centralize the treatment of ACS patients in a limited number of centers, including our University Cardiology Institute that in the last four weeks became a cardiovascular emergency referral center in a regional hub and spoke system. Thus, we rapidly developed a customized pathway in order to allocate patients to the appropriate hospital ward, and treat them according to the ACS severity and the risk of suspected SARS-CoV-2 infection. We present here a protocol dedicated to ACS patients adopted in our center since March 13th 2020 and our initial experience in the management of ACS patients during the first four weeks of its use. Certainly, the protocol has room for further improvement as everyone's experience grows, but we hope that it could be a starting point, adaptable to different realities and local resources.
COVID-19 and rhinology: A look at the future

American Journal of Otolaryngology, 2020

Abstract:

The novel Coronavirus (COVID-19) has created a deadly pandemic that is now significantly impacting the United States. Otolaryngologists are considered high risk for contracting disease, as the virus resides in the nasal cavity, nasopharynx, and oropharynx. While valuable work has been publicized regarding several topics in Rhinology, we discuss other aspects of our specialty in further detail. There are several issues regarding Rhinologic practice that need to be clarified both for the current epidemic as well as for future expected “waves.” In addition, as the pandemic dies down, guidelines are needed to optimize safe practices as we start seeing more patients again. These include protocols pertinent to safety, in-office Rhinologic procedures, the substitution of imaging for endoscopy, and understanding the appropriate role of telemedicine. We discuss these aspects of Rhinology as well as practical concerns relating to telemedicine and billing, as these issues take on increasing importance for Rhinologists both in the present and the future.

https://doi.org/10.1016/j.amjoto.2020.102491

COVID-19: The forgotten priorities of the pandemic

Maturitas, Volume 136, 2020, Pages 38-41

Abstract:

The zoonotic virus now named SARS-CoV-2 first infected humans in China, and COVID-19 has rapidly become pandemic. To mitigate its impact on societies, health systems and economies, countries have adopted non-pharmacological preventive practices such as ‘spatial’ or ‘social’ distancing, the use of protective masks, and handwashing; these have been widely implemented. However, measures aimed at protecting physical health and healthcare systems have side-effects that might have a big impact on individuals’ wellbeing. As the pandemic reaches low- and middle-income countries, weaker health systems, limited resources and the lower socioeconomic status of their populations make halting the pandemic more challenging. In this article, we explore the impact of COVID-19 and its prevention measures on the wellbeing of vulnerable populations. Special attention must be given to homeless, indigenous, migrant and imprisoned populations, as well as people living with disabilities and the elderly. More than just resolute governmental action will be required to overcome the pandemic. Links between science and political actions have to be strengthened. Fighting COVID-19 is a collective endeavour and community action, on a global scale, is of paramount importance.

https://doi.org/10.1016/j.maturitas.2020.04.004

Back to the Basics: Diluted Bleach for COVID-19

Parth Patel, Sanjna Sanghvi, Kunal Malik, Amor Khachemoune
Marco Alifano, Pietro Alifano, Patricia Forgez, Antonio Iannelli

Renin-angiotensin system at the heart of COVID-19 pandemic

Biochimie, 2020

Abstract:

Significant aspects of COVID-19 pandemic remain obscure. Angiotensin converting enzyme 2 (ACE2), a component of the renin-angiotensin system, whose expression dominates on lung alveolar epithelial cells, is the human cell receptor of SARS-CoV-2, the causative agent of COVID-19. We strongly encourage the concept that thorough considerations of receptor-ligand interactions should be kept at the heart of scientific debate on infection. In this idea, the whole renin-angiotensin system has to be evaluated. We hypothesize that factors related to ethnicity, environment, behaviors, associated illness, and medications involving this complex system are probably responsible for situations regarded as anomalous from both an epidemiological and a clinical point of view, but, taken together, such factors may explain most of the aspects of current outbreak. We decided to use the analogy of a play and speculate about the possible impact in this tragedy of 1) air pollution via the interference of nitrogen dioxide on ACE2 expression; 2) the dual role of nicotine; 3) the hypothetical involvement of ACE2 polymorphisms, the relationships of which with ethnic factors and susceptibility to cardiovascular disease seems intriguing; 4) the impact on the severity of infection of hypertension and related medications acting on the renin/angiotensin system, and, finally, 5) the possible helpful role of chloroquine, thanks to its capacity of modifying ACE2 affinity to the viral spike protein by altering glycosylation. This hypothesis paper is an urgent call for the development of research programs that aim at questioning whether the putative protagonists of this tragedy are real-life actors in COVID-19.

https://doi.org/10.1016/j.biochi.2020.04.008

Karen Goldschmidt

The COVID-19 pandemic: Technology use to support the wellbeing of children

Journal of Pediatric Nursing, 2020

https://doi.org/10.1016/j.pedn.2020.04.013

Jiangtao Liu, Ji Zhou, Jinxie Yao, Xiuxia Zhang, Lanyu Li, Xiaocheng Xu, Xiaotao He, Bo Wang, Shihua Fu, Tingting Niu, Jun Yan, Yanjun Shi, Xiaowei Ren, Jingping Niu, Weihao Zhu, Sheng Li, Bin Luo, Kai Zhang

Impact of meteorological factors on the COVID-19 transmission: A multi-city study in China

Science of The Total Environment, Volume 726, 2020
Abstract:

The purpose of the present study is to explore the associations between novel coronavirus disease 2019 (COVID-19) case counts and meteorological factors in 30 provincial capital cities of China. We compiled a daily dataset including confirmed case counts, ambient temperature (AT), diurnal temperature range (DTR), absolute humidity (AH) and migration scale index (MSI) for each city during the period of January 20th to March 2nd, 2020. First, we explored the associations between COVID-19 confirmed case counts, meteorological factors, and MSI using non-linear regression. Then, we conducted a two-stage analysis for 17 cities with more than 50 confirmed cases. In the first stage, generalized linear models with negative binomial distribution were fitted to estimate city-specific effects of meteorological factors on confirmed case counts. In the second stage, the meta-analysis was conducted to estimate the pooled effects. Our results showed that among 13 cities that have less than 50 confirmed cases, 9 cities locate in the Northern China with average AT below 0 °C, 12 cities had average AH below 4 g/m³, and one city (Haikou) had the highest AH (14.05 g/m³). Those 17 cities with 50 and more cases accounted for 90.6% of all cases in our study. Each 1 °C increase in AT and DTR was related to the decline of daily confirmed case counts, and the corresponding pooled RRs were 0.80 (95% CI: 0.75, 0.85) and 0.90 (95% CI: 0.86, 0.95), respectively. For AH, the association with COVID-19 case counts were statistically significant in lag 07 and lag 014. In addition, we found the all these associations increased with accumulated time duration up to 14 days. In conclusions, meteorological factors play an independent role in the COVID-19 transmission after controlling population migration. Local weather condition with low temperature, mild diurnal temperature range and low humidity likely favor the transmission.

https://doi.org/10.1016/j.scitotenv.2020.138513

Jiang Zhifeng, Aiqiao Feng, Tao Li

Consistency analysis of COVID-19 nucleic acid tests and the changes of lung CT

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background

COVID-19, the latest outbreak of infectious disease, has caused huge medical challenges to China and the entire globe. No unified diagnostic standard has been formulated. The initial diagnosis remains based on the positive of nucleic acid tests. However, early nucleic acid tests were identified to be negative in some patients, whereas the patients exhibited characteristic CT changes of lung, and positive test results appeared after repeated nucleic acid tests, having caused the failure to diagnose these patients early. The study aimed to delve into the relationships between initial nucleic acid testing and early lung CT changes in patients with COVID-19.

Method

In accordance with the latest COVID-19 diagnostic criteria, 69 patients diagnosed with COVID-19 treated in the infected V ward of Xiaogan Central Hospital from 2020/1/25 to 2020/2/6 were retrospectively analyzed. The consistency between the first COVID-19 nucleic acid test positive and lung CT changes was studied. In addition, the sensitivity and specificity of CT and initial nucleic acid were studied.

Result
The Kappa coefficient of initial nucleic acid positive changes and lung CT changes was −1.52. With a positive nucleic acid test as the gold standard, the sensitivity of lung CT was 12.00 %, 95 % CI: 4.6–24.3; with the changes of CT as the gold standard, the sensitivity of nucleic acid positive was 30.16 %, 95 % CI: 19.2–43.0.

Conclusion

The consistency between the initial positive nucleic acid test and the CT changes in the lungs is poor; low sensitivity was achieved for initial nucleic acid detection and CT changes.

https://doi.org/10.1016/j.jcv.2020.104359


**Epidemic of COVID-19 in China and associated Psychological Problems**

Asian Journal of Psychiatry, Volume 51, 2020

**Abstract:**

The world is experiencing pandemic of the COVID-19 now, a RNA virus that spread out from Wuhan, China. Two countries, China first and later Italy, have gone to full lock down due to rapid spread of this virus. Till to date, no epidemiological data on mental health problems due to outbreak of the COVID-19 and mass isolation were not available. To meet this need, the present study was undertaken to assess the mental health status of Chinese people. An online survey was conducted on a sample of 1074 Chinese people, majority of whom from Hubei province. Lack of adequate opportunities to conduct face to face interview, anxiety, depression, mental well-being and alcohol consumption behavior were assessed via self-reported measures. Results showed higher rate of anxiety, depression, hazardous and harmful alcohol use, and lower mental wellbeing than usual ratio. Results also revealed that young people aged 21–40 years are in more vulnerable position in terms of their mental health conditions and alcohol use. To address mental health crisis during this epidemic, it is high time to implement multi-faceted approach (i.e. forming multidisciplinary mental health team, providing psychiatric treatments and other mental health services, utilizing online counseling platforms, rehabilitation program, ensuring certain care for vulnerable groups, etc.).

https://doi.org/10.1016/j.ajp.2020.102092

James Segars, Quinton Katler, Dana B. McQueen, Alexander Kotlyar, Tanya Glenn, Zac Knight, Eve C. Feinberg, Hugh S. Taylor, James P. Toner, Jennifer F. Kawwass


Fertility and Sterility, 2020

**Abstract:**

Structured Abstract

Objective
To summarize current understanding of the effects of novel and prior coronaviruses on human reproduction, specifically male and female gametes, and in pregnancy.

**Design**


**Methods**

Manuscripts were screened for reports including coronavirus, reproduction, including pathophysiology and pregnancy.

**Intervention(s)**

None.

**Main Outcome Measure(s)**

Reproductive outcomes; effects on gametes; pregnancy outcomes; neonatal complications.

**Results**

Seventy-nine reports formed the basis of the review. Coronavirus binding to cells involves the S1 domain of the spike protein to receptors present in reproductive tissues, including angiotensin converting enzyme-2 (ACE2), CD26, Ezrin, and cyclophilins. SARS-CoV-1 may cause severe orchitis leading to germ cell destruction in males. Reports indicate decreased sperm concentration and motility for 72-90 days following COVID-19 infection. Gonadotropin-dependent expression of ACE2 was found in human ovaries, but it is unclear whether SARS-CoV-2 adversely affects female gametogenesis. Evidence suggests that COVID-19 infection has a lower maternal case fatality rate than SARS or MERS, but anecdotal reports suggest that infected, asymptomatic women may develop respiratory symptoms postpartum. COVID-19 infections in pregnancy are associated with preterm delivery. Postpartum neonatal transmission from mother to child has been reported.

**Conclusion**

COVID-19 infection may adversely affect some pregnant women and their offspring. Additional studies are needed to assess effects of SARS-CoV-2 infection on male and female fertility.

https://doi.org/10.1016/j.fertnstert.2020.04.025

Wen Lu, Hang Wang, Yuxing Lin, Li Li

**Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study**

Psychiatry Research, Volume 288, 2020

**Abstract:**

The pandemic of 2019 coronavirus disease (COVID-19) has burdened an unprecedented psychological stress on people around the world, especially the medical workforce. The study focuses on assess the psychological status of them. The authors conducted a single-center, cross-sectional survey via online questionnaires. Occurrence of fear, anxiety and depression were measured by the numeric rating scale (NRS) on fear, Hamilton Anxiety Scale (HAMA), and Hamilton Depression Scale (HAMD), respectively. A total of 2299 eligible participants were
enrolled from the authors’ institution, including 2042 medical staff and 257 administrative staff. The severity of fear, anxiety and depression were significantly different between two groups. Furthermore, as compared to the non-clinical staff, front line medical staff with close contact with infected patients, including working in the departments of respiratory, emergency, infectious disease, and ICU, showed higher scores on fear scale, HAMA and HAMD, and they were 1.4 times more likely to feel fear, twice more likely to suffer anxiety and depression. The medical staff especially working in above-mentioned departments made them more susceptible to psychological disorders. Effective strategies toward to improving the mental health should be provided to these individuals.

https://doi.org/10.1016/j.psychres.2020.112936

Peter Angelos

Surgeons, Ethics, and COVID-19: Early Lessons Learned

Journal of the American College of Surgeons, 2020

https://doi.org/10.1016/j.jamcollsurg.2020.03.028

Deblina Roy, Sarvodaya Tripathy, Sujita Kumar Kar, Nivedita Sharma, Sudhir Kumar Verma, Vikas Kaushal

Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic

Asian Journal of Psychiatry, Volume 51, 2020

Abstract:

Novel Corona Virus Disease (COVID-19) originating from China has rapidly crossed borders, infecting people throughout the whole world. This phenomenon has led to a massive public reaction; the media has been reporting continuously across borders to keep all informed about the pandemic situation. All these things are creating a lot of concern for people leading to heightened levels of anxiety. Pandemics can lead to heightened levels of stress; Anxiety is a common response to any stressful situation. This study attempted to assess the knowledge, attitude, anxiety experience, and perceived mental healthcare need among adult Indian population during the COVID-19 pandemic. An online survey was conducted using a semi-structured questionnaire using a non-probability snowball sampling technique. A total of 662 responses were received. The responders had a moderate level of knowledge about the COVID-19 infection and adequate knowledge about its preventive aspects. The attitude towards COVID-19 showed peoples' willingness to follow government guidelines on quarantine and social distancing. The anxiety levels identified in the study were high. More than 80% of the people were preoccupied with the thoughts of COVID-19 and 72% reported the need to use gloves, and sanitizers. In this study, sleep difficulties, paranoia about acquiring COVID-19 infection and distress related social media were reported in 12.5%, 37.8%, and 36.4% participants respectively. The perceived mental healthcare need was seen in more than 80% of participants. There is a need to intensify the awareness and address the mental health issues of people during this COVID-19 pandemic.

https://doi.org/10.1016/j.ajp.2020.102083
Angelo Valerio Marzano, Giovanni Genovese, Gabriella Fabbrocini, Paolo Pigatto, Giuseppe Monfrecola, Bianca Maria Piraccini, Stefano Veraldi, Pietro Rubegni, Marco Cusini, Valentina Caputo, Franco Rongioletti, Emilio Berti, Piergiacomo Calzavara-Pinton

**Varicella-like exanthem as a specific COVID-19-associated skin manifestation: multicenter case series of 22 patients**

Journal of the American Academy of Dermatology, 2020

[https://doi.org/10.1016/j.jaad.2020.04.044](https://doi.org/10.1016/j.jaad.2020.04.044)

Roger Foo, Yibin Wang, Wolfram-Hubertus Zimmermann, Johannes Backs, Dao Wen Wang

**Cardiovascular molecular mechanisms of disease with COVID-19**

Journal of Molecular and Cellular Cardiology, 2020

[https://doi.org/10.1016/j.yjmcc.2020.04.010](https://doi.org/10.1016/j.yjmcc.2020.04.010)


**International expert consensus statement regarding radiotherapy treatment options for rectal cancer during the COVID 19 pandemic**

Radiotherapy and Oncology, 2020

[https://doi.org/10.1016/j.radonc.2020.03.039](https://doi.org/10.1016/j.radonc.2020.03.039)

Abraham Edgar Gracia-Ramos

**Is the ACE2 Overexpression a Risk Factor for COVID-19 Infection?**

Archives of Medical Research, 2020

**Abstract:**

In the recent coronavirus disease (COVID-19) outbreak, a higher proportion of patients with severe disease were found in older persons with comorbidities. This observation has been related to the use of drugs that can increase the cellular expression of angiotensin-converting enzyme 2 (ACE2) that has been recognized as target to which the virus bind to cells. Although this hypothesis is possible, it may also have other explanations which are discussed.

[https://doi.org/10.1016/j.arcmed.2020.03.011](https://doi.org/10.1016/j.arcmed.2020.03.011)

Irene A. Kretchy, Michelle Asiedu-Danso, James-Paul Kretchy
Medication management and adherence during the COVID-19 pandemic: Perspectives and experiences from low-and middle-income countries

Research in Social and Administrative Pharmacy, 2020

Abstract:

The current coronavirus disease 2019 (COVID-19) pandemic is placing a huge strain on health systems worldwide. Suggested solutions like social distancing and lockdowns in some areas to help contain the spread of the virus may affect special patient populations like those with chronic illnesses who are unable to access healthcare facilities for their routine care and medicines management. Retail pharmacy outlets are the likely facilities for easy access by these patients. The contribution of community pharmacists in these facilities to manage chronic conditions and promote medication adherence during this COVID-19 pandemic will be essential in easing the burden on already strained health systems. This paper highlights the pharmaceutical care practices of community pharmacists for patients with chronic diseases during this pandemic. This would provide support for the call by the WHO to maintain essential services during the pandemic, in order to prevent non-COVID disease burden on healthcare systems particularly in low-and middle-income countries.

https://doi.org/10.1016/j.sapharm.2020.04.007

Yiqun Gan, Yidi Chen, Cheng Wang, Carl Latkin, Brian J. Hall

The fight against COVID-19 and the restoration of trust in Chinese medical professionals

Asian Journal of Psychiatry, 2020

https://doi.org/10.1016/j.ajp.2020.102072

Bryan Hoffman

Tip of the spear: An interview with the Washington State Nursing Care Quality Assurance Commission at the onset of the COVID-19 pandemic

Teaching and Learning in Nursing, 2020

https://doi.org/10.1016/j.teln.2020.04.005

Roopa Bhat, Aws Hamid, Jeffrey R. Kunin, Sachin S. Saboo, Kiran Batra, Dhiraj Baruah, Ambarish P. Bhat

Chest Imaging in Patients Hospitalized With COVID-19 Infection - A Case Series

Current Problems in Diagnostic Radiology, 2020

Abstract:
COVID-19 (Corona Virus Disease-19) is a zoonotic illness first reported in the city of Wuhan, China in December 2019, and is now officially a global pandemic as declared by the World Health Organization. The infection is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 infected patients can be asymptomatic carriers or present with mild-to-severe respiratory symptoms. Imaging, including computed tomography is not recommended to screen/diagnose COVID-19 infections, but plays an important role in management of these patients, and to rule out alternative diagnoses or coexistent diseases. In our multicenter case series, we outline the clinical presentations and illustrate the most common imaging manifestations in patients hospitalized with COVID-19.

https://doi.org/10.1067/j.cpradiol.2020.04.001

Ángela Irabien-Ortiz, José Carreras-Mora, Alessandro Sionis, Julia Pàmies, José Montiel, Manel Tauron

**Miocarditis fulminante por COVID-19**

Revista Española de Cardiología (English Edition), 2020

https://doi.org/10.1016/j.rec.2020.04.005

Mariko Hiramatsu, Naoki Nishio, Masayuki Ozaki, Yuichiro Shindo, Katsunao Suzuki, Takanori Yamamoto, Yasushi Fujimoto, Michihiko Sone

**Anesthetic and surgical management of tracheostomy in a patient with COVID-19**

Auris Nasus Larynx, 2020

**Abstract:**

The ongoing pandemic coronavirus disease-2019 (COVID-19) infection causes severe respiratory dysfunction and has become an emergent issue for worldwide healthcare. Since COVID-19 spreads through contact and droplet infection routes, careful attention to infection control and surgical management is important to prevent cross-contamination of patients and medical staff. Tracheostomy is an effective method to treat severe respiratory dysfunction with prolonged respiratory management and should be performed as a high-risk procedure. Strict precaution and sufficient use of muscle relaxants are essential during tracheostomy to minimize cross-contamination among healthcare workers in the hospital. Here, we describe the anesthetic and surgical management of tracheostomy in a patient with COVID-19.


**Head and neck oncology during the COVID-19 pandemic: Reconsidering traditional treatment paradigms in light of new surgical and other multilevel risks**
Abstract:
The COVID-19 pandemic demands reassessment of head and neck oncology treatment paradigms. Head and neck cancer (HNC) patients are generally at high-risk for COVID-19 infection and severe adverse outcomes. Further, there are new, multilevel COVID-19-specific risks to patients, surgeons, health care workers (HCWs), institutions and society. Urgent guidance in the delivery of safe, quality head and neck oncologic care is needed. Novel barriers to safe HNC surgery include: 1) imperfect presurgical screening for COVID-19; 2) prolonged SARS-CoV-2 aerosolization; 3) occurrence of multiple, potentially lengthy, aerosol generating procedures (AGPs) within a single surgery; 4) potential incompatibility of enhanced personal protective equipment (PPE) with routine operative equipment; 5) existential or anticipated PPE shortages. Additionally, novel, COVID-19-specific multilevel risks to HNC patients, HCWs and institutions, and society include: use of immunosuppressive therapy, nosocomial COVID-19 transmission, institutional COVID-19 outbreaks, and, at some locations, societal resource deficiencies requiring health care rationing. Traditional head and neck oncology doctrines require reassessment given the extraordinary COVID-19-specific risks of surgery. Emergent, comprehensive management of these novel, multilevel surgical risks are needed. Until these risks are managed, we temporarily favor nonsurgical therapy over surgery for most mucosal squamous cell carcinomas, wherein surgery and nonsurgical therapy are both first-line options. Where surgery is traditionally preferred, we recommend multidisciplinary evaluation of multilevel surgical-risks, discussion of possible alternative nonsurgical therapies and shared-decision-making with the patient. Where surgery remains indicated, we recommend judicious preoperative planning and development of COVID-19-specific perioperative protocols to maximize the safety and quality of surgical and oncologic care.

https://doi.org/10.1016/j.oraloncology.2020.104684


Journal of Pediatric Urology, 2020

Abstract:
Summary
The COVID-19-pandemic forces hospitals to reorganize into a dual patient flow system. Healthcare professionals are forced to make decisions in patient prioritization throughout specialties. Most pediatric urology pathologies do not require immediate or urgent care, however, delay may compromise future renal function or fertility. Contact with patients and parents, either physical in safe conditions or by (video)telephone must continue. The Paediatric-Urology-Guidelines-panel of the EAU proposes recommendations on prioritization of care. Pediatric-Urology program directors must ensure education, safety and attention for mental health of staff. Upon resumption of care, adequate prioritization must ensure minimal impact on outcome.

https://doi.org/10.1016/j.jpurol.2020.04.007
Alexander Juusela, Munir Nazir, Martin Gimovsky

**Two Cases of COVID-19 Related Cardiomyopathy in Pregnancy.**

American Journal of Obstetrics & Gynecology MFM, 2020

**Abstract:**
In our institution, 2 of the initial 7 (28.6%; 95% CI 8.2%-64.1%) pregnant patients with confirmed COVID-19 severe infection developed cardiac dysfunction with moderately reduced left ventricular ejection fractions (LVEF) of 40%-45% and hypokinesis. Viral myocarditis and cardiomyopathy have been reported in non-pregnant COVID-19 patients. A case series of non-pregnant COVID-19 patients demonstrated that 33% of those in intensive care developed cardiomyopathy. More data are needed to ascertain the incidence of cardiomyopathy from COVID-19 in pregnancy, in all pregnant COVID-19 women, as well as those with severe (e.g. pneumonia) disease. We suggest an echocardiogram in pregnant women with COVID-19 pneumonia, in particular those necessitating oxygen, or critically ill, and we recommend handheld, point-of-care devices where possible to minimize contamination of staff and traditional, large echocardiogram machines.

[https://doi.org/10.1016/j.ajogmf.2020.100113](https://doi.org/10.1016/j.ajogmf.2020.100113)

Yu-Hsuan Lin, Chun-Hao Liu, Yu-Chuan Chiu

**Google searches for the keywords of “wash hands” predict the speed of national spread of COVID-19 outbreak among 21 countries**

Brain, Behavior, and Immunity, 2020

**Abstract:**
This study hypothesized that national population health literacy might reflect on their keywords searching. We applied Google searches for “wash hands” and “face mask” during January 19 to February 18 as a surrogate of national population health literacy among 21 countries, and examine whether google searches for “wash hands” and “face masks” would protect from increased numbers of confirmed cases of among 21 countries We found the increased google searches for “wash hands” from January 19 to February 18, 2020, correlated with a lower spreading speed of COVID-19 from February 19 to March 10, 2020 among 21 countries (Pearson’s correlation coefficient of −0.70, P < 0.001). The result highlights the importance of public awareness of hand washing in preventing COVID-19 disease spreading.


Esther E. Freeman, Devon E. McMahon, Matthew E. Fitzgerald, Lindy P. Fox, Misha Rosenbach, Junko Takeshita, Lars E. French, Bruce H. Thiers, George J. Hruza

**The AAD COVID-19 Registry: Crowdsourcing Dermatology in the Age of COVID-19**

Journal of the American Academy of Dermatology, 2020
COVID-19 pandemic through the lens of a gastroenterology fellow: looking for the silver lining

Gastrointestinal Endoscopy, 2020

https://doi.org/10.1016/j.gie.2020.03.3852

B. Robson

COVID-19 Coronavirus spike protein analysis for synthetic vaccines, a peptidomimetic antagonist, and therapeutic drugs, and analysis of a proposed achilles’ heel conserved region to minimize probability of escape mutations and drug resistance

Computers in Biology and Medicine, 2020

Abstract:

This paper continues a recent study of the spike protein sequence of the COVID-19 virus (SARS-CoV-2). It is also in part an introductory review to relevant computational techniques for tackling viral threats, using COVID-19 as an example. Q-UEL tools for facilitating access to knowledge and bioinformatics tools were again used for efficiency, but the focus in this paper is even more on the virus. Subsequence KRSFIEDLLFNKV of the S2’ spike glycoprotein proteolytic cleavage site continues to appear important. Here it is shown to be recognizable in the common cold coronaviruses, avian coronaviruses and possibly as traces in the nidoviruses of reptiles and fish. Its function or functions thus seem important to the coronaviruses. It might represent SARS-CoV-2 Achilles’ Heel, less likely to acquire resistance by mutation, as has happened in some early SARS vaccine studies discussed in the previous paper. Preliminary conformational analysis of the receptor (ACE2) binding site of the spike protein is carried suggesting that while it is somewhat conserved, it appears to be more variable than KRSFIEDLLFNKV. However compounds like emodin that inhibit SARS entry, apparently by binding ACE2, might also have functions at several different human protein binding studies. The enzyme 11β-hydroxysteroid dehydrogenase type 1 is again argued to be a convenient model pharmacophore perhaps representing an ensemble of targets, and it is noted that it occurs both in lung and alimentary tract. Perhaps it benefits the virus to block an inflammatory response by inhibiting the dehydrogenase, but a fairly complex web involves several possible targets.

https://doi.org/10.1016/j.compbiomed.2020.103749

Jeffrey B. Stambough, Brian M. Curtin, Jeremy M. Gililland, George N. Guild, Michael S. Kain, Vasili Karas, James A. Keeney, Kevin D. Plancher, Joseph T. Moskal
The Past, Present, and Future of Orthopaedic Education: Lessons Learned from the COVID-19 Pandemic

The Journal of Arthroplasty, 2020

Abstract:

The COVID-19 global pandemic has upended nearly every medical discipline, dramatically impacted patient care, and has had far-reaching effects on surgeon education. In many areas of the country, elective orthopaedic surgery has completely stopped to ensure that resources are available for the critically ill and to minimize the spread of disease. COVID-19 is forcing many around the world to reevaluate existing processes and organizations and adapt to carry out business, of which medicine and education are not immune. The majority of national and international orthopaedic conferences, training programs, and workshops have been postponed or canceled, and we are now critically evaluating the delivery of education to our colleagues as well as residents and fellows. This manuscript describes the evolution of orthopaedic education and significant paradigm shifts necessary to continue to teach ourselves and the future leaders of our noble profession.

https://doi.org/10.1016/j.arth.2020.04.032

Victor Grech

Unknown unknowns – COVID-19 and potential global mortality

Early Human Development, Volume 144, 2020

Abstract:

COVID-19 (SARS-CoV-2) is currently a global pandemic. This paper will attempt to estimate global infection rates and potential resultant mortality in the absence of effective treatment and/or vaccination. Calculations are based on World Health Organisation data from Wuhan in China: 14% of infected cases are severe, 5% require intensive care and 4% die. Estimated infection rates and mortality rates at the level of continents and some individual countries (when these are of sufficient size) are tabulated. This pandemic may cause close to half a billion deaths, i.e. 6% of the global population – and potentially more. At the risk of sounding sensational, but with a sober sense of realism, healthcare risks being plunged into the Middle-Ages if the public do not do their part. Infection cannot occur in the absence of contact. The only way to mitigate these numbers is to apply social distancing and take the standard precautions so frequently reiterated by Public Health: hand washing, avoid touching the face and so on. These measures are crucial as the human cost is going to be unthinkable even in the best-case scenarios that epidemiologists are modelling.

https://doi.org/10.1016/j.earlhumdev.2020.105026

Mahmoud Al-Balas, Hasan Ibrahim Al-Balas, Hamzeh Al-Balas

Surgery during the COVID-19 pandemic: A comprehensive overview and perioperative care

The American Journal of Surgery, 2020

Abstract:
COVID-19 disease is a pandemic disease caused by a single-stranded RNA virus that belongs to the coronavirus family known as 2019-nCoV (SARS-CoV-2). The disease is highly contagious and transmitted mainly by droplets or close contact. As the global incidence of COVID-19 disease is increasing dramatically, health systems worldwide started to suffer in terms of its capability to manage affected people and the ability to provide standard treatment for critically ill patients in a safe environment. As Medical staff has extensive contact with patients, families as well as other health care providers, they are very likely to cause cross-infection. This paper aims to provide a comprehensive overview of COVID-19 disease as well as to highlight essential measures that healthcare providers and surgeons need to take into consideration during their management of the patient during the COVID-19 pandemic.

https://doi.org/10.1016/j.amjsurg.2020.04.018

Gerard Kian-Meng Goh, A. Keith Dunker, James A. Foster, Vladimir N. Uversky

Shell disorder analysis predicts greater resilience of the SARS-CoV-2 (COVID-19) outside the body and in body fluids

Microbial Pathogenesis, Volume 144, 2020

Abstract:

The coronavirus (CoV) family consists of viruses that infects a variety of animals including humans with various levels of respiratory and fecal-oral transmission levels depending on the behavior of the viruses' natural hosts and optimal viral fitness. A model to classify and predict the levels of respective respiratory and fecal-oral transmission potentials of the various viruses was built before the outbreak of MERS-CoV using AI and empirically-based molecular tools to predict the disorder level of proteins. Using the percentages of intrinsic disorder (PID) of the nucleocapsid (N) and membrane (M) proteins of CoV, the model easily clustered the viruses into three groups with the SARS-CoV (M PID = 8%, N PID = 50%) falling into Category B, in which viruses have intermediate levels of both respiratory and fecal-oral transmission potentials. Later, MERS-CoV (M PID = 9%, N PID = 44%) was found to be in Category C, which consists of viruses with lower respiratory transmission potential but with higher fecal-oral transmission capabilities. Based on the peculiarities of disorder distribution, the SARS-CoV-2 (M PID = 6%, N PID = 48%) has to be placed in Category B. Our data show however, that the SARS-CoV-2 is very strange with one of the hardest protective outer shell, (M PID = 6%) among coronaviruses. This means that it might be expected to be highly resilient in saliva or other body fluids and outside the body. An infected body is likelier to shed greater numbers of viral particles since the latter is more resistant to antimicrobial enzymes in body fluids. These particles are also likelier to remain active longer. These factors could account for the greater contagiousness of the SARS-CoV-2 and have implications for efforts to prevent its spread.

https://doi.org/10.1016/j.micpath.2020.104177

Tara Ma, Anita Heywood, C. Raina MacIntyre

Travel health risk perceptions of Chinese international students in Australia – Implications for COVID-19
Infection, Disease & Health, 2020

Abstract:

Background

International students frequently return to their country of origin to visit friends and relatives (VFR), and are at increased risk of travel-associated infections. Little is known of their travel health seeking behaviours. China is the biggest source of international students studying in Australia and the unprecedented epidemic of COVID-19 in China makes this an important area of research.

Methods

Focus groups of Chinese international students were conducted to explore travel health-related knowledge, attitudes and practices. Eligible participants were studying in Sydney, and had travelled to China and Hong Kong to visit friends and relatives in the preceding 18 months. A variety of topics were explored, using a focus group guide. Thematic analysis was undertaken on the transcripts using nVivo software. The list of codes and themes were not pre-determined but developed through content analysis.

Results

Two focus groups were held with a total of 28 participants. Risk perception about VFR travel was generally low among Chinese international students. Pre-travel healthcare was not sought. Students strongly relied on the Internet, social media, parents and friends in China for travel health advice.

Conclusion

This research provides insights into Chinese international students as VFR travellers. It confirms students could be a risk population for importations of infections such as COVID-19 because of low risk perception and lack of seeking travel health advice. This can inform health promotion strategies for students.

https://doi.org/10.1016/j.idh.2020.03.002

John L. Sapp, Wael Alqarawi, Ciorsti J. MacIntyre, Rafik Tadros, Christian Steinberg, Jason D. Roberts, Zachary Laksman, Jeff S. Healey, Andrew D. Krahn

Guidance On Minimizing Risk of Drug-Induced Ventricular Arrhythmia During Treatment of COVID-19: A Statement from the Canadian Heart Rhythm Society

Canadian Journal of Cardiology, 2020

Abstract:

The COVID-19 pandemic has led to efforts at rapid investigation and application of drugs which may improve prognosis, but for which safety and efficacy are not yet established. This document attempts to provide reasonable guidance for use of antimicrobials which have uncertain benefit but may increase risk of QT prolongation and ventricular proarrhythmia, notably, chloroquine, hydroxychloroquine, azithromycin, and lopinavir/ritonavir. During the pandemic, efforts to reduce spread and minimize effects on health care resources mandate minimization of unnecessary medical procedures and testing. We recommend that the risk of drug proarrhythmia be minimized by: 1.
discontinuing unnecessary medications which may also increase the QT interval, 2. identifying outpatient patients who are likely at low risk and do not need further testing (no history of prolonged QT, unexplained syncope or family history of premature sudden cardiac death, no medications which may prolong the QT interval, and/or prior known normal QTc), and 3. performing baseline testing in hospitalized patients or those who may be at higher risk. If baseline ECG testing reveals a moderately prolonged QTc, optimization of medications and electrolytes may permit therapy. If the QTc is markedly prolonged, drugs which further prolong it should be avoided, or expert consultation may permit administration with mitigating precautions. These recommendations are made while there are no known effective treatments for COVID-19 and should be revisited when further data on efficacy and safety becomes available.

https://doi.org/10.1016/j.cjca.2020.04.003

Gregorio Tersalvi, Marco Vicenzi, Davide Calabretta, Luigi Biasco, Giovanni Pedrazzini, Dario Winterton

**Elevated troponin in patients with Coronavirus Disease 2019 (COVID-19): possible mechanisms**

Journal of Cardiac Failure, 2020

**Abstract:**

Coronavirus disease 2019 (COVID-19) is a pandemic that has affected more than 1.8 million people worldwide, overwhelmed health care systems due to the high proportion of critical presentations, and resulted in over 100,000 deaths. Since the first data analyses in China, elevated cardiac troponin has been noted in a substantial proportion of patients, implicating myocardial injury as a possible pathogenic mechanism contributing to severe illness and mortality. Accordingly, high troponin levels are associated with increased mortality in patients with COVID-19. This brief review explores the available evidence regarding the association between COVID-19 and myocardial injury.

https://doi.org/10.1016/j.cardfail.2020.04.009

Broderick Damian, Kyzas Panayiotis, Sanders Kevin, Sawyerr Alistair, Katre Chetan, Vassiliou Leandros

**Surgical tracheostomies in Covid-19 patients: Important considerations and the “5Ts” of safety**

British Journal of Oral and Maxillofacial Surgery, 2020

**Abstract:**

The coronavirus disease (covid19) pandemic (caused by the SARS-CoV-2 virus) is the greatest healthcare challenge in a generation. Clinicians are modifying the way they approach day-to-day procedures. Safety and reduction transmission risk is paramount. Surgical tracheostomies in covid19 patients are aerosol generating procedures linked with a significant risk of viral contamination. Here, we describe our local approach for these procedures, introducing the “5Ts” of safe tracheostomy practice: Theatre set-up, Team Briefing, Transfer of patient, Tracheostomy Procedure, Team Doffing and de-brief. We identify the critical steps of the procedure and explain how we overcome
the risks linked with breaking the transfer circuit to link the patient to the theatre ventilator. We explain our technique to reduce secretion spillage when opening the trachea. We emphasise the importance of closed tracheal suctioning and mouth suctioning prior to patient transfer. We highlight the importance of maintaining a closed circuit throughout the procedure and describe tips on how to achieve this. We summarise the steps in our protocol in an “easy to reproduce” way. Finally, we emphasise the importance of communication in a constantly changing environment and challenging circumstances.

https://doi.org/10.1016/j.bjoms.2020.04.008

Leila T. Tchelebi, Karin Haustermans, Marta Scorsetti, Ali Hosni, Florence Huguet, Maria A. Hawkins, Laura A. Dawson, Karyn Goodman

**Recommendations on the use of radiation therapy in managing patients with gastrointestinal malignancies in the era of COVID-19**

Radiotherapy and Oncology, 2020

**Abstract:**

As of April 6, 2020, there are over 1,200,000 reported cases and 70,000 deaths worldwide due to COVID-19, the disease caused by the SARS-CoV-2 virus, and these numbers rise exponentially by the day.[1] According to the Centers for Disease Control (CDC), the most effective means of minimizing the spread of the virus is through reducing interactions between individuals.[2] We performed a review of the literature, as well as national and international treatment guidelines, seeking data in support of the RADS principle (Remote visits, Avoid radiation, Defer radiation, Shorten radiation)[3] as it applies to gastrointestinal cancers. The purpose of the present work is to guide radiation oncologists managing patients with gastrointestinal cancers during the COVID-19 crisis in order to maintain the safety of our patients, while minimizing the impact of the pandemic on cancer outcomes.

https://doi.org/10.1016/j.radonc.2020.04.010

Christian A. Devaux, Jean-Marc Rolain, Philippe Colson, Didier Raoult

**New insights on the antiviral effects of chloroquine against coronavirus: what to expect for COVID-19?**

International Journal of Antimicrobial Agents, 2020

**Abstract:**

Recently, a novel coronavirus (2019-nCoV), officially known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged in China. Despite drastic containment measures, the spread of this virus is ongoing. SARS-CoV-2 is the aetiological agent of coronavirus disease 2019 (COVID-19) characterised by pulmonary infection in humans. The efforts of international health authorities have since focused on rapid diagnosis and isolation of patients as well as the search for therapies able to counter the most severe effects of the disease. In the absence of a known efficient therapy and because of the situation of a public-health emergency, it made sense to investigate the possible effect of chloroquine/hydroxychloroquine against SARS-CoV-2 since this molecule was
previously described as a potent inhibitor of most coronaviruses, including SARS-CoV-1. Preliminary trials of chloroquine repurposing in the treatment of COVID-19 in China have been encouraging, leading to several new trials. Here we discuss the possible mechanisms of chloroquine interference with the SARS-CoV-2 replication cycle.

https://doi.org/10.1016/j.ijantimicag.2020.105938

Yaron Ogen

Assessing nitrogen dioxide (NO2) levels as a contributing factor to coronavirus (COVID-19) fatality

Science of The Total Environment, Volume 726, 2020

Abstract:

Nitrogen dioxide (NO2) is an ambient trace-gas result of both natural and anthropogenic processes. Long-term exposure to NO2 may cause a wide spectrum of severe health problems such as hypertension, diabetes, heart and cardiovascular diseases and even death. The objective of this study is to examine the relationship between long-term exposure to NO2 and coronavirus fatality. The Sentinel-5P is used for mapping the tropospheric NO2 distribution and the NCEP/NCAR reanalysis for evaluating the atmospheric capability to disperse the pollution. The spatial analysis has been conducted on a regional scale and combined with the number of death cases taken from 66 administrative regions in Italy, Spain, France and Germany. Results show that out of the 4443 fatality cases, 3487 (78%) were in five regions located in north Italy and central Spain. Additionally, the same five regions show the highest NO2 concentrations combined with downwards airflow which prevent an efficient dispersion of air pollution. These results indicate that the long-term exposure to this pollutant may be one of the most important contributors to fatality caused by the COVID-19 virus in these regions and maybe across the whole world.

https://doi.org/10.1016/j.scitotenv.2020.138605

Ziying Lei, Huijuan Cao, Yusheng Jie, Zhanlian Huang, Xiaoyan Guo, Junfeng Chen, Liang Peng, Hong Cao, Xiaoling Dai, Jing Liu, Xuejun Li, Jianyun Zhu, Wenxiong Xu, Dabiao Chen, Zhiliang Gao, Jianrong He, Bingliang Lin

A cross-sectional comparison of epidemiological and clinical features of patients with coronavirus disease (COVID-19) in Wuhan and outside Wuhan, China

Travel Medicine and Infectious Disease, 2020

Abstract:

Background

Coronavirus disease 2019 (COVID-19) has spread outside the initial epicenter of Wuhan. We compared cases in Guangzhou and Wuhan to illustrate potential changes in pathogenicity and epidemiological characteristics as the epidemic has progressed.

Methods
We studied 20 patients admitted to the Third Affiliated Hospital of Sun Yat-Sen University in Guangzhou, China from January 22 to February 12, 2020. Data were extracted from medical records. These cases were compared with the 99 cases, previously published in Lancet, from Wuhan Jinyintan Hospital from January 1 to January 20, 2020.

Results

Guangzhou patients were younger and had better prognosis than Wuhan patients. The Wuhan patients were more likely to be admitted to the ICU (23% vs 5%) and had a higher mortality rate (11% vs 0%). Cases in Guangzhou tended to be more clustered. Diarrhea and vomiting were more common among Guangzhou patients and SARS-CoV-2 RNA was found in feces. Fecal SARS-CoV-2 RNA remained positive when nasopharyngeal swabs turned negative in some patients.

Conclusions

This study indicates possible diminishing virulence of the virus in the process of transmission. Yet persistent positive RNA in feces after negative nasopharyngeal swabs suggests a possible prolonged transmission period that challenges current quarantine practices.

https://doi.org/10.1016/j.tmaid.2020.101664

Brit Long, William J. Brady, Alex Koyfman, Michael Gottlieb

**Cardiovascular complications in COVID-19**

The American Journal of Emergency Medicine, 2020

**Abstract:**

**Background**

The coronavirus disease of 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). While systemic inflammation and pulmonary complications can result in significant morbidity and mortality, cardiovascular complications may also occur.

**Objective**

This brief report evaluates cardiovascular complications in the setting of COVID-19 infection.

**Discussion**

The current COVID-19 pandemic has resulted in over one million infected worldwide and thousands of death. The virus binds and enters through angiotensin-converting enzyme 2 (ACE2). COVID-19 can result in systemic inflammation, multiorgan dysfunction, and critical illness. The cardiovascular system is also affected, with complications including myocardial injury, myocarditis, acute myocardial infarction, heart failure, dysrhythmias, and venous thromboembolic events. Current therapies for COVID-19 may interact with cardiovascular medications.

**Conclusions**

Emergency clinicians should be aware of these cardiovascular complications when evaluating and managing the patient with COVID-19.

https://doi.org/10.1016/j.ajem.2020.04.048
Using observational data to quantify bias of traveller-derived COVID-19 prevalence estimates in Wuhan, China

The Lancet Infectious Diseases, 2020

Abstract:

Summary

Background

The incidence of coronavirus disease 2019 (COVID-19) in Wuhan, China, has been estimated using imported case counts of international travellers, generally under the assumptions that all cases of the disease in travellers have been ascertained and that infection prevalence in travellers and residents is the same. However, findings indicate variation among locations in the capacity for detection of imported cases. Singapore has had very strong epidemiological surveillance and contact tracing capacity during previous infectious disease outbreaks and has consistently shown high sensitivity of case-detection during the COVID-19 outbreak.

Methods

We used a Bayesian modelling approach to estimate the relative capacity for detection of imported cases of COVID-19 for 194 locations (excluding China) compared with that for Singapore. We also built a simple mathematical model of the point prevalence of infection in visitors to an epicentre relative to that in residents.

Findings

The weighted global ability to detect Wuhan-to-location imported cases of COVID-19 was estimated to be 38% (95% highest posterior density interval [HPDI] 22–64) of Singapore’s capacity. This value is equivalent to 2·8 (95% HPDI 1·5–4·4) times the current number of imported and reported cases that could have been detected if all locations had had the same detection capacity as Singapore. Using the second component of the Global Health Security index to stratify likely case-detection capacities, the ability to detect imported cases relative to Singapore was 40% (95% HPDI 22–67) among locations with high surveillance capacity, 37% (18–68) among locations with medium surveillance capacity, and 11% (0–42) among locations with low surveillance capacity. Treating all travellers as if they were residents (rather than accounting for the brief stay of some of these travellers in Wuhan) contributed modestly to underestimation of prevalence.

Interpretation

Estimates of case counts in Wuhan based on assumptions of 100% detection in travellers could have been underestimated by several fold. Furthermore, severity estimates will be inflated several fold.
since they also rely on case count estimates. Finally, our model supports evidence that underdetected cases of COVID-19 have probably spread in most locations around the world, with greatest risk in locations of low detection capacity and high connectivity to the epicentre of the outbreak.

Funding

US National Institute of General Medical Sciences, and Fellowship Foundation Ramon Areces.

https://doi.org/10.1016/S1473-3099(20)30229-2

Marc Saez, Aurelio Tobias, Diego Varga, Maria Antònia Barceló

Effectiveness of the measures to flatten the epidemic curve of COVID-19. The case of Spain

Science of The Total Environment, 2020

Abstract:

After the cases of COVID-19 skyrocketed, showing that it was no longer possible to contain the spread of the disease, the governments of many countries launched mitigation strategies, trying to slow the spread of the epidemic and flatten its curve. The Spanish Government adopted physical distancing measures on March 14; 13 days after the epidemic outbreak started its exponential growth. Our objective in this paper was to evaluate ex-ante (before the flattening of the curve) the effectiveness of the measures adopted by the Spanish Government to mitigate the COVID-19 epidemic. Our hypothesis was that the behavior of the epidemic curve is very similar in all countries. We employed a time series design, using information from January 17 to April 5, 2020 on the new daily COVID-19 cases from Spain, China and Italy. We specified two generalized linear mixed models (GLMM) with variable response from the Gaussian family (i.e. linear mixed models): one to explain the shape of the epidemic curve of accumulated cases and the other to estimate the effect of the intervention. Just one day after implementing the measures, the variation rate of accumulated cases decreased daily, on average, by 3.059 percentage points, (95% credibility interval: −5.371, −0.879). This reduction will be greater as time passes. The reduction in the variation rate of the accumulated cases, on the last day for which we have data, has reached 5.11 percentage points. The measures taken by the Spanish Government on March 14, 2020 to mitigate the epidemic curve of COVID-19 managed to flatten the curve and although they have not (yet) managed to enter the decrease phase, they are on the way to do so.

https://doi.org/10.1016/j.scitotenv.2020.138761

Sherief Musa

Hepatic and gastrointestinal involvement in coronavirus disease 2019 (COVID-19): What do we know till now?

Arab Journal of Gastroenterology, 2020

Abstract:

Since December 2019, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative pathogen of coronavirus disease 2019 (COVID-19), has posed a serious threat to global
health and is currently causing a major pandemic. While patients typically present with fever and a respiratory illness, mounting evidence indicates that patients might also report extra-pulmonary manifestations, including those affecting the liver and gastrointestinal tract. This involvement may have important implications to the disease management, transmission, and prognosis, especially in patients with pre-existing hepatic or digestive co-morbidities. In this review, the characteristics and possible explanations of hepatic and gastrointestinal involvement caused by SARS-CoV-2 infection are summarized, adding to our knowledge of the spectrum of COVID-19. In addition, preventive measures implemented in endoscopy departments to prevent further dissemination of SARS-CoV-2 infection are proposed.

https://doi.org/10.1016/j.ajg.2020.03.002

Yunbao Pan, Xinran Li, Gui Yang, Junli Fan, Yueting Tang, Jin Zhao, Xinghua Long, Shuang Guo, Ziwu Zhao, Yinjuan Liu, Hanning Hu, Han Xue, Yirong Li

Serological immunochromatographic approach in diagnosis with SARS-CoV-2 infected COVID-19 patients

Journal of Infection, 2020

Abstract:

An outbreak of new coronavirus SARS-CoV-2 was occurred in Wuhan, China and rapidly spread to other cities and nations. The standard diagnostic approach that widely adopted in the clinic is nucleic acid detection by real-time RT-PCR. However, the false-negative rate of the technique is unneglectable and serological methods are urgently warranted. Here, we presented the colloidal gold-based immunochromatographic (ICG) strip targeting viral IgM or IgG antibody and compared it with real-time RT-PCR. The sensitivity of ICG assay with IgM and IgG combinatorial detection in nucleic acid confirmed cases were 11.1%, 92.9% and 96.8% at the early stage (1–7 days after onset), intermediate stage (8–14 days after onset), and late stage (more than 15 days), respectively. The ICG detection capacity in nucleic acid-negative suspected cases was 43.6%. In addition, the concordance of whole blood samples and plasma showed Cohen's kappa value of 0.93, which represented the almost perfect agreement between two types of samples. In conclusion, serological ICG strip assay in detecting SARS-CoV-2 infection is both sensitive and consistent, which is considered as an excellent supplementary approach in clinical application.

https://doi.org/10.1016/j.jinf.2020.03.051


Educating Surgeons to Educate Patients about the COVID-19 Pandemic

The Journal of Arthroplasty, 2020

Abstract:

The spring of 2020 has been a trying time for the global medical community as it has faced the latest pandemic, COVID-19. This contagious and lethal virus has impacted patients and healthcare workers alike. Elective surgeries have been suspended and the very core of our healthcare system is being strained. The following brief communication reviews pertinent details about the virus,
delaying elective surgeries and what patients can do during this time. The goal is to disseminate factual data that surgeons can then use to educate their patients.

https://doi.org/10.1016/j.arth.2020.04.037

Bobak Moazzami, Niloofar Razavi-Khorasani, Arash Dooghaie Moghadam, Ermia Farokhi, Nima Rezaei

COVID-19 and telemedicine: Immediate action required for maintaining healthcare providers well-being

Journal of Clinical Virology, Volume 126, 2020

Abstract:

The well-being of the health care workforce is the cornerstone of every well-functioning health system. As a result of the pandemic, medical healthcare providers are under an enormous amount of workload pressure along with increased total health expenditures. The overwhelming burden of COVID-19 illness could lead to caregiver burnout. Direct-to-consumer telemedicine can enable patients to connect with their healthcare provider at a distance. This virtual platform could be used by smartphones or webcam-enabled computers and allows physicians to effectively screen patients with early signs of COVID-19 before they reach to hospital.

https://doi.org/10.1016/j.jcv.2020.104345

Ibrahim M. Ibrahim, Doaa H. Abdelmalek, Mohammed E. Elshahat, Abdo A. Elfiky

COVID-19 spike-host cell receptor GRP78 binding site prediction

Journal of Infection, Volume 80, Issue 5, 2020, Pages 554-562

Abstract:

Summary

Objectives

Understanding the novel coronavirus (COVID-19) mode of host cell recognition may help to fight the disease and save lives. The spike protein of coronaviruses is the main driving force for host cell recognition.

Methods

In this study, the COVID-19 spike binding site to the cell-surface receptor (Glucose Regulated Protein 78 (GRP78)) is predicted using combined molecular modeling docking and structural bioinformatics. The COVID-19 spike protein is modeled using its counterpart, the SARS spike.

Results

Sequence and structural alignments show that four regions, in addition to its cyclic nature have sequence and physicochemical similarities to the cyclic Pep42. Protein-protein docking was performed to test the four regions of the spike that fit tightly in the GRP78 Substrate Binding
Domain β (SBDβ). The docking pose revealed the involvement of the SBDβ of GRP78 and the receptor-binding domain of the coronavirus spike protein in recognition of the host cell receptor.

Conclusions

We reveal that the binding is more favorable between regions III (C391-C525) and IV (C480-C488) of the spike protein model and GRP78. Region IV is the main driving force for GRP78 binding with the predicted binding affinity of -9.8 kcal/mol. These nine residues can be used to develop therapeutics specific against COVID-19.

https://doi.org/10.1016/j.jinf.2020.02.026

Andre Montoya-Barthelemy, Charles D. Lee, Dave Cundiff, Eric Smith

**COVID-19 and the Correctional Environment: The American Prison as a Focal Point for Public Health**

American Journal of Preventive Medicine, 2020

https://doi.org/10.1016/j.amepre.2020.04.001

Jinsong Zhang, Lan Shuai, Hui Yu, Zhouye Wang, Meihui Qiu, Lu Lu, Xuan Cao, Weipin Xia, Yuanyuan Wang, Runsen Chen

**Acute stress, behavioural symptoms and mood states among school-age children with attention-deficit/hyperactive disorder during the COVID-19 outbreak**

Asian Journal of Psychiatry, Volume 51, 2020

https://doi.org/10.1016/j.ajp.2020.102077

Shahul H. Ebrahim, Ziad A. Memish

**COVID-19 – the role of mass gatherings**

Travel Medicine and Infectious Disease, 2020

**Abstract:**

Mass gathering (MG) medicine emerged against the backdrop of the 2009 pandemic H1N1 Public Health Emergency of International Concern (PHEIC) when the Kingdom of Saudi Arabia (KSA) hosted the largest annual mass gathering of over 3 million pilgrims from 180 plus countries. However, the events surrounding the latest threat to global health, the PHEIC COVID-19, may be sufficient to highlight the role of mass gatherings, mass migration, and other forms of dense gatherings of people on the emergence, sustenance, and transmission of novel pathogens. The COVID-19 spread illustrates the role of MGs in exacerbation of the scope of pandemics. Cancellation or suspension of MGs would be critical to pandemic mitigation. It is unlikely that medical countermeasures are available during the early phase of pandemics. Therefore, mitigation of its impact, rather than containment and control becomes a priority during pandemics. As the most systematically studied MG-related respiratory disease data come from KSA, the cancellation of Umrah by the KSA authorities, prior to emergence of cases, provide the best opportunity to develop
mathematical models to quantify event cancellations related mitigation of COVID-19 transmission in KSA and to the home countries of pilgrims. COVID-19 has already provided examples of both clearly planned event cancellations such as the Umrah suspension in KSA, and where outbreaks and events were continued.

https://doi.org/10.1016/j.tmaid.2020.101617

Fei Shao, Shuang Xu, Xuedi Ma, Zhouming Xu, Jiayou Lyu, Michael Ng, Hao Cui, Changxiao Yu, Qing Zhang, Peng Sun, Ziren Tang

In-hospital cardiac arrest outcomes among patients with COVID-19 pneumonia in Wuhan, China

Resuscitation, 2020

Abstract:

Objective

: To describe the characteristics and outcomes of patients with severe COVID-19 and in-hospital cardiac arrest (IHCA) in Wuhan, China.

Methods

The outcomes of patients with severe COVID-19 pneumonia after IHCA over a 40-day period were retrospectively evaluated. Between January 15 and February 25, 2020, data for all cardiopulmonary resuscitation (CPR) attempts for IHCA that occurred in a tertiary teaching hospital in Wuhan, China were collected according to the Utstein style. The primary outcome was restoration of spontaneous circulation (ROSC), and the secondary outcomes were 30-day survival, and neurological outcome.

Results

: Data from 136 patients showed 119 (87.5%) patients had a respiratory cause for their cardiac arrest, and 113 (83.1%) were resuscitated in a general ward. The initial rhythm was asystole in 89.7%, pulseless electrical activity (PEA) in 4.4%, and shockable in 5.9%. Most patients with IHCA were monitored (93.4%) and in most resuscitation (89%) was initiated <1min. The average length of hospital stay was 7 days and the time from illness onset to hospital admission was 10 days. The most frequent comorbidity was hypertension (30.2%), and the most frequent symptom was shortness of breath (75%). Of the patients receiving CPR, ROSC was achieved in 18 (13.2%) patients, 4 (2.9%) patients survived for at least 30 days, and one patient achieved a favourable neurological outcome at 30 days. Cardiac arrest location and initial rhythm were associated with better outcomes.

Conclusion

: Survival of patients with severe COVID-19 pneumonia who had an in-hospital cardiac arrest was poor in Wuhan.

https://doi.org/10.1016/j.resuscitation.2020.04.005

J Veziant, N Bourdel, K Slim
Risks of viral contamination in healthcare professionals during laparoscopy in the Covid-19 pandemic

Journal of Visceral Surgery, 2020

Abstract:
The Covid-19 pandemic has markedly changed our practices. This article analyses the risks of contamination among healthcare professionals (HCPs) during laparoscopic surgery on patients with Covid-19. Harmful effects of aerosols from a pneumoperitoneum with the virus present have not yet been quantified. Measures for the protection of HCPs are an extrapolation of those taken during other epidemics. They must still be mandatory to minimise the risk of viral contamination. Protection measures include personal protection equipment for HCPs, adaptation of surgical technique (method for obtaining pneumoperitoneum, filters, preferred intracorporeal anastomosis, precautions during the exsufflation of the pneumoperitoneum), and organisation of the operating room.

https://doi.org/10.1016/j.jvisc surg.2020.04.010

Yuan Wu, Jun Wang, Chenggang Luo, Sheng Hu, Xi Lin, Aimee E. Anderson, Eduardo Bruera, Xiaoxin Yang, Shaozhong Wei, Yu Qian

A comparison of burnout frequency among oncology physicians and nurses working on the front lines and usual wards during the COVID-19 epidemic in Wuhan, China

Journal of Pain and Symptom Management, 2020

Abstract:
Context
The epidemic of Coronavirus Disease 2019 (COVID-19) was first identified in Wuhan, China and has now spread worldwide. In the affected countries, physicians and nurses are under heavy workload conditions and are at high risk of infection.

Objectives
The aim of this study was to compare the frequency of burnout between physicians and nurses on the front line and those working in usual wards.

Methods
A survey with 49 questions total was administered to 220 medical staff members from the COVID-19 front lines and usual wards, with a ratio of 1:1. General information such as age, gender, marriage status, and the Maslach Burnout Inventory-Medical Personnel (MBI), were gathered and compared.

Results
The group working on the front lines had a lower frequency of burnout (13% versus 39%, \( P < .0001 \)), and were less worried about being infected compared to the usual ward group.

Conclusion
Compared to medical staff working on their usual wards for uninfected patients, medical staff working on the COVID-19 front line had a lower frequency of burnout. These results suggest that in the face of the COVID-19 crisis, both front line and usual ward staff should be considered when policies and procedures to support the well-being of health care workers are devised.

https://doi.org/10.1016/j.jpainsymman.2020.04.008

Donald C. Hall, Hai-Feng Ji

A search for medications to treat COVID-19 via in silico molecular docking models of the SARS-CoV-2 spike glycoprotein and 3CL protease

Travel Medicine and Infectious Disease, 2020

Abstract:

Background

The COVID-19 has now been declared a global emergency by the World Health Organization. There is an emergent need to search for possible medications.

Method

Utilization of the available sequence information, homology modeling, and in silico docking a number of available medications might prove to be effective in inhibiting the COVID-19 two main drug targets the spike glycoprotein and the 3CL protease.

Results

Several compounds were determined from the in silico docking models that might prove to be effective inhibitor for the COVID-19. Several antiviral medications: Zanamivir, Indinavir, Saquinavir, and Remdesivir show potential as and 3CLPRO main proteinase inhibitors and as a treatment of COVID-19.

Conclusion

Zanamivir, Indinavir, Saquinavir, and Remdesivir are among the exciting hits on the 3CLPRO main proteinase. It is also exciting to uncover that Flavin Adenine Dinucleotide (FAD) Adeflavin, B2 Deficiency medicine, and Coenzyme A, a coenzyme, may also be potentially used for the treatment of SARS-CoV-2 infections. The use of these off-label medications may be beneficial in the treatment of the COVID-19.

https://doi.org/10.1016/j.tmaid.2020.101646

Ai Tang Xiao, Yi Xin Tong, Chun Gao, Li Zhu, Yu Jie Zhang, Sheng Zhang

Dynamic profile of RT-PCR findings from 301 COVID-19 patients in Wuhan, China: a descriptive study

Journal of Clinical Virology, 2020

Abstract:

Background
With the spread of Coronavirus Disease 2019 (COVID-19) caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) infection, its effect on society is amplified. We aimed to describe the viral detection results across different timepoints throughout the disease course.

Methods

A retrospective study of 301 confirmed COVID-19 patients hospitalized at Tongji Hospital in Wuhan, China, were included. Demographic characteristics of the patients were collected. Upper respiratory specimens (throat and/or nasal swabs) were obtained and analyzed by real-time RT-PCR for SARS-CoV-2 infection. Period of viral infection and the contagious stage were analyzed.

Results

Of 301 hospitalized COVID-19 patients, the median age was 58 years and 51.2% were male. The median period between symptoms presence and positive SARS-CoV-2 RT-PCR results was 16 days (IQR, 10-23, N = 301). The median period between symptoms presence and an effective negative SARS-CoV-2 RT-PCR result was 20 days (IQR, 17-24; N = 216). Infected patient ≥65 years old stayed contagious longer (22 days vs 19 days, p = 0.015). Although two consecutive negative results were confirmed in 70 patients, 30% of them had positive viral test results for the third time. Using specimens from nasal swabs to run the RT-PCR test showed a higher positive rate than using specimens from throat swabs.

Conclusions

This large-scale investigation with 1113 RT-PCR test results from 301 COVID-19 patients showed that the average contagious period of SARS-CoV-2 infected patients was 20 days. Longer observation period and more than 2 series of negative viral test are necessary for patients ≥65 years.

https://doi.org/10.1016/j.jcv.2020.104346


First confirmed detection of SARS-CoV-2 in untreated wastewater in Australia: A proof of concept for the wastewater surveillance of COVID-19 in the community

Science of The Total Environment, 2020

Abstract:

Infection with SARS-CoV-2, the etiologic agent of the ongoing COVID-19 pandemic, is accompanied by the shedding of the virus in stool. Therefore, the quantification of SARS-CoV-2 in wastewater affords the ability to monitor the prevalence of infections among the population via wastewater-based epidemiology (WBE). In the current work, SARS-CoV-2 RNA was concentrated from wastewater in a catchment in Australia and viral RNA copies were enumerated using reverse transcriptase quantitative polymerase chain reaction (RT-qPCR) resulting in two positive detections within a six day period from the same wastewater treatment plant (WWTP). The estimated RNA copy numbers observed in the wastewater were then used to estimate the number of infected individuals in the catchment via Monte Carlo simulation. Given the uncertainty and variation in the input parameters, the model estimated a median range of 171 to 1090 infected persons in the
catchment, which is in reasonable agreement with clinical observations. This work highlights the viability of WBE for monitoring infectious diseases, such as COVID-19, in communities. The work also draws attention to the need for further methodological and molecular assay validation for enveloped viruses in wastewater.

https://doi.org/10.1016/j.scitotenv.2020.138764

Raju Vaishya, Mohd Javaid, Ibrahim Haleem Khan, Abid Haleem

**Artificial Intelligence (AI) applications for COVID-19 pandemic**


**Abstract:**

**Background and aims**

Healthcare delivery requires the support of new technologies like Artificial Intelligence (AI), Internet of Things (IoT), Big Data and Machine Learning to fight and look ahead against the new diseases. We aim to review the role of AI as a decisive technology to analyze, prepare us for prevention and fight with COVID-19 (Coronavirus) and other pandemics.

**Methods**

The rapid review of the literature is done on the database of Pubmed, Scopus and Google Scholar using the keyword of COVID-19 or Coronavirus and Artificial Intelligence or AI. Collected the latest information regarding AI for COVID-19, then analyzed the same to identify its possible application for this disease.

**Results**

We have identified seven significant applications of AI for COVID-19 pandemic. This technology plays an important role to detect the cluster of cases and to predict where this virus will affect in future by collecting and analyzing all previous data.

**Conclusions**

Healthcare organizations are in an urgent need for decision-making technologies to handle this virus and help them in getting proper suggestions in real-time to avoid its spread. AI works in a proficient way to mimic like human intelligence. It may also play a vital role in understanding and suggesting the development of a vaccine for COVID-19. This result-driven technology is used for proper screening, analyzing, prediction and tracking of current patients and likely future patients. The significant applications are applied to tracks data of confirmed, recovered and death cases.

https://doi.org/10.1016/j.dsx.2020.04.012

Giovanni Novi, Malgorzata Mikulska, Federica Briano, Federica Toscanini, Francesco Tazza, Antonio Uccelli, Matilde Inglese

**COVID-19 in a MS patient treated with ocrelizumab: does immunosuppression have a protective role?**
Multiple Sclerosis and Related Disorders, Volume 42, 2020

Abstract:

Background

Coronavirus disease 19 (COVID-19) is a novel disease entity that is spreading throughout the world. It has been speculated that patients with comorbidities and elderly patients could be at high risk for respiratory insufficiency and death. Immunosuppression could expose infected patients to even higher risks of disease complications due to dampened immune response. However, it has been speculated that overactive immune response could drive clinical deterioration and, based on this hypothesis, several immunosuppressants are currently being tested as potential treatment for COVID-19.

Methods

In this paper we report on a patient that has been treated with ocrelizumab (a B-cell depleting monoclonal antibody) for primary progressive multiple sclerosis who developed COVID-19.

Results

Despite complete B cell depletion, patient symptoms abated few days after hospitalization, and he was discharged to home-quarantine. Phone interview follow-up confirmed that, after 14 days, no new symptoms occurred.

Discussion

This report supports the putative role of immunosuppressive therapy in COVID-19 affected patients.

https://doi.org/10.1016/j.msard.2020.102120

Fan Wang, Haizhou Wang, Junli Fan, Yongxi Zhang, Hongling Wang, Qiu Zhao

Pancreatic injury patterns in patients with COVID-19 pneumonia

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.03.055

Jeremy Tey, Shaun Ho, Bok Ai Choo, Francis Ho, Swee Peng Yap, Jeffrey K.L. Tuan, Cheng Nang Leong, Timothy Cheo, Kiattisa Sommat, Michael L.C. Wang

Navigating the challenges of the COVID-19 outbreak: perspectives from the radiation oncology service in singapore

Radiotherapy and Oncology, 2020

Abstract:

In December 2019, pneumonia of unknown cause was reported by China to WHO. The outbreak was found to be caused by a coronavirus which was officially named “severe acute respiratory syndrome coronavirus 2” (SARS-CoV-2), and the disease caused by it was named ‘COVID-19’. The first case in Singapore was confirmed on 23rd January 2020. With lessons learnt from the SARS epidemic in 2003 and the H1N1 flu pandemic in 2009, Singapore was much better prepared to deal
with the virus outbreak. The government has taken swift measures to contain and break the chain of transmission. Healthcare workers face the challenge of keeping patients and staff safe from the disease. There is a higher risk of mortality of COVID-19 in cancer patients and hence unique considerations for a radiation oncology department operating in an infectious disease outbreak. This article is the recommendations and adapted workflow from the two National Cancer Centres in Singapore with the endorsement by the working committee of the Chapter of Radiation Oncology, Academy of Medicine, Singapore. It highlights the challenges that radiation oncology departments in Singapore face and the appropriate recommended responses. This includes interventions, business continuity plans and workflow in managing a COVID-19 positive patient on radiotherapy.

https://doi.org/10.1016/j.radonc.2020.03.030

Andrea Remuzzi, Giuseppe Remuzzi

COVID-19 and Italy: what next?
The Lancet, Volume 395, Issue 10231, 2020, Pages 1225-1228

Abstract:

Summary
The spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has already taken on pandemic proportions, affecting over 100 countries in a matter of weeks. A global response to prepare health systems worldwide is imperative. Although containment measures in China have reduced new cases by more than 90%, this reduction is not the case elsewhere, and Italy has been particularly affected. There is now grave concern regarding the Italian national health system's capacity to effectively respond to the needs of patients who are infected and require intensive care for SARS-CoV-2 pneumonia. The percentage of patients in intensive care reported daily in Italy between March 1 and March 11, 2020, has consistently been between 9% and 11% of patients who are actively infected. The number of patients infected since Feb 21 in Italy closely follows an exponential trend. If this trend continues for 1 more week, there will be 30 000 infected patients. Intensive care units will then be at maximum capacity; up to 4000 hospital beds will be needed by mid-April, 2020. Our analysis might help political leaders and health authorities to allocate enough resources, including personnel, beds, and intensive care facilities, to manage the situation in the next few days and weeks. If the Italian outbreak follows a similar trend as in Hubei province, China, the number of newly infected patients could start to decrease within 3–4 days, departing from the exponential trend. However, this cannot currently be predicted because of differences between social distancing measures and the capacity to quickly build dedicated facilities in China.

https://doi.org/10.1016/S0140-6736(20)30627-9

Nikita Mehta, Maryann Mazer-Amirshahi, Nour Alkindi, Ali Pourmand

Pharmacotherapy in COVID-19; A narrative review for emergency providers
The American Journal of Emergency Medicine, 2020

Abstract:

Introduction
The COVID-19 pandemic has been particularly challenging due to a lack of established therapies and treatment guidelines. With the rapid transmission of disease, even the off-label use of available therapies has been impeded by limited availability. Several antivirals, antimalarials, and biologics are being considered for treatment at this time. The purpose of this literature review is to synthesize the available information regarding treatment options for COVID-19 and serve as a resource for health care professionals.

Objectives

This narrative review was conducted to summarize the effectiveness of current therapy options for COVID-19 and address the controversial use of non-steroidal anti-inflammatory drugs (NSAIDs), angiotensin converting enzyme (ACE) inhibitors, and angiotensin receptor blockers (ARBs). PubMed and SCOPUS were queried using a combination of the keywords “COVID 19,” “SARS-CoV-2,” and “treatment.” All types of studies were evaluated including systematic reviews, case-studies, and clinical guidelines.

Discussion

There are currently no therapeutic drugs available that are directly active against SARS-CoV-2; however, several antivirals (remdesivir, favipiravir) and antimalarials (chloroquine, hydroxychloroquine) have emerged as potential therapies. Current guidelines recommend combination treatment with hydroxychloroquine/azithromycin or chloroquine, if hydroxychloroquine is unavailable, in patients with moderate disease, although these recommendations are based on limited evidence. Remdesivir and convalescent plasma may be considered in critical patients with respiratory failure; however, access to these therapies may be limited. Interleukin-6 (IL-6) antagonists may be used in patients who develop evidence of cytokine release syndrome (CRS). Glucocorticoids should be avoided unless there is evidence of refractory septic shock, acute respiratory distress syndrome (ARDS), or another compelling indication for their use. ACE inhibitors and ARBs should not be discontinued at this time and ibuprofen may be used for fever.

Conclusion

There are several ongoing clinical trials that are testing the efficacy of single and combination treatments with the drugs mentioned in this review and new agents are under development. Until the results of these trials become available, we must use the best available evidence for the prevention and treatment of COVID-19. Additionally, we can learn from the experiences of healthcare providers around the world to combat this pandemic.

https://doi.org/10.1016/j.ajem.2020.04.035

Yuri Bruinen de Bruin, Anne-Sophie Lequarre, Josephine McCourt, Peter Clevestig, Filippo Pigazzani, Maryam Zare Jeddi, Claudio Colosio, Margarida Goulart

Initial impacts of global risk mitigation measures taken during the combatting of the COVID-19 pandemic

Safety Science, 2020

Abstract:
This paper presents an analysis of risk mitigation measures taken by countries around the world facing the current COVID-19 outbreak. In light of the current pandemic the authors collated and clustered (using harmonised terminology) the risk mitigation measures taken around the globe in the combat to contain, and since March 11 2020, to limit the spread of the SARS-CoV-2 virus known to cause the Coronavirus disease 2019 (COVID-19). This overview gathers lessons learnt, providing an update on the current knowledge for authorities, sectors and first responders on the effectiveness of said measures, and may allow enhanced prevention, preparedness and response for future outbreaks. Various measures such as mobility restrictions, physical distancing, hygienic measures, socio-economic restrictions, communication and international support mechanisms have been clustered and are reviewed in terms of the nature of the actions taken and their qualitative early-perceived impact. At the time of writing, it is still too premature to express the quantitative effectiveness of each risk mitigation cluster, but it seems that the best mitigation results are reported when applying a combination of voluntary and enforceable measures.

https://doi.org/10.1016/j.ssci.2020.104773

Lorenzo Giuseppe Luciani, Daniele Mattevi, Tommaso Caì, Guido Giusti, Silvia Proietti, Gianni Malossini

Teleurology in the Time of Covid-19 Pandemic: Here to Stay?

Urology, 2020

Abstract:

Objective
To assess the implementation and outcomes of telemedicine in a Department of Urology in Northern Italy during the outbreak of the Covid-19 pandemic.

Methods
All the outpatient clinical activities during the 4 weeks following the national lockdown (March 9-April 3, 2020) in the Department of Urology of the Trento Province, Italy, were reviewed and categorized. Expert staff members examined the electronic records, selecting whether the clinic appointments should be canceled or confirmed (via telephone consultation or face-to-face visit). The rate, indication, and modality of visits were investigated.

Results
Overall, 415 of 928 (45%) scheduled patients canceled their clinic appointment themselves or were canceled by staff members without rescheduling. The remaining 523 (55%) cases were screened undergoing telephone consultation in 295 (56%) and face-to-face visit in 228 (44%). The rate of face-to-face visit decreased from 63% to 9% during week 1 and 4, respectively. Seventy-four percent of face-to-face visits regarded suspected recurrent or new onset malignancy or potentially dangerous clinical conditions (severe urinary symptoms or complicated urinary stones or infection). The median age of patients in the face-to-face and telephone groups was 59 (range 20-69) and 65 years old (range 37-88), respectively.

Conclusion
A pandemic is a dynamic scenario, requiring reorganization and flexibility of the healthcare delivery. Forty-five percent visits were canceled without rescheduling. Although a minimum portion
of face-to-face visit (<10% 1 month after the lockdown) was preserved mostly for suspected malignancy or potentially life-threatening conditions, telemedicine proved a pragmatic approach allowing efficient screening of cases and adequate protection for patients and clinicians.

https://doi.org/10.1016/j.urology.2020.04.004

Christian M. Hedrich

COVID-19 – Considerations for the paediatric rheumatologist

Clinical Immunology, Volume 214, 2020

Abstract:
The novel coronavirus SARS-CoV2 is a threat to the health and well-being of millions of lifes across the globe. A significant proportion of adult patients require hospitalisation and may develop severe life-threatening complications. Children, on the other hand, can carry and transmit the virus, but usually do not develop severe disease. Mortality in the paediatric age-group is relatively low. Differences in virus containment and clearance, as well as reduced inflammation-related tissue and organ damage may be caused by age-specific environmental and host factors. Since severe complications in adults are frequently caused by uncontrolled immune responses and a resulting “cytokine storm” that may be controlled by targeted blockade of cytokines, previously established treatment with immunosuppressive treatments may indeed protect children from complications.

https://doi.org/10.1016/j.clim.2020.108420

Robert Connor Chick, Guy Travis Clifton, Kaitlin M. Peace, Brandon W. Propper, Diane F. Hale, Adnan A. Alseidi, Timothy J. Vreeland

Using Technology to Maintain the Education of Residents During the COVID-19 Pandemic

Journal of Surgical Education, 2020

Abstract:
Background

The COVID-19 pandemic presents a unique challenge to surgical residency programs. Due to the restrictions recommended by the Centers for Disease Control and Prevention and other organizations, the educational landscape for surgical residents is rapidly changing. In addition, the time course of these changes is undefined.

Methods

We attempt to define the scope of the problem of maintaining surgical resident education while maintaining the safety of residents, educators, and patients. Within the basic framework of limiting in-person gatherings, postponing or canceling elective operations in hospitals, and limiting rotations between sites, we propose innovative solutions to maintain rigorous education.

Results
We propose several innovative solutions including the flipped classroom model, online practice questions, teleconferencing in place of in-person lectures, involving residents in telemedicine clinics, procedural simulation, and the facilitated use of surgical videos. Although there is no substitute for hands-on learning through operative experience and direct patient care, these may be ways to mitigate the loss of learning exposure during this time.

Conclusions

These innovative solutions utilizing technology may help to bridge the educational gap for surgical residents during this unprecedented circumstance. The support of national organizations may be beneficial in maintaining rigorous surgical education.

https://doi.org/10.1016/j.jsurg.2020.03.018

Ali Ganji, Iman Farahani, Behzad Khansarinejad, Ali Ghazavi, Ghasem Mosayebi

**Increased expression of CD8 marker on T-cells in COVID-19 patients**

Blood Cells, Molecules, and Diseases, 2020

**Abstract:**

**Background**

Cell-mediated immunity including T-cells (T helper and cytotoxic) plays an essential role in efficient antiviral responses against coronavirus disease-2019 (COVID-19). Therefore, in this study, we evaluated the ratio and expression of CD4 and CD8 markers in COVID-19 patients to clarify the immune characterizations of CD4 and CD8 T-cells in COVID-19 patients.

**Methods**

Peripheral blood samples of 25 COVID-19 patients and 25 normal individuals with similar age and sex as the control group were collected. White blood cells, platelets, and lymphocytes were counted and CD4 and CD8 T lymphocytes were evaluated by flow cytometry.

**Results**

The number of white blood cells, lymphocytes, and platelets were reduced significantly in COVID-19 patients (P < 0.05). The difference in CD4:CD8 ratio, CD4 T-cell frequency, CD8 T-cell frequency, and CD4 mean fluorescence intensity (MFI) was not significant between COVID-19 patients and healthy individuals (P > 0.05); however, the CD8 MFI increased significantly in COVID-19 infected patients (P < 0.05).

**Conclusion**

Although, there is no significant difference in the ratio of CD4 to CD8 between two groups, the expression level of CD8 in COVID-19 patients was significantly higher than the normal individuals. This result suggested that the cellular immune responses triggered by COVID-19 infection were developed through overexpression of CD8 and hyperactivation of cytotoxic T lymphocytes.


Sanjay R. Parikh, Jeffrey R. Avansino, Andre AS. Dick, Brianna K. Enriquez, Jeremy M. Geiduschek, Lynn D. Martin, Ruth A. McDonald, Suzanne M. Yandow, Danielle M. Zerr, Jeffrey G. Ojemann
Collaborative Multi-Disciplinary Incident Command at Seattle Children’s Hospital for Rapid Preparatory Pediatric Surgery Countermeasures to the COVID-19 Pandemic

Journal of the American College of Surgeons, 2020

Abstract:
Washington State was the first U.S. state to have a patient test positive for COVID-19. Prior to this, our children’s hospital proactively implemented an incident command structure which allowed for collaborative creation of safety measures, policies and procedures for both patients, families, staff and providers. Although the treatment and protective standards are continuously evolving, this commentary shares our thoughts on how an institution, specifically surgical services may develop collaborative process improvement to accommodate for rapid and ongoing change. Specific changes outlined include [1] early establishment of incident command [2] personal protective equipment conservation, [3] workforce safety, [4] surgical and ambulatory patient triage, and [5] optimization of trainee education. Please note that the contents of this manuscript are shared in the interest of providing collaborative information and are under continuous development as our regional situation changes. We recognize the limitations of this commentary and do not suggest that our approaches represent validated best practices.

https://doi.org/10.1016/j.jamcollsurg.2020.04.012

Elliot B. Tapper, Sumeet K. Asrani

COVID-19 pandemic will have a long-lasting impact on the quality of cirrhosis care

Journal of Hepatology, 2020

Abstract:
Summary
The coronavirus disease 2019 (COVID-19) pandemic has shattered the meticulously developed processes by which we delivered quality care for patients with cirrhosis. Care has been transformed by the crisis, but enduring lessons have been learned. In this article, we review how COVID-19 will impact cirrhosis care. We describe how this impact unfolds over 3 waves; i) an intense period with prioritized high-acuity care with delayed elective procedures and routine care during physical distancing, ii) a challenging ‘return to normal’ following the end of physical distancing, with increased emergent decompensations, morbidity, and systems of care overwhelmed by the backlog of deferred care, and iii) a protracted period of suboptimal outcomes characterized by missed diagnoses, progressive disease and loss to follow-up. We outline the concrete steps required to preserve the quality of care provided to patients with cirrhosis. This includes an intensification of the preventative care provided to patients with compensated cirrhosis, proactive chronic disease management, robust telehealth programs, and a reorganization of care delivery to provide a full service of care with flexible clinical staffing. Managing the pandemic of a serious chronic disease in the midst of a global infectious pandemic is challenging. It is incumbent upon the entire healthcare establishment to be strong enough to weather the storm. Change is needed.

https://doi.org/10.1016/j.jhep.2020.04.005
Diabetes self-management amid COVID-19 pandemic

Abstract:

Background and aims

COVID-19 pandemic has challenged the physician-centered approach of diabetes care in India that is primarily based on routine clinic visits. We aim to review the various aspects of patient-centered care via diabetes self-management education based on available literature.

Methods

This is a narrative review using Pubmed, EMBASE and Google Scholar search till March 29, 2020. Search terms were “COVID-19”, “diabetes self-care”, “diabetes self-management education”, “DSME”, “diabetes self-management in India”, “diabetes self-care in India” and “DSME in India”.

Results

We have discussed an educational plan on diabetes self-management that can be adopted for people with diabetes mellitus in our country amid the ongoing pandemic. We have also identified the barriers to diabetes self-management in the current scenario and suggested possible solutions to overcome those.

Conclusions

We have reemphasized the need for a simultaneous patient-centered approach in routine diabetes care that has to be coordinated by a multidisciplinary team amid the ongoing COVID-19 pandemic.

https://doi.org/10.1016/j.dsx.2020.04.013

COVID-19: A case series to support radiographer preliminary clinical evaluation

Abstract:

N. Woznitza, A. Nair, S.S. Hare

Lessons learned from 9/11: Mental health perspectives on the COVID-19 pandemic

Abstract:

Jonathan DePierro, Sandra Lowe, Craig Katz
The COVID-19 pandemic will likely lead to high rates of PTSD, depression, and substance misuse among survivors, victims’ families, medical workers, and other essential personnel. The mental health response to the 9/11/01 terrorist attacks, culminating in a federally-funded health program, provides a template for how providers may serve affected individuals. Drawing on the 9/11 experience, we highlight effective prevention measures, likely short and long-term treatment needs, vulnerable subgroups, and important points of divergence between 9/11 and the COVID-19 pandemic. Mental health monitoring, early identification of at-risk individuals, and treatment irrespective of financial barriers are essential for minimizing chronic distress.

https://doi.org/10.1016/j.psychres.2020.113024

Huilan Tu, Sheng Tu, Shiqi Gao, Anwen Shao, Jifang Sheng

The epidemiological and clinical features of COVID-19 and lessons from this global infectious public health event

Journal of Infection, 2020

Abstract:

Coronavirus disease 2019 (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and represents a potentially fatal disease of great global public health importance. As of March 26, 2020, the outbreak of COVID-19 has resulted in 462,801 confirmed cases and 20,839 deaths globally, which is more than those caused by SARS and Middle East respiratory syndrome (MERS) in 2003 and 2013, respectively. The epidemic has posed considerable challenges worldwide. Under a strict mechanism of massive prevention and control, China has seen a rapid decrease in new cases of coronavirus; however, the global situation remains serious. Additionally, the origin of COVID-19 has not been determined and no specific antiviral treatment or vaccine is currently available. Based on the published data, this review systematically discusses the etiology, epidemiology, clinical characteristics, and current intervention measures related to COVID-19 in the hope that it may provide a reference for future studies and aid in the prevention and control of the COVID-19 epidemic.


Jesi Kim, Todd Thomsen, Naomi Sell, Andrew J. Goldsmith

Abdominal and testicular pain: An atypical presentation of COVID-19

The American Journal of Emergency Medicine, 2020

https://doi.org/10.1016/j.ajem.2020.03.052

Shamai A. Grossman

The day after COVID-19

The American Journal of Emergency Medicine, 2020
Bo XU, Cun-yu FAN, An-lu WANG, Yi-long ZOU, Yi-han YU, Cong HE, Wen-guang XIA, Ji-xian ZHANG, Qing MIAO

Suppressed T cell-mediated immunity in patients with COVID-19: a clinical retrospective study in Wuhan, China

Journal of Infection, 2020

Abstract:

Importance

An ongoing outbreak of COVID-19 has exhibited significant threats around the world. We found a significant decrease of T lymphocyte subsets and an increase of inflammatory cytokines of hospitalized patients with COVID-19 in clinical practice.

Methods

We conducted a retrospective, single-center observational study of in-hospital adult patients with confirmed COVID-19 in Hubei Provincial Hospital of traditional Chinese and Western medicine (Wuhan, China) by Mar 1, 2020. Demographic, clinical, laboratory information, especially T lymphocyte subsets and inflammatory cytokines were reported. For patients who died or discharge from hospital, the associations of T lymphocyte subsets on admission were evaluated by univariate logistic regression with odds ratios (ORs) and 95% confidence intervals (CIs), warning values to predict in-hospital death were assessed by Receiver Operator Characteristic (ROC) curves.

Results

A total of 187 patients were enrolled in our study from Dec 26, 2019 to Mar 1, 2020, of whom 145 were survivors (discharge= 117) or non-survivors (in-hospital death=28). All patients exhibited a significant drop of T lymphocyte subsets counts with remarkably increasing concentrations of SAA, CRP, IL-6, and IL-10 compared to normal values. The median concentrations of SAA and CRP in critically-ill patients were nearly 4- and 10-fold than those of mild-ill patients, respectively. As the severity of COVID-19 getting worse, the counts of T lymphocyte drop lower.28 patients died in hospital, the median lymphocyte, CD3+ T-cell, CD4+ T-cell, CD8+ T-cell and B-cell were significantly lower than other patients. Lower counts (uL) of T lymphocyte subsets lymphocyte (<500), CD3+T-cell (<200), CD4+ T-cell (<100), CD8+ T-cell (<100) and B-cell (<50) were associated with higher risks of in-hospital death of COVID-19. The warning values to predict in-hospital death of lymphocyte, CD3+ T-cell, CD4+ T-cell, CD8+ T-cell, and B-cell were 559, 235, 104, 85 and 82, respectively.

Conclusion

We find a significant decrease of T lymphocyte subset is positively correlated with in-hospital death and severity of illness. The decreased levels of T lymphocyte subsets reported in our study were similar with SARS but not common among other virus infection, which may be possible biomarkers for early diagnosis of COVID-19. Our findings may shed light on early warning of high risks of mortality and help early intervention and treatment of COVID-19.
Cara L. Wallace, Stephanie P. Wladkowski, Allison Gibson, Patrick White

**Grief During the COVID-19 Pandemic: Considerations for Palliative Care Providers**

Journal of Pain and Symptom Management, 2020

**Abstract:**

The COVID-19 pandemic is anticipated to continue spreading widely across the globe throughout 2020. To mitigate the devastating impact of COVID-19, social distancing and visitor restrictions in healthcare facilities have been widely implemented. Such policies and practices, along with the direct impact of the spread of COVID-19, complicate issues of grief that are relevant to medical providers. We describe the relationship of the COVID-19 pandemic to anticipatory grief, disenfranchised grief, and complicated grief for individuals, families, and their providers. Further, we provide discussion regarding countering this grief through communication, advance care planning, and self-care practices. We provide resources for healthcare providers, in addition to calling on palliative care providers to consider their own role as a resource to other specialties during this public health emergency.


Dennis McGonagle, Kassem Sharif, Anthony O'Regan, Charlie Bridgewood

**The Role of Cytokines including Interleukin-6 in COVID-19 induced Pneumonia and Macrophage Activation Syndrome-Like Disease**

Autoimmunity Reviews, 2020

**Abstract:**

Severe COVID-19 associated pneumonia patients may exhibit features of systemic hyperinflammation designated under the umbrella term of macrophage activation syndrome (MAS) or cytokine storm, also known as secondary haemophagocytic lymphohistocytosis (sHLH). This is distinct from HLH associated with immunodeficiency states termed primary HLH—with radically different therapy strategies in both situations. COVID-19 infection with MAS typically occurs in subjects with adult respiratory distress syndrome (ARDS) and historically, non-survival in ARDS was linked to sustained IL-6 and IL-1 elevation. We provide a model for the classification of MAS to stratify the MAS-like presentation in COVID-19 pneumonia and explore the complexities of discerning ARDS from MAS. We discuss the potential impact of timing of anti-cytokine therapy on viral clearance and the impact of such therapy on intra-pulmonary macrophage activation and emergent pulmonary vascular disease.


Kaustuv Chatterjee, Kaushik Chatterjee, Arun Kumar, Subramanian Shankar
Healthcare impact of COVID-19 epidemic in India: A stochastic mathematical model

Medical Journal Armed Forces India, 2020

Abstract:

Background

In India, the SARS-CoV-2 COVID-19 epidemic has grown to 1251 cases and 32 deaths as on 30 Mar 2020. The healthcare impact of the epidemic in India was studied using a stochastic mathematical model.

Methods

A compartmental SEIR model was developed, in which the flow of individuals through compartments is modeled using a set of differential equations. Different scenarios were modeled with 1000 runs of Monte Carlo simulation each using MATLAB. Hospitalization, intensive care unit (ICU) requirements, and deaths were modeled on SimVoi software. The impact of nonpharmacological interventions (NPIs) including social distancing and lockdown on checking the epidemic was estimated.

Results

Uninterrupted epidemic in India would have resulted in more than 364 million cases and 1.56 million deaths with peak by mid-July. As per the model, at current growth rate of 1.15, India is likely to reach approximately 3 million cases by 25 May, implying 125,455 (±18,034) hospitalizations, 26,130 (±3298) ICU admissions, and 13,447 (±1819) deaths. This would overwhelm India's healthcare system. The model shows that with immediate institution of NPIs, the epidemic might still be checked by mid-April 2020. It would then result in 241,974 (±33,735) total infections, 10,214 (±1649) hospitalizations, 2121 (±334) ICU admissions, and 1081 (±169) deaths.

Conclusion

At the current growth rate of epidemic, India's healthcare resources will be overwhelmed by the end of May. With the immediate institution of NPIs, total cases, hospitalizations, ICU requirements, and deaths can be reduced by almost 90%.

https://doi.org/10.1016/j.mjafi.2020.03.022

Cuiyan Wang, Riyu Pan, Xiaoyang Wan, Yilin Tan, Linkang Xu, Roger S. McIntyre, Faith N. Choo, Bach Tran, Roger Ho, Vijay K. Sharma, Cyrus Ho

A longitudinal study on the mental health of general population during the COVID-19 epidemic in China

Brain, Behavior, and Immunity, 2020

Abstract:

In addition to being a public physical health emergency, Coronavirus disease 2019 (COVID-19) affected global mental health, as evidenced by panic-buying worldwide as cases soared. Little is
known about changes in levels of psychological impact, stress, anxiety and depression during this pandemic. This longitudinal study surveyed the general population twice - during the initial outbreak, and the epidemic's peak four weeks later, surveying demographics, symptoms, knowledge, concerns, and precautionary measures against COVID-19. There were 1738 respondents from 190 Chinese cities (1210 first-survey respondents, 861 s-survey respondents; 333 respondents participated in both). Psychological impact and mental health status were assessed by the Impact of Event Scale-Revised (IES-R) and the Depression, Anxiety and Stress Scale (DASS-21), respectively. IES-R measures PTSD symptoms in survivorship after an event. DASS-21 is based on tripartite model of psychopathology that comprise a general distress construct with distinct characteristics. This study found that there was a statistically significant longitudinal reduction in mean IES-R scores (from 32.98 to 30.76, p < 0.01) after 4 weeks. Nevertheless, the mean IES-R score of the first- and second-survey respondents were above the cut-off scores (>24) for PTSD symptoms, suggesting that the reduction in scores was not clinically significant. During the initial evaluation, moderate-to-severe stress, anxiety and depression were noted in 8.1%, 28.8% and 16.5%, respectively and there were no significant longitudinal changes in stress, anxiety and depression levels (p > 0.05). Protective factors included high level of confidence in doctors, perceived survival likelihood and low risk of contracting COVID-19, satisfaction with health information, personal precautionary measures. As countries around the world brace for an escalation in cases, Governments should focus on effective methods of disseminating unbiased COVID-19 knowledge, teaching correct containment methods, ensuring availability of essential services/commodities, and providing sufficient financial support.

https://doi.org/10.1016/j.bbi.2020.04.028

Hasraddin Guliyev

**Determining the spatial effects of COVID-19 using the spatial panel data model**

Spatial Statistics, 2020

**Abstract:**

This study investigates the propagation power and effects of the coronavirus disease 2019 (COVID-19) in light of published data. We examine the factors affecting COVID-19 together with the spatial effects, and use spatial panel data models to determine the relationship among the variables including their spatial effects. Using spatial panel models, we analyse the relationship between confirmed cases of COVID-19, deaths thereof, and recovered cases due to treatment. We accordingly determine and include the spatial effects in this examination after establishing the appropriate model for COVID-19. The most efficient and consistent model is interpreted with direct and indirect spatial effects.

https://doi.org/10.1016/j.spasta.2020.100443

Qing Deng, Bo Hu, Yao Zhang, Hao Wang, Xiaoyang Zhou, Wei Hu, Yuting Cheng, Jie Yan, Haiqin Ping, Qing Zhou

**Suspected myocardial injury in patients with COVID-19: Evidence from frontline clinical observation in Wuhan, China**

International Journal of Cardiology, 2020
Abstract:

Background

A novel coronavirus disease (COVID-19) in Wuhan has caused an outbreak and become a major public health issue in China and great concern from international community. Myocarditis and myocardial injury were suspected and may even be considered as one of the leading causes for death of COVID-19 patients. Therefore, we focused on the condition of the heart, and sought to provide firsthand evidence for whether myocarditis and myocardial injury were caused by COVID-19.

Methods

We enrolled patients with confirmed diagnosis of COVID-19 retrospectively and collected heart-related clinical data, mainly including cardiac imaging findings, laboratory results and clinical outcomes. Serial tests of cardiac markers were traced for the analysis of potential myocardial injury/myocarditis.

Results

112 COVID-19 patients were enrolled in our study. There was evidence of myocardial injury in COVID-19 patients and 14 (12.5%) patients had presented abnormalities similar to myocarditis. Most of patients had normal levels of troponin at admission, that in 42 (37.5%) patients increased during hospitalization, especially in those that died. Troponin levels were significantly increased in the week preceding the death. 15 (13.4%) patients have presented signs of pulmonary hypertension. Typical signs of myocarditis were absent on echocardiography and electrocardiogram.

Conclusions

The clinical evidence in our study suggested that myocardial injury is more likely related to systemic consequences rather than direct damage by the 2019 novel coronavirus. The elevation in cardiac markers was probably due to secondary and systemic consequences and can be considered as the warning sign for recent adverse clinical outcomes of the patients.

https://doi.org/10.1016/j.ijcard.2020.03.087

Maja Baretić

Case report of chloroquine therapy and hypoglycaemia in type 1 diabetes: What should we have in mind during the COVID-19 pandemic?


Abstract:

A type 1 diabetes patient experienced remission associated with chloroquine therapy while travelling to a malaria-endemic area. Chloroquine has immunomodulatory and hypoglycaemic effects and may become more frequently used due to the COVID-19 pandemic. Patients with type 1 diabetes treated with chloroquine should be monitored for hypoglycaemia, even after recovery.

https://doi.org/10.1016/j.dsx.2020.04.014

Ashish Yashwantrao Pawar
Combating Devastating COVID-19 by Drug Repurposing
International Journal of Antimicrobial Agents, 2020
https://doi.org/10.1016/j.ijantimicag.2020.105984

Andrea Cortegiani, Giulia Ingoglia, Mariachiara Ippolito, Antonino Giarratano, Sharon Einav

A systematic review on the efficacy and safety of chloroquine for the treatment of COVID-19
Journal of Critical Care, 2020

Abstract:

Purpose

COVID-19 (coronavirus disease 2019) is a public health emergency of international concern. As of this time, there is no known effective pharmaceutical treatment, although it is much needed for patient contracting the severe form of the disease. The aim of this systematic review was to summarize the evidence regarding chloroquine for the treatment of COVID-19.

Methods

PubMed, EMBASE, and three trial Registries were searched for studies on the use of chloroquine in patients with COVID-19.

Results

We included six articles (one narrative letter, one in-vitro study, one editorial, expert consensus paper, two national guideline documents) and 23 ongoing clinical trials in China. Chloroquine seems to be effective in limiting the replication of SARS-CoV-2 (virus causing COVID-19) in vitro.

Conclusions

There is rationale, pre-clinical evidence of effectiveness and evidence of safety from long-time clinical use for other indications to justify clinical research on chloroquine in patients with COVID-19. However, clinical use should either adhere to the Monitored Emergency Use of Unregistered Interventions (MEURI) framework or be ethically approved as a trial as stated by the World Health Organization. Safety data and data from high-quality clinical trials are urgently needed.

https://doi.org/10.1016/j.jcrc.2020.03.005

Stephen Moore, Elaine Gardiner

Point of Care and Intensive Care Lung Ultrasound: A Reference Guide for Practitioners During COVID-19
Radiography, 2020

Abstract:

Objectives
Current events with the recent COVID-19 outbreak are necessitating steep learning curves for the NHS workforce. Ultrasound, although not used in the diagnosis of COVID-19 may be utilised by practitioners at the point of care (POC) or on the intensive care units (ITUs) where rapid assessment of the lung condition may be required. The aim of this article was to review current literature surrounding the use of lung ultrasound in relation to COVID-19 and provide Sonographers with a quick and digestible reference guide for lung pathologies.

Key Findings

Ultrasound is being used in Italy and China to help review lung condition during the COVID-19 outbreak however not strictly as a diagnostic tool as Computed Tomography (CT) of the chest and chest radiographs are currently gold standard. Ultrasound is highly sensitive in the detection of multiple lung pathologies which can be demonstrated in conjunction with COVID-19 however to date there are no specific, nor pathognomonic findings which relate to COVID-19 on ultrasound.

Conclusion

Lung ultrasound is highly sensitive and can quickly and accurately review lung condition creating potential to assess for changes or resolution over time, especially in the ITU and POC setting. However it should not be used as a diagnostic tool for COVID-19 due to low specificity in relation to the virus.

Implications for practice

The adoption of lung ultrasound to monitor lung condition during the COVID-19 outbreak may reduce the need for serial exposure to ionising radiation on the wards and in turn reduce the number of radiographers required to attend infected wards and bays, protecting both patients and the workforce.

https://doi.org/10.1016/j.radi.2020.04.005

Cynthia Magro, J. Justin Mulvey, David Berlin, Gerard Nuovo, Steven Salvatore, Joanna Harp, Amelia Baxter-Stoltzfus, Jeffrey Laurence

**Complement associated microvascular injury and thrombosis in the pathogenesis of severe COVID-19 infection: A report of five cases**

Translational Research, 2020

**Abstract:**

Acute respiratory failure and a systemic coagulopathy are critical aspects of the morbidity and mortality characterizing infection with severe acute respiratory distress syndrome-associated coronavirus-2 (SARS-CoV-2), the etiologic agent of Coronavirus disease 2019 (COVID-19). We examined skin and lung tissues from 5 patients with severe COVID-19 characterized by respiratory failure (n=5) and purpuric skin rash (n=3). The pattern of COVID-19 pneumonitis was predominantly a pauci-inflammatory septal capillary injury with significant septal capillary mural and luminal fibrin deposition and permeation of the inter-alveolar septa by neutrophils. No viral cytopathic changes were observed and the diffuse alveolar damage (DAD) with hyaline membranes, inflammation, and type II pneumocyte hyperplasia, hallmarks of classic ARDS, were not prominent. These pulmonary findings were accompanied by significant deposits of terminal complement components C5b-9 (membrane attack complex), C4d, and mannose binding lectin (MBL)-
associated serine protease (MASP)2, in the microvasculature, consistent with sustained, systemic activation of the alternative and lectin-based complement pathways. The purpuric skin lesions similarly showed a pauci-inflammatory thrombogenic vasculopathy, with deposition of C5b-9 and C4d in both grossly involved and normally-appearing skin. In addition, there was co-localization of COVID-19 spike glycoproteins with C4d and C5b-9 in the inter-alveolar septa and the cutaneous microvasculature of two cases examined. In conclusion, at least a subset of sustained, severe COVID-19 may define a type of catastrophic microvascular injury syndrome mediated by activation of complement pathways and an associated procoagulant state. It provides a foundation for further exploration of the pathophysiologic importance of complement in COVID-19, and could suggest targets for specific intervention.

https://doi.org/10.1016/j.trsl.2020.04.007

Yongjian Zhu, Jingui Xie, Fengming Huang, Liqing Cao

**Association between short-term exposure to air pollution and COVID-19 infection: Evidence from China**

Science of The Total Environment, Volume 727, 2020

**Abstract:**

The novel coronavirus pneumonia, namely COVID-19, has become a global public health problem. Previous studies have found that air pollution is a risk factor for respiratory infection by carrying microorganisms and affecting body's immunity. This study aimed to explore the relationship between ambient air pollutants and the infection caused by the novel coronavirus. Daily confirmed cases, air pollution concentration and meteorological variables in 120 cities were obtained from January 23, 2020 to February 29, 2020 in China. We applied a generalized additive model to investigate the associations of six air pollutants (PM2.5, PM10, SO2, CO, NO2 and O3) with COVID-19 confirmed cases. We observed significantly positive associations of PM2.5, PM10, NO2 and O3 in the last two weeks with newly COVID-19 confirmed cases. A 10-μg/m3 increase (lag0–14) in PM2.5, PM10, NO2, and O3 was associated with a 2.24% (95% CI: 1.02 to 3.46), 1.76% (95% CI: 0.89 to 2.63), 6.94% (95% CI: 2.38 to 11.51), and 4.76% (95% CI: 1.99 to 7.52) increase in the daily counts of confirmed cases, respectively. However, a 10-μg/m3 increase (lag0–14) in SO2 was associated with a 7.79% decrease (95% CI: −14.57 to −1.01) in COVID-19 confirmed cases. Our results indicate that there is a significant relationship between air pollution and COVID-19 infection, which could partially explain the effect of national lockdown and provide implications for the control and prevention of this novel disease.

https://doi.org/10.1016/j.scitotenv.2020.138704

Anjana Rao Kavoor, Kripa Chakravarthy, Thomas John

**Remote consultations in the era of COVID-19 pandemic: Preliminary experience in a regional Australian public acute mental health care setting**

Asian Journal of Psychiatry, Volume 51, 2020

**Abstract:**
In the wake of the recent pandemic of Corona Virus Disease 2019 (COVID-19), with confirmed cases having crossed 750,000, health systems across the world are getting overwhelmed; making it strenuous to maintain essential health services. Several changes were implemented in our acute mental health care service using a collaborative approach to maintain a balance between preventive measures to ‘flatten the curve’ and to provide care to those who were in need. Mode of service delivery was changed predominantly to tele-medicine, amongst others. It was found to be a workable model, albeit further follow up will be required to better understand its viability and feasibility to withstand the COVID-19 cataclysm.

https://doi.org/10.1016/j.ajp.2020.102074

Yongli Zheng, Hong Xu, Ming Yang, Yilan Zeng, Hong Chen, Ru Liu, Qingfeng Li, Na Zhang, Dan Wang

Epidemiological characteristics and clinical features of 32 critical and 67 noncritical cases of COVID-19 in Chengdu

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background

In December 2019, Wuhan, China, experienced an outbreak of coronavirus (COVID-19). The number of cases has increased rapidly, but information on the clinical characteristics remains limited.

Objectives

This paper describes the epidemiological and clinical characteristics of COVID-19. Early detection and identification of critically ill patients is necessary to facilitate scientific classification and treatment.

Study design

This study included a retrospective, single-center case series of 99 consecutively hospitalized patients with confirmed COVID-19 at Chengdu Public Health Clinical Medical Center in Chengdu, China, from January 16 to February 20, 2020. The final date of follow-up was February 23, 2020. We collected and analyzed epidemiological, demographic, clinical, laboratory, radiological, and treatment data. We compared outcomes of critically ill patients and noncritically ill patients.

Results

Of the 99 hospitalized patients with COVID-19, the median age was 49 years (minimum, 3 months; maximum, 87 years) and 51 (52 %) were men; 42 (42 %) had traveled to or lived in Wuhan and 48 (49 %) had come into close contact with patients with new coronavirus pneumonia; 41 (41 %) patients had underlying disease. Common symptoms included fever (85 [86 %]), dry cough (84 [85 %]), and fatigue (72 [73 %]). We analyzed the clinical characteristics of patients. We expressed the measurement data as mean ± standard deviation. We collected data for age (49.39 ± 18.45 years), number of hospital days (12.32 ± 6.70 days), and laboratory indicators. We compared critically ill and noncritically ill patients: p-values for age, C-reactive protein, high-sensitivity troponin T, prothrombin time, fibrin degradation products, D-Dimer, and CD4+ count were p < 0.001; and p-
values for hospital days, white blood cell, neutrophil, lymphocyte, creatine kinase isoenzyme, myoglobin, N-terminal brain natriuretic peptide, and CD8+ count were p < 0.05.

Conclusions

We collected data from a single-center case series of 32 hospitalized patients who were critically ill with confirmed COVID-19 in Chengdu, China, and compared data with 67 noncritically ill patients. Elderly patients had chronic underlying diseases, notably cardiovascular disease. Higher C-reactive protein levels, higher levels of myocardial damage, and higher brain natriuretic peptide levels; lower white blood cells, neutrophils, and lymphocytes; and lower CD4 and CD8 counts could be used for early detection and identification of critically ill patients, and dynamic data observation was more important than at a single moment.

https://doi.org/10.1016/j.jcv.2020.104366

Yuwei Liu, Xuebei Du, Jing Chen, Yalei Jin, Li Peng, Harry H.X. Wang, Mingqi Luo, Ling Chen, Yan Zhao

Neutrophil-to-lymphocyte ratio as an independent risk factor for mortality in hospitalized patients with COVID-19

Journal of Infection, 2020

Abstract:

Background

Several studies have described the clinical characteristics of patients with novel coronavirus (SARS-CoV-2)-infected pneumonia (COVID-19), indicating severe patients tended to have higher neutrophil to lymphocyte ratio (NLR). Whether baseline NLR could be an independent predictor of in-hospital death in Chinese COVID-19 patients remains to be investigated.

Methods

A cohort of patients with COVID-19 admitted to the Zhongnan Hospital of Wuhan University from January 1 to February 29 was retrospectively analyzed. The baseline data of laboratory examinations, including NLR were collected. Univariate and multivariate logistic regression models were developed to assess the independent relationship between the baseline NLR and in-hospital all-cause death. A sensitivity analysis was performed by converting NLR from a continuous variable to a categorical variable according to tertile. Interaction and stratified analyses were conducted as well.

Results

245 COVID-19 patients were included in the final analyses, and the in-hospital mortality was 13.47%. Multivariate analysis demonstrated that there was 8% higher risk of in-hospital mortality for each unit increase in NLR (Odds ratio [OR] = 1.08; 95% confidence interval [95% CI], 1.01 to 1.14; P = 0.0147). Compared with patients in the lowest tertile, the NLR of patients in the highest tertile had a 15.04-fold higher risk of death (OR = 16.04; 95% CI, 1.14 to 224.95; P = 0.0395) after adjustment for potential confounders. Notably, the fully adjusted OR for mortality was 1.10 in males for each unit increase of NLR (OR = 1.10; 95% CI, 1.02 to 1.19; P = 0.016).

Conclusions
NLR is an independent risk factor of the in-hospital mortality for COVID-19 patients especially for male. Assessment of NLR may help identify high risk individuals with COVID-19.


Ruth Ellen Jones, Kareem R. Abdelfattah

**Virtual Interviews in the Era of COVID-19: A Primer for Applicants**

*Journal of Surgical Education, 2020*

**Abstract:**

**Problem**

The COVID-19 pandemic is an evolving crisis with widespread impact upon our medical system, including senior trainee travel for fellowship interviews. Numerous institutions have conscientiously deferred in-person interviews or virtual formats. Given the competitive nature of fellowship interviews, candidates may express concern that they are at a disadvantage in engaging in online meetings versus live, on-site interviews, and similarly may feel ill prepared to perform optimally during online interviews.

**Approach**

We draw upon our experience with online interview platforms in this guide for fellowship candidates who are rapidly adapting to new technology and styles associated with videoconference interviews so that they can best promote themselves for competitive positions.

https://doi.org/10.1016/j.jsurg.2020.03.020

Guoping Li, Xiang He, Lei Zhang, Qin Ran, Junyi Wang, Anying Xiong, Dehong Wu, Feng Chen, Jinlyu Sun, Christopher Chang

**Assessing ACE2 expression patterns in lung tissues in the pathogenesis of COVID-19**

*Journal of Autoimmunity, 2020*

**Abstract:**

It has been reported that SARS-CoV-2 may use ACE2 as a receptor to gain entry into human cells, in a way similar to that of SARS-CoV. Analyzing the distribution and expression level of ACE2 may therefore help reveal underlying mechanisms of viral susceptibility and post-infection modulation. In this study, we utilized previously uploaded information on ACE2 expression in various conditions including SARS-CoA to evaluate the role of ACE2 in SARS-CoV and extrapolate that to COVID-19. We found that the expression of ACE2 in healthy populations and patients with underlying diseases was not significantly different. However, based on the elevated expression of ACE2 in cigarette smokers, we speculate that long-term smoking may be a risk factor for COVID-19. Analysis of ACE2 in SARS-CoV infected cells suggests that ACE2 is not only a receptor but is also involved in post-infection regulation, including immune response, cytokine secretion, and viral genome replication. Moreover, we constructed Protein-protein interaction (PPI) networks and identified hub genes in viral activity and cytokine secretion. Our findings may help
clinicians and researchers gain more insight into the pathogenesis of SARS-CoV-2 and design therapeutic strategies for COVID-19.

https://doi.org/10.1016/j.jaut.2020.102463


**Chimeric Antigen Receptor T Cell Therapy During the COVID-19 Pandemic**

Biology of Blood and Marrow Transplantation, 2020

**Abstract:**

ABSTRACT

The COVID-19 pandemic has significantly impacted the delivery of cellular therapeutics, including chimeric antigen receptor (CAR) T cells. This impact has extended beyond patient care to include logistics, administration, and distribution of increasingly limited health care resources. Based on the collective experience of the CAR T Cell Consortium investigators, we review and address several questions and concerns regarding cellular therapy administration in the setting of COVID-19 and make general recommendations to address these issues. Specifically, we address (1) necessary resources for safe administration of cell therapies; (2) determinants of cell therapy utilization; (3) selection among patients with B cell non-Hodgkin lymphomas and B cell acute lymphocytic leukemia; (4) supportive measures during cell therapy administration; (5) use and prioritization of tocilizumab; and (6) collaborative care with referring physicians. These recommendations were carefully formulated with the understanding that resource allocation is of the utmost importance, and that the decision to proceed with CAR T cell therapy will require extensive discussion of potential risks and benefits. Although these recommendations are fluid, at this time it is our opinion that the COVID-19 pandemic should not serve as reason to defer CAR T cell therapy for patients truly in need of a potentially curative therapy.

https://doi.org/10.1016/j.bbmt.2020.04.008

Loris Roncon, Marco Zuin, Gianluca Rigatelli, Giovanni Zuliani

**Diabetic patients with COVID-19 infection are at higher risk of ICU admission and poor short-term outcome**

Journal of Clinical Virology, Volume 127, 2020

**Abstract:**

Background


Objectives

To assess the risk of ICU admission and mortality risk in diabetic COVID-19 patients.
Study design

A database search was conducted to identify studies comparing diabetic COVID-19 patients hospitalized in intensive care unit (ICU) and those reporting the overall mortality of these patients published up to March 25, 2020 within MEDLINE, Scopus and Web of Science. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed in abstracting data and assessing validity. Quality assessment was performed using the Newcastle-Ottawa quality assessment scale. The main outcome was the risk of ICU admission in diabetic patients with COVID-19 infection while the second was the mortality risk in overall diabetic COVID-19 patients. Data were pooled using the Mantel-Haenszel random effects models with odds ratio (OR) as the effect measure with the related 95% confidence interval (CI). Statistical heterogeneity between groups was measured using the Higgins I2 statistic.

Results

Among 1382 patients (mean age 51.5 years, 798 males), DM resulted to be the second more frequent comorbidities. Diabetic patients resulted to have a significant increased risk of ICU admission (OR: 2.79, 95% CI 1.85–4.22, p < 0.0001, I2 = 46%). In 471 patients (mean age 56.6 years, 294 males) analysed for the secondary outcome diabetic subjects resulted to be at higher mortality risk (OR 3.21, 95% CI 1.82–5.64, p < 0.0001, I2 = 16%).

Conclusions

Diabetic patients with COVID-19 patients are at higher risk of ICU admission and show an higher mortality risk.

https://doi.org/10.1016/j.jcv.2020.104354

Fusi-Schmidhauser Tanja, Preston Nancy, Nikola Keller, Gamondi Claudia

Conservative management of Covid-19 patients – emergency palliative care in action

Journal of Pain and Symptom Management, 2020

https://doi.org/10.1016/j.jpainsymman.2020.03.030

Qingxian Cai, Deliang Huang, Hong Yu, Zhibin Zhu, Zhang Xia, Yinan Su, Zhiwei Li, Guangde Zhou, Jizhou Gou, Jiuxin Qu, Yan Sun, Yinxia Liu, Qing He, Jun Chen, Lei Liu, Lin Xu

Characteristics of Liver Tests in COVID-19 Patients

Journal of Hepatology, 2020

Abstract:

Background & Aims

Recent data on the coronavirus disease 2019 (COVID-19) outbreak caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has begun to shine light on the impact of the disease on the liver. But no studies to date have systematically described liver test abnormalities in
patients with COVID-19. We evaluated the clinical characteristics of COVID-19 in patients with abnormal liver tests.

Methods

Clinical records and laboratory results were obtained from 417 laboratory-confirmed COVID-19 patients who were admitted to the only referral hospital in Shenzhen, China from January 11 to February 21, 2020 and followed up to March 7, 2020. Information of clinical features of patients with abnormal liver tests were collected for analysis.

Results

Of 417 patients with COVID-19, 318 (76.3%) had abnormal liver test results and 90 (21.5%) had liver injury during hospitalization. The presence of abnormal liver tests became more pronounced during hospitalization within 2 weeks, with 49 (23.4%), 31 (14.8%), 24 (11.5%) and 51 (24.4%) patients raising liver enzyme levels to more than 3 times of upper limit units in alanine aminotransferase, aspartate aminotransferase, total bilirubin and gamma-glutamyl transferase, respectively. Patients with abnormal liver test of hepatocellular type or mixed type at admission had higher odds of progressing to severe disease (odds ratios (OR)=2.73, 95% confidence interval (CI) 1.19-6.3, and 4.44, 95% CI 1.93-10.23, respectively). The use of lopinavir/ritonavir was also found to lead to increased odds of liver injury (OR from 4.44 to 5.03, both P<0.01).

Conclusion

Patients with abnormal liver tests had higher risks of progressing to severe disease. The detrimental effects on liver injury mainly related to certain medications used during hospitalization, should be monitored and evaluated frequently.

https://doi.org/10.1016/j.jhep.2020.04.006

Shengmei Niu, Sijia Tian, Jing Lou, Xuqin Kang, Luxi Zhang, Huixin Lian, Jinjun Zhang

Clinical Characteristics of Older Patients Infected with COVID-19: A Descriptive Study

Archives of Gerontology and Geriatrics, 2020

Abstract:

Objectives

Since the outbreak of 2019 novel coronavirus (COVID-19), which has spread in the world rapidly. Population have a susceptibility to COVID-19, older people were more susceptible to have a variety diseases than younger, including COVID-19 infection with no doubt. This study focused on older patients with COVID-19 infection and analyzed the epidemiological and clinical characteristics of them.

Methods

We collected information on confirmed older patient transferred by Beijing Emergency Medical Service (EMS) to the designated hospitals from Jan 20 to Feb 29, 2020. The information including demographic, epidemiological, clinical, classification of severity and outcomes. All cases were categorized into three groups and compared the difference between aged 50-64 years, 65-79 years and older than 80 years.
Results

56.7% of elderly confirmed patients were male, fever (78.3%), cough (56.7%), dyspnea (30.0%), and fatigue (23.3%) were common symptoms of COVID-19 infection. Classification of severity has statistically significant differences between the three groups, compared with middle-aged patients and aged 65-79 years group, older than 80 years group had significant statistical differences in contacted to symptomatic case in 14 days. As of Feb 29, 38.3% patients had discharged and 53.3% patients remained in hospital in our study, the fatality of COVID-19 infection in elderly was 8.3%.

Conclusions

The COVID-19 infection is generally susceptible with a relatively high fatality rate in older patients, we should pay more attention to the elderly patients with COVID-19 infection.

https://doi.org/10.1016/j.archger.2020.104058

Mathew Philip, Sundeep Lakhtakia, Rakesh Aggarwal, Kaushal Madan, Vivek Saraswat, Govind Makharia

Joint Guidance from SGEI, ISG and INASL for Gastroenterologists and Gastrointestinal Endoscopists on the Prevention, Care, and Management of Patients With COVID-19

Journal of Clinical and Experimental Hepatology, 2020

Abstract:

Coronavirus disease 2019 (COVID-19), which started in December 2019 in China, has resulted in a pandemic leading to significant morbidity and mortality across the globe. Although it mainly causes respiratory symptoms, respiratory failure and death due to multiorgan failure, there is evolving evidence to suggest gastrointestinal (GI) and liver involvement by this virus. Owing to this, health-care professionals taking care of GI and liver diseases are also at an increased risk of getting exposed. Hence, there is a need for protocols to be prepared to guide the handling of COVID-19 patients by the GI and liver specialists, as well as to manage the pre-existing GI and liver diseases during the ongoing pandemic. We present here the guidelines prepared jointly by the three Indian professional bodies in the field of GI diseases, namely the Society of Gastrointestinal Endoscopy of India, Indian Society of Gastroenterology, and Indian National Association for the Study of the Liver.

https://doi.org/10.1016/j.jceh.2020.04.001


Planning and coordination of the radiological response to the coronavirus disease 2019 (COVID-19) pandemic: the Singapore experience

Clinical Radiology, 2020

Abstract:
Coronavirus disease 2019 (COVID-19) has spread fast and extensively around the world, with significant mortality and morbidity. As this is a respiratory infection, chest radiography and computed tomography (CT) are important imaging techniques in the work-up of this disease. Given its highly infectious nature, cross-infection within the healthcare setting and radiology departments needs to be addressed actively and prevented. We describe the response of radiology departments in Singapore to this pandemic, in terms of diagnosis, re-configuration of the department, re-organisation and segregation of staff, infection control, managerial, and leadership issues.

https://doi.org/10.1016/j.crad.2020.03.028

Marvi Cheema, Helya Aghazadeh, Samir Nazarali, Andrew Ting, Jennifer Hodges, Alexandra McFarlane, Jamil N. Kanji, Nathan Zelyas, Karim F. Damji, Carlos Solarte

Keratoconjunctivitis as the initial medical presentation of the novel coronavirus disease 2019 (COVID-19)

Canadian Journal of Ophthalmology, 2020

Abstract:

We present a case of coronavirus disease 2019 (COVID-19) with an initial medical presentation of keratoconjunctivitis, the first such reported case in North America. The patient’s primary symptom was a red eye with watery discharge, though she did have mild respiratory symptoms, without fever. She was diagnosed with keratoconjunctivitis; evolving corneal findings were characterized through repeat visits to ophthalmology. A conjunctival swab of the affected eye was positive for the SAR-CoV-2 virus. This case emphasizes the importance of ensuring that first-line health care providers, including ophthalmologists, optometrists, emergency physicians, and family physicians, consider COVID-19 on the differential for any patient with recent travel who presents with acute conjunctivitis. Having a high index of suspicion with this presentation would allow for appropriate precautions to be taken to prevent further spread of COVID-19.

https://doi.org/10.1016/j.jcjo.2020.03.003

Maria Nicola, Niamh O’Neill, Catrin Sohrabi, Mehdi Khan, Maliha Agha, Riaz Agha

Evidence Based Management Guideline for the COVID-19 Pandemic - Review article

International Journal of Surgery, 2020

Abstract:

COVID-19 has now been declared a pandemic. To date, COVID-19 has affected over 944,181 people worldwide, resulting in over 47,312 reported deaths. Numerous preventative strategies and non-pharmaceutical interventions have been employed to mitigate the spread of disease including careful infection control, the isolation of patients, and social distancing. Management is predominantly focused on the provision of supportive care, with oxygen therapy representing the major treatment intervention. Medical therapy involving corticosteroids and antivirals have also been encouraged as part of critical management schemes. However, there is at present no specific antiviral recommended for the treatment of COVID-19, and no vaccine is currently available.
Despite the strategic implementation of these measures, the number of new reported cases continues to rise at a profoundly alarming rate. As new findings emerge, there is an urgent need for up-to-date management guidelines. In response to this call, we review what is currently known regarding the management of COVID-19, and offer an evidence-based review of current practice.

https://doi.org/10.1016/j.ijsu.2020.04.001

Marco Alifano, Pietro Alifano, Patricia Forgez, Antonio Iannelli

**Renin-angiotensin system at the heart of COVID-19 pandemic**

Biochimie, 2020

**Abstract:**

Significant aspects of COVID-19 pandemic remain obscure. Angiotensin converting enzyme 2 (ACE2), a component of the renin-angiotensin system, whose expression dominates on lung alveolar epithelial cells, is the human cell receptor of SARS-CoV-2, the causative agent of COVID-19. We strongly encourage the concept that thorough considerations of receptor-ligand interactions should be kept at the heart of scientific debate on infection. In this idea, the whole renin-angiotensin system has to be evaluated. We hypothesize that factors related to ethnicity, environment, behaviors, associated illness, and medications involving this complex system are probably responsible for situations regarded as anomalous from both an epidemiological and a clinical point of view, but, taken together, such factors may explain most of the aspects of current outbreak. We decided to use the analogy of a play and speculate about the possible impact in this tragedy of 1) air pollution via the interference of nitrogen dioxide on ACE2 expression; 2) the dual role of nicotine; 3) the hypothetical involvement of ACE2 polymorphisms, the relationships of which with ethnic factors and susceptibility to cardiovascular disease seems intriguing; 4) the impact on the severity of infection of hypertension and related medications acting on the renin/angiotensin system, and, finally, 5) the possible helpful role of chloroquine, thanks to its capacity of modifying ACE2 affinity to the viral spike protein by altering glycosylation. This hypothesis paper is an urgent call for the development of research programs that aim at questioning whether the putative protagonists of this tragedy are real-life actors in COVID-19.

https://doi.org/10.1016/j.biochi.2020.04.008

Jiangtao Liu, Ji Zhou, Jinxi Yao, Xiuxia Zhang, Lanyu Li, Xiaocheng Xu, Xiaotao He, Bo Wang, Shihua Fu, Tingting Niu, Jun Yan, Yanjun Shi, Xiaowei Ren, Jingping Niu, Weihao Zhu, Sheng Li, Bin Luo, Kai Zhang

**Impact of meteorological factors on the COVID-19 transmission: A multi-city study in China**

Science of The Total Environment, Volume 726, 2020

**Abstract:**

The purpose of the present study is to explore the associations between novel coronavirus disease 2019 (COVID-19) case counts and meteorological factors in 30 provincial capital cities of China. We compiled a daily dataset including confirmed case counts, ambient temperature (AT), diurnal temperature range (DTR), absolute humidity (AH) and migration scale index (MSI) for each city
during the period of January 20th to March 2nd, 2020. First, we explored the associations between COVID-19 confirmed case counts, meteorological factors, and MSI using non-linear regression. Then, we conducted a two-stage analysis for 17 cities with more than 50 confirmed cases. In the first stage, generalized linear models with negative binomial distribution were fitted to estimate city-specific effects of meteorological factors on confirmed case counts. In the second stage, the meta-analysis was conducted to estimate the pooled effects. Our results showed that among 13 cities that have less than 50 confirmed cases, 9 cities locate in the Northern China with average AT below 0 °C, 12 cities had average AH below 4 g/m3, and one city (Haikou) had the highest AH (14.05 g/m3). Those 17 cities with 50 and more cases accounted for 90.6% of all cases in our study. Each 1 °C increase in AT and DTR was related to the decline of daily confirmed case counts, and the corresponding pooled RRs were 0.80 (95% CI: 0.75, 0.85) and 0.90 (95% CI: 0.86, 0.95), respectively. For AH, the association with COVID-19 case counts were statistically significant in lag 07 and lag 014. In addition, we found the all these associations increased with accumulated time duration up to 14 days. In conclusions, meteorological factors play an independent role in the COVID-19 transmission after controlling population migration. Local weather condition with low temperature, mild diurnal temperature range and low humidity likely favor the transmission.

https://doi.org/10.1016/j.scitotenv.2020.138513

Jiang Zhifeng, Aiqiao Feng, Tao Li

Consistency analysis of COVID-19 nucleic acid tests and the changes of lung CT

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background

COVID-19, the latest outbreak of infectious disease, has caused huge medical challenges to China and the entire globe. No unified diagnostic standard has been formulated. The initial diagnosis remains based on the positive of nucleic acid tests. However, early nucleic acid tests were identified to be negative in some patients, whereas the patients exhibited characteristic CT changes of lung, and positive test results appeared after repeated nucleic acid tests, having caused the failure to diagnose these patients early. The study aimed to delve into the relationships between initial nucleic acid testing and early lung CT changes in patients with COVID-19.

Method

In accordance with the latest COVID-19 diagnostic criteria, 69 patients diagnosed with COVID-19 treated in the infected V ward of Xiaogan Central Hospital from 2020/1/25 to 2020/2/6 were retrospectively analyzed. The consistency between the first COVID-19 nucleic acid test positive and lung CT changes was studied. In addition, the sensitivity and specificity of CT and initial nucleic acid were studied.

Result

The Kappa coefficient of initial nucleic acid positive changes and lung CT changes was −1.52. With a positive nucleic acid test as the gold standard, the sensitivity of lung CT was 12.00 %, 95 % CI: 4.6–24.3; with the changes of CT as the gold standard, the sensitivity of nucleic acid positive was 30.16 %, 95 % CI: 19.2–43.0.
Conclusion

The consistency between the initial positive nucleic acid test and the CT changes in the lungs is poor; low sensitivity was achieved for initial nucleic acid detection and CT changes.

https://doi.org/10.1016/j.jcv.2020.104359

B. Robson

Computers and viral diseases. Preliminary bioinformatics studies on the design of a synthetic vaccine and a preventative peptidomimetic antagonist against the SARS-CoV-2 (2019-nCoV, COVID-19) coronavirus

Computers in Biology and Medicine, Volume 119, 2020

Abstract:

This paper concerns study of the genome of the Wuhan Seafood Market isolate believed to represent the causative agent of the disease COVID-19. This is to find a short section or sections of viral protein sequence suitable for preliminary design proposal for a peptide synthetic vaccine and a peptidomimetic therapeutic, and to explore some design possibilities. The project was originally directed towards a use case for the Q-UEL language and its implementation in a knowledge management and automated inference system for medicine called the BioIngine, but focus here remains mostly on the virus itself. However, using Q-UEL systems to access relevant and emerging literature, and to interact with standard publically available bioinformatics tools on the Internet, did help quickly identify sequences of amino acids that are well conserved across many coronaviruses including 2019-nCoV. KRSFIEDLLFNKV was found to be particularly well conserved in this study and corresponds to the region around one of the known cleavage sites of the SARS virus that are believed to be required for virus activation for cell entry. This sequence motif and surrounding variations formed the basis for proposing a specific synthetic vaccine epitope and peptidomimetic agent. The work can, nonetheless, be described in traditional bioinformatics terms, and readily reproduced by others, albeit with the caveat that new data and research into 2019-nCoV is emerging and evolving at an explosive pace. Preliminary studies using molecular modeling and docking, and in that context the potential value of certain known herbal extracts, are also described.

https://doi.org/10.1016/j.compiomed.2020.103670

Hao Jin, Ligong Lu, Junwei Liu, Min Cui

Complex emergencies of COVID-19: management and experience in Zhuhai, China

International Journal of Antimicrobial Agents, 2020

Abstract:

The impact of communicable diseases (infectious diseases) on human health is obvious. The sudden outbreak of COVID-19 (Corona Virus Disease 2019) has made people realise the threat of communicable diseases to mankind. As a city of many migrants, Zhuhai Special Economic Zone experienced great challenges brought about by the COVID-19 epidemic. Experience has been acquired from all aspects of this. A highly reactive, multifunctional and efficient emergency
management system should be established, and the significance of information communication
should be fully understood for the future.

https://doi.org/10.1016/j.ijantimicag.2020.105961

Fei Zhou, Ting Yu, Ronghui Du, Guohui Fan, Ying Liu, Zhibo Liu, Jie Xiang, Yeming Wang, Bin
Song, Xiaoying Gu, Lulu Guan, Yuan Wei, Hui Li, Xudong Wu, Jiuyang Xu, Shengjin Tu, Yi
Zhang, Hua Chen, Bin Cao

Clinical course and risk factors for mortality of adult inpatients with COVID-19
in Wuhan, China: a retrospective cohort study

The Lancet, Volume 395, Issue 10229, 2020, Pages 1054-1062

Abstract:

Summary

Background

Since December, 2019, Wuhan, China, has experienced an outbreak of coronavirus disease 2019
(COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Epidemic
ological and clinical characteristics of patients with COVID-19 have been reported but risk
factors for mortality and a detailed clinical course of illness, including viral shedding, have not been
well described.

Methods

In this retrospective, multicentre cohort study, we included all adult inpatients (≥18 years old) with
laboratory-confirmed COVID-19 from Jinyintan Hospital and Wuhan Pulmonary Hospital (Wuhan,
China) who had been discharged or had died by Jan 31, 2020. Demographic, clinical, treatment, and
laboratory data, including serial samples for viral RNA detection, were extracted from electronic
medical records and compared between survivors and non-survivors. We used univariable and
multivariable logistic regression methods to explore the risk factors associated with in-hospital
death.

Findings

191 patients (135 from Jinyintan Hospital and 56 from Wuhan Pulmonary Hospital) were included
in this study, of whom 137 were discharged and 54 died in hospital. 91 (48%) patients had a
comorbidity, with hypertension being the most common (58 [30%] patients), followed by diabetes
(36 [19%] patients) and coronary heart disease (15 [8%] patients). Multivariable regression showed
increasing odds of in-hospital death associated with older age (odds ratio 1·10, 95% CI 1·03–1·17,
per year increase; p=0.0043), higher Sequential Organ Failure Assessment (SOFA) score (5·65,
2·61–12·23; p<0·0001), and d-dimer greater than 1 μg/mL (18·42, 2·64–128·55; p=0·0033) on
admission. Median duration of viral shedding was 20·0 days (IQR 17·0–24·0) in survivors, but
SARS-CoV-2 was detectable until death in non-survivors. The longest observed duration of viral
shedding in survivors was 37 days.

Interpretation

The potential risk factors of older age, high SOFA score, and d-dimer greater than 1 μg/mL could
help clinicians to identify patients with poor prognosis at an early stage. Prolonged viral shedding

provides the rationale for a strategy of isolation of infected patients and optimal antiviral interventions in the future.

Funding

Chinese Academy of Medical Sciences Innovation Fund for Medical Sciences; National Science Grant for Distinguished Young Scholars; National Key Research and Development Program of China; The Beijing Science and Technology Project; and Major Projects of National Science and Technology on New Drug Creation and Development.

https://doi.org/10.1016/S0140-6736(20)30566-3


Highlights of traditional Chinese medicine frontline expert advice in the China national guideline for COVID-19

European Journal of Integrative Medicine, 2020

Abstract:

Introduction

The World Health Organization has declared the coronavirus disease (COVID-19) as a pandemic on 11 March 2020, after the number of confirmed cases outside China increased 13-fold. As the epicentre of the initial outbreak, China has been updating the National COVID-19 Diagnostic and Treatment Guideline with up-to-date information about the disease. To facilitate the implementation of integrative Chinese–Western Medicine in COVID-19 management, Traditional Chinese medicine (TCM) has been recommended in recent editions of the national guideline.

Methods

The national guideline summarised the opinions and frontline experience of medical experts across the country to provide by far the best management for COVID-19. We extracted the case definition and clinical classifications of COVID-19 in China along with relevant TCM treatments cited in the seventh edition of the guideline, with an intend to disseminate practical information to TCM practitioners and researchers around the world.

Results

We presented the most recent case definition, clinical classifications, and relevant TCM treatments of COVID-19 in accordance to recommendations of the Chinese guideline. TCM treatments are stratified into two groups based on patients’ disease status. Four types of Chinese patent medicines are recommended for suspected COVID-19 cases. Several herbal formulae are recommended for confirmed COVID-19 cases according to their clinical classification and TCM pattern diagnoses. Two herbal formulae are also recommended for rehabilitation of recovering cases.

Conclusion

To control the waves of COVID-19 outbreak, countries must ensure the adherence of their citizens to local public health measures. Medical professionals should diagnose and treat patients according to up-to-date guidelines. Future evaluation of the outcomes of implementing TCM recommendations will strengthen the evidence base for COVID-19 management for the sake of public health and the internationalisation of TCM.
O.M. Murray, J.M. Bisset, P.J. Gilligan, M.M. Hannan, J.G. Murray

Respirators and surgical facemasks for COVID-19: implications for MRI
Clinical Radiology, 2020
https://doi.org/10.1016/j.crad.2020.03.029

Kai Liu, Ying Chen, Ruzheng Lin, Kunyuan Han

Clinical features of COVID-19 in elderly patients: A comparison with young and middle-aged patients
Journal of Infection, 2020

Abstract:

Background

Due to the general susceptibility of new coronaviruses, the clinical characteristics and outcomes of elderly and young patients may be different.

Objective

To analyze the clinical characteristics of elderly patients with 2019 new-type coronavirus pneumonia (COVID-19).

Methods

This is a retrospective study of patients with new coronavirus pneumonia (COVID-19) who were hospitalized in Hainan Provincial People's Hospital from January 15, 2020 to February 18, 2020. Compare the clinical characteristics of elderly with Young and Middle-aged patients.

Results

A total of 56 patients were enrolled: 18 elderly patients (32.14%), and 38 young and middle-aged patients (67.86%). The most common symptoms in both groups were fever, followed by cough and sputum. Four patients in the elderly group received negative pressure ICU for mechanical ventilation, and five patients in the young and middle-aged group. One patient died in the elderly group (5.56%), and two patients died in the young and middle-aged group (5.26%). The PSI score of the elderly group was higher than that of the young and middle-aged group (P < 0.001). The proportion of patients with PSI grades IV and V was significantly higher in the elderly group than in the young and middle-aged group (P < 0.05). The proportion of multiple lobe involvement in the elderly group was higher than that in the young and middle-aged group (P < 0.001), and there was no difference in single lobe lesions between the two groups. The proportion of lymphocytes in the elderly group was significantly lower than that in the young and middle-aged group (P < 0.001), and the C-reactive protein was significantly higher in the young group (P < 0.001). The Lopinavir and Ritonavir Tablets, Chinese medicine, oxygen therapy, and mechanical ventilation were statistically different in the elderly group and the young and middle-aged group, and the P values were all <0.05.
Interpretation

The mortality of elderly patients with COVID-19 is higher than that of young and middle-aged patients, and the proportion of patients with PSI grade IV and V is significantly higher than that of young and middle-aged patients. Elderly patients with COVID-19 are more likely to progress to severe disease.

Keywords: Clinical feature; COVID-19; Elderly patients; Young and middle-aged patients

https://doi.org/10.1016/j.jinf.2020.03.005

Anoop Misra

**Doctors and healthcare workers at frontline of COVID 19 epidemic: Admiration, a pat on the back, and need for extreme caution**


https://doi.org/10.1016/j.dsx.2020.03.006

Joseph D. Forrester, Aussama K. Nassar, Paul M. Maggio, Mary T. Hawn

**Precautions for Operating Room Team Members During the COVID-19 Pandemic**

Journal of the American College of Surgeons, 2020

**Abstract:**

**Background**

The novel coronavirus SARS-CoV-2 (COVID-19) can infect healthcare workers. We developed an institutional algorithm to protect operating room team members during the COVID-19 pandemic and rationally conserve personal protective equipment (PPE).

**Study Design**

An interventional platform (operating room, interventional suite, and endoscopy) PPE taskforce was convened by the hospital and medical school leadership and tasked with developing a common algorithm for PPE use, to be used throughout the interventional platform. In conjunction with our infectious disease experts, we developed our guidelines based on potential patterns of spread, risk of exposure, and conservation of PPE.

**Results**

A decision tree algorithm describing our institutional guidelines for precautions for operating room team members was created. This algorithm is based on urgency of operation, anticipated viral burden at the surgical site, opportunity for a procedure to aerosolize virus, and likelihood a patient could be infected based on symptoms and testing.

**Conclusions**
Despite COVID-19 being a new threat, we have shown that by developing an easy-to-follow decision tree algorithm for the interventional platform teams, we can ensure optimal health care worker safety.

https://doi.org/10.1016/j.jamcollsurg.2020.03.030

Hong Liu, Li-Ling Wang, Si-Jia Zhao, Joanne Kwak-Kim, Gil Mor, Ai-Hua Liao

**Why are pregnant women susceptible to COVID-19? An immunological viewpoint**

Journal of Reproductive Immunology, Volume 139, 2020

**Abstract:**

The 2019 novel coronavirus disease (COVID-19) was first detected in December 2019 and became epidemic in Wuhan, Hubei Province, China. COVID-19 has been rapidly spreading out in China and all over the world. The virus causing COVID-19, SARS-CoV-2 has been known to be genetically similar to severe acute respiratory syndrome coronavirus (SARS-CoV) but distinct from it. Clinical manifestation of COVID-19 can be characterized by mild upper respiratory tract infection, lower respiratory tract infection involving non-life threatening pneumonia, and life-threatening pneumonia with acute respiratory distress syndrome. It affects all age groups, including newborns, to the elders. Particularly, pregnant women may be more susceptible to COVID-19 since pregnant women, in general, are vulnerable to respiratory infection. In pregnant women with COVID-19, there is no evidence for vertical transmission of the virus, but an increased prevalence of preterm deliveries has been noticed. The COVID-19 may alter immune responses at the maternal-fetal interface, and affect the well-being of mothers and infants. In this review, we focused on the reason why pregnant women are more susceptible to COVID-19 and the potential maternal and fetal complications from an immunological viewpoint.

https://doi.org/10.1016/j.jri.2020.103122

Mark P. Lythgoe, Paul Middleton

**Ongoing Clinical Trials for the Management of the COVID-19 Pandemic**

Trends in Pharmacological Sciences, 2020

**Abstract:**

COVID-19 has rapidly developed into a worldwide pandemic with a significant health and economic burden. There are currently no approved treatments or preventative therapeutic strategies. Hundreds of clinical studies have been registered with the intention of discovering effective treatments. Here, we review currently registered interventional clinical trials for the treatment and prevention of COVID-19 to provide an overall summary and insight into the global response.

https://doi.org/10.1016/j.tips.2020.03.006

Abid Haleem, Mohd Javaid, Raju Vaishya, Abhishek Vaish
Effects of COVID-19 pandemic in the field of orthopaedics
Journal of Clinical Orthopaedics and Trauma, 2020
https://doi.org/10.1016/j.jcot.2020.03.015

Ronan Thibault, Didier Quilliot, Philippe Seguin, Fabienne Tamion, Stéphane Schneider, Pierre Déchelotte

Nutrition Clinique et Métabolisme, 2020

Abstract:

The viral epidemic caused by the new Coronavirus SARS-CoV-2 is responsible for the new Coronavirus disease -2019 (Covid-19). This epidemic imposes upheavals in our organizations in healthcare centres which should not obscure the importance of nutritional care. The nutritional diagnosis and the early nutritional care management of Covid-19 infected patients must be integrated into the overall therapeutic strategy, as with any acute situation of acute illness. This document was prepared by the French speaking Society for Clinical Nutrition and Metabolism (SFNCM) in the emergency of the health crisis by a group of experts, based on the national and international recommendations available in the field of malnutrition, critical illness, metabolic stress and intensive care medicine on March 23, 2020. We hope that this article will bring to healthcare professionals, especially those not specialized in nutrition, useful landmarks to help them to manage hospitalized patients, infected or not by Covid-19 in the context of epidemic and intrahospital confinement.

https://doi.org/10.1016/j.nupar.2020.03.001

Pu Yang, Xia Wang, Pin Liu, Cong Wei, Bingyan He, Junwen Zheng, Dongchi Zhao
Clinical characteristics and risk assessment of newborns born to mothers with COVID-19

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is causing an outbreak of pneumonia in Wuhan, Hubei Province, China, and other international areas.

Objective

Here, we report the clinical characteristics of the newborns delivered by SARS-CoV-2 infected pregnant women.

Methods

We prospectively collected and analyzed the clinical features, laboratory data and outcomes of 7 newborns delivered by SARS-CoV-2 infected pregnant women in Zhongnan Hospital of Wuhan University during January 20 to January 29, 2020.

Results

4 of the 7 newborns were late preterm with gestational age between 36 weeks and 37 weeks, and the other 3 were full-term infants. The average birth weight was 2096 ± 660 g. All newborns were born without asphyxia. 2 premature infants performed mild grunting after birth, but relieved rapidly with non-invasive continuous positive airway pressure (nCPAP) ventilation. 3 cases had chest X-ray, 1 was normal and 2 who were supported by nCPAP presented mild neonatal respiratory distress syndrome (NRDS). Samples of pharyngeal swab in 6 cases, amniotic fluid and umbilical cord blood in 4 cases were tested by qRT-PCR, and there was no positive result of SARS-CoV-2 nucleic acid in all cases.

Conclusions

The current data show that the infection of SARS-CoV-2 in late pregnant women does not cause adverse outcomes in their newborns, however, it is necessary to separate newborns from mothers immediately to avoid the potential threats.

https://doi.org/10.1016/j.jcv.2020.104356

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges


Abstract:

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; previously provisionally named 2019 novel coronavirus or 2019-nCoV) disease (COVID-19) in China at the end of 2019 has caused a large global outbreak and is a major public health issue. As of 11 February 2020, data from the World Health Organization (WHO) have shown that more than 43 000
confirmed cases have been identified in 28 countries/regions, with >99% of cases being detected in China. On 30 January 2020, the WHO declared COVID-19 as the sixth public health emergency of international concern. SARS-CoV-2 is closely related to two bat-derived severe acute respiratory syndrome-like coronaviruses, bat-SL-CoVZC45 and bat-SL-CoVZXC21. It is spread by human-to-human transmission via droplets or direct contact, and infection has been estimated to have mean incubation period of 6.4 days and a basic reproduction number of 2.24–3.58. Among patients with pneumonia caused by SARS-CoV-2 (novel coronavirus pneumonia or Wuhan pneumonia), fever was the most common symptom, followed by cough. Bilateral lung involvement with ground-glass opacity was the most common finding from computed tomography images of the chest. The one case of SARS-CoV-2 pneumonia in the USA is responding well to remdesivir, which is now undergoing a clinical trial in China. Currently, controlling infection to prevent the spread of SARS-CoV-2 is the primary intervention being used. However, public health authorities should keep monitoring the situation closely, as the more we can learn about this novel virus and its associated outbreak, the better we can respond.

https://doi.org/10.1016/j.ijantimicag.2020.105924

Bhumi Shah, Palmi Modi, Sneha R. Sagar

In silico studies on therapeutic agents for COVID-19: Drug repurposing approach

Life Sciences, Volume 252, 2020

Abstract:

Aims

The severe acute respiratory syndrome coronavirus 2, better known as COVID-19 has become the current health concern to the entire world. Initially appeared in Wuhan, China around December 2019, it had spread to almost 187 countries due to its high contagious nature. Precautionary measures remain the sole obliging tactic to cease the person to person transmissions till any effective method of treatment or vaccine is developed. Amidst the pandemic, research and development of new molecule is labour-intensive and tedious process. Drug repurposing is the concept of identifying therapeutically potent molecule from the library of pre-existing molecules.

Materials and methods

In the present study, 61 molecules that are already being used in clinics or under clinical scrutiny as antiviral agents are surveyed via docking study. Docking study was performed using Maestro interface (Schrödinger Suite, LLC, NY).

Key findings

Out of these 61 molecules, 37 molecules were found to interact with >2 protein structures of COVID-19. The docking results indicate that amongst the reported molecules, HIV protease inhibitors and RNA-dependent RNA polymerase inhibitors showed promising features of binding to COVID-19 enzyme. Along with these, Methisazone an inhibitor of protein synthesis, CGP42112A an angiotensin AT2 receptor agonist and ABT450 an inhibitor of the non-structural protein 3-4A might become convenient treatment option as well against COVID-19.

Significance
Nirmal Kandel, Stella Chungong, Abbas Omaar, Jun Xing

**Health security capacities in the context of COVID-19 outbreak: an analysis of International Health Regulations annual report data from 182 countries**

The Lancet, Volume 395, Issue 10229, 2020, Pages 1047-1053

**Abstract:**

**Summary**

**Background**

Public health measures to prevent, detect, and respond to events are essential to control public health risks, including infectious disease outbreaks, as highlighted in the International Health Regulations (IHR). In light of the outbreak of 2019 novel coronavirus disease (COVID-19), we aimed to review existing health security capacities against public health risks and events.

**Methods**

We used 18 indicators from the IHR State Party Annual Reporting (SPAR) tool and associated data from national SPAR reports to develop five indices: (1) prevent, (2) detect, (3) respond, (4) enabling function, and (5) operational readiness. We used SPAR 2018 data for all of the indicators and categorised countries into five levels across the indices, in which level 1 indicated the lowest level of national capacity and level 5 the highest. We also analysed data at the regional level (using the six geographical WHO regions).

**Findings**

Of 182 countries, 52 (28%) had prevent capacities at levels 1 or 2, and 60 (33%) had response capacities at levels 1 or 2. 81 (45%) countries had prevent capacities and 78 (43%) had response capacities at levels 4 or 5, indicating that these countries were operationally ready. 138 (76%) countries scored more highly in the detect index than in the other indices. 44 (24%) countries did not have an effective enabling function for public health risks and events, including infectious disease outbreaks (7 [4%] at level 1 and 37 [20%] at level 2). 102 (56%) countries had level 4 or level 5 enabling function capacities in place. 32 (18%) countries had low readiness (2 [1%] at level 1 and 30 [17%] at level 2), and 104 (57%) countries were operationally ready to prevent, detect, and control an outbreak of a novel infectious disease (66 [36%] at level 4 and 38 [21%] at level 5).

**Interpretation**

Countries vary widely in terms of their capacity to prevent, detect, and respond to outbreaks. Half of all countries analysed have strong operational readiness capacities in place, which suggests that an effective response to potential health emergencies could be enabled, including to COVID-19. Findings from local risk assessments are needed to fully understand national readiness capacities in relation to COVID-19. Capacity building and collaboration between countries are needed to strengthen global readiness for outbreak control.

**Funding**

The drug repurposing approach provide an insight about the therapeutics that might be helpful in treating corona virus disease.

https://doi.org/10.1016/j.jfs.2020.117652
COVID-19: Melatonin as a potential adjuvant treatment

Rui Zhang, Xuebin Wang, Leng Ni, Xiao Di, Baitao Ma, Shuai Niu, Changwei Liu, Russel J. Reiter

Life Sciences, Volume 250, 2020

Abstract:

This article summarizes the likely benefits of melatonin in the attenuation of COVID-19 based on its putative pathogenesis. The recent outbreak of COVID-19 has become a pandemic with tens of thousands of infected patients. Based on clinical features, pathology, the pathogenesis of acute respiratory disorder induced by either highly homogenous coronaviruses or other pathogens, the evidence suggests that excessive inflammation, oxidation, and an exaggerated immune response very likely contribute to COVID-19 pathology. This leads to a cytokine storm and subsequent progression to acute lung injury (ALI)/acute respiratory distress syndrome (ARDS) and often death. Melatonin, a well-known anti-inflammatory and anti-oxidative molecule, is protective against ALI/ARDS caused by viral and other pathogens. Melatonin is effective in critical care patients by reducing vessel permeability, anxiety, sedation use, and improving sleeping quality, which might also be beneficial for better clinical outcomes for COVID-19 patients. Notably, melatonin has a high safety profile. There is significant data showing that melatonin limits virus-related diseases and would also likely be beneficial in COVID-19 patients. Additional experiments and clinical studies are required to confirm this speculation.


Catrin Sohrabi, Zaid Alsafi, Niamh O'Neill, Mehdi Khan, Ahmed Kerwan, Ahmed Al-Jabir, Christos Iosifidis, Riaz Agha

International Journal of Surgery, Volume 76, 2020, Pages 71-76

Abstract:

An unprecedented outbreak of pneumonia of unknown aetiology in Wuhan City, Hubei province in China emerged in December 2019. A novel coronavirus was identified as the causative agent and was subsequently termed COVID-19 by the World Health Organization (WHO). Considered a relative of severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), COVID-19 is caused by a betacoronavirus named SARS-CoV-2 that affects the lower respiratory tract and manifests as pneumonia in humans. Despite rigorous global containment and quarantine efforts, the incidence of COVID-19 continues to rise, with 90,870 laboratory-confirmed cases and over 3,000 deaths worldwide. In response to this global outbreak, we summarise the current state of knowledge surrounding COVID-19.
Darren P. Mareiniss

The impending storm: COVID-19, pandemics and our overwhelmed emergency departments
The American Journal of Emergency Medicine, 2020
https://doi.org/10.1016/j.ajem.2020.03.033

Huanhuan Liu, Fang Liu, Jinning Li, Tingting Zhang, Dengbin Wang, Weishun Lan

Clinical and CT imaging features of the COVID-19 pneumonia: Focus on pregnant women and children
Journal of Infection, Volume 80, Issue 5, 2020, Pages e7-e13

Abstract:

Background
The ongoing outbreak of COVID-19 pneumonia is globally concerning. We aimed to investigate the clinical and CT features in the pregnant women and children with this disease, which have not been well reported.

Methods
Clinical and CT data of 59 patients with COVID-19 from January 27 to February 14, 2020 were retrospectively reviewed, including 14 laboratory-confirmed non-pregnant adults, 16 laboratory-confirmed and 25 clinically-diagnosed pregnant women, and 4 laboratory-confirmed children. The clinical and CT features were analyzed and compared.

Findings
Compared with the non-pregnant adults group (n = 14), initial normal body temperature (9 [56%] and 16 [64%]), leukocytosis (8 [50%] and 9 [36%]) and elevated neutrophil ratio (14 [88%] and 20 [80%]), and lymphopenia (9 [56%] and 16 [64%]) were more common in the laboratory-confirmed (n = 16) and clinically-diagnosed (n = 25) pregnant groups. Totally 614 lesions were detected with predominantly peripheral and bilateral distributions in 54 (98%) and 37 (67%) patients, respectively. Pure ground-glass opacity (GGO) was the predominant presence in 94/131 (72%) lesions for the non-pregnant adults. Mixed consolidation and complete consolidation were more common in the laboratory-confirmed (70/161 [43%]) and clinically-diagnosed (153/322 [48%]) pregnant groups than 37/131 (28%) in the non-pregnant adults (P = 0.007, P < 0.001). GGO with reticulation was less common in 9/161 (6%) and 16/322 (5%) lesions for the two pregnant groups than 24/131 (18%) for the non-pregnant adults (P = 0.001, P < 0.001). The pulmonary involvement in children with COVID-19 was mild with a focal GGO or consolidation. Twenty-three patients underwent follow-up CT, revealing progression in 9/13 (69%) at 3 days whereas improvement in 8/10 (80%) at 6–9 days after initial CT scans.

Interpretation
Atypical clinical findings of pregnant women with COVID-19 could increase the difficulty in initial identification. Consolidation was more common in the pregnant groups. The clinically-diagnosed
cases were vulnerable to more pulmonary involvement. CT was the modality of choice for early detection, severity assessment, and timely therapeutic effects evaluation for the cases with epidemic and clinical features of COVID-19 with or without laboratory confirmation. The exposure history and clinical symptoms were more helpful for screening in children versus chest CT.

https://doi.org/10.1016/j.jinf.2020.03.007

Xiao-Ai Zhang, Hang Fan, Run-Zi Qi, Wei Zheng, Kui Zheng, Jian-Hang Gong, Li-Quen Fang, Wei Liu

Importing coronavirus disease 2019 (COVID-19) into China after international air travel

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101620

Tim Dargaville, Kirsten Spann, Mathew Celina

Opinion to address the personal protective equipment shortage in the global community during the COVID-19 outbreak

Polymer Degradation and Stability, Volume 176, 2020

Abstract:
The current COVID-19 pandemic is stretching both the global supply for face masks and personal protective equipment (PPE). Production capacity is severely limited in many countries. This is a call for the R&D community, particularly to those in the polymer degradation and stability field. We have not only an opportunity but an obligation to engage and collaborate with virology and biomedical experts. We require comparative R&D for extended, reuse and recyclability options. There is urgent need for large scale institutional approaches and methods that can be quickly applied locally by non-experts with limited resources.

https://doi.org/10.1016/j.polymdegradstab.2020.109162

Zili Zhou, Ning Zhao, Yan Shu, Shengbo Han, Bin Chen, Xiaogang Shu

Effect of gastrointestinal symptoms on patients infected with COVID-19

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.03.020

Amr H. Sawalha, Ming Zhao, Patrick Coit, Qianjin Lu

Epigenetic dysregulation of ACE2 and interferon-regulated genes might suggest increased COVID-19 susceptibility and severity in lupus patients

Clinical Immunology, Volume 215, 2020
Abstract:
Infection caused by SARS-CoV-2 can result in severe respiratory complications and death. Patients with a compromised immune system are expected to be more susceptible to a severe disease course. In this report we suggest that patients with systemic lupus erythematosus might be especially prone to severe COVID-19 independent of their immunosuppressed state from lupus treatment. Specifically, we provide evidence in lupus to suggest hypomethylation and overexpression of ACE2, which is located on the X chromosome and encodes a functional receptor for the SARS-CoV-2 spike glycoprotein. Oxidative stress induced by viral infections exacerbates the DNA methylation defect in lupus, possibly resulting in further ACE2 hypomethylation and enhanced viremia. In addition, demethylation of interferon-regulated genes, NFκB, and key cytokine genes in lupus patients might exacerbate the immune response to SARS-CoV-2 and increase the likelihood of cytokine storm. These arguments suggest that inherent epigenetic dysregulation in lupus might facilitate viral entry, viremia, and an excessive immune response to SARS-CoV-2. Further, maintaining disease remission in lupus patients is critical to prevent a vicious cycle of demethylation and increased oxidative stress, which will exacerbate susceptibility to SARS-CoV-2 infection during the current pandemic. Epigenetic control of the ACE2 gene might be a target for prevention and therapy in COVID-19.

https://doi.org/10.1016/j.clim.2020.108410

Razvigor Darlenski, Nikolai Tsankov

Covid-19 pandemic and the skin - What should dermatologists know?
Clinics in Dermatology, 2020

Abstract:
The World has changed dramatically since the COVID-19 pandemic began. Together with our social, occupational, and personal life, the new corona virus poses novel challenges for all physicians, including dermatologists. Despite the virus not being dermatotropic, several skin conditions have emerged, mainly as a result of prolonged contact to personal protective equipment and excessive personal hygiene. Pressure injury, contact dermatitis, itch, pressure urticaria, and exacerbation of pre-existing skin diseases, including seborrheic dermatitis and acne, have been described. We have focused on the dermatologic aspects of COVID-19 infection, so that dermatologist may be aware of the skin complications and the preventive measures to be taken in the COVID-19 pandemic.

https://doi.org/10.1016/j.clindermatol.2020.03.012

Dimitrios Giannis, Ioannis A. Ziogas, Panagiota Gianni

Coagulation disorders in coronavirus infected patients: COVID-19, SARS-CoV-1, MERS-CoV and lessons from the past
Journal of Clinical Virology, Volume 127, 2020

Abstract:
Coronavirus disease 2019 (COVID-19) or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a novel coronavirus strain disease, has recently emerged in China and rapidly spread worldwide. This novel strain is highly transmittable and severe disease has been reported in up to 16% of hospitalized cases. More than 600,000 cases have been confirmed and the number of deaths is constantly increasing. COVID-19 hospitalized patients, especially those suffering from severe respiratory or systemic manifestations, fall under the spectrum of the acutely ill medical population, which is at increased venous thromboembolism risk. Thrombotic complications seem to emerge as an important issue in patients infected with COVID-19. Preliminary reports on COVID-19 patients’ clinical and laboratory findings include thrombocytopenia, elevated D-dimer, prolonged prothrombin time, and disseminated intravascular coagulation. As the pandemic is spreading and the whole picture is yet unknown, we highlight the importance of coagulation disorders in COVID-19 infected patients and review relevant data of previous coronavirus epidemics caused by the severe acute respiratory syndrome coronavirus 1 (SARS-CoV-1) and the Middle East Respiratory Syndrome coronavirus (MERS-CoV).

https://doi.org/10.1016/j.jcv.2020.104362

Awadhesh Kumar Singh, Ritesh Gupta, Amerta Ghosh, Anoop Misra

**Diabetes in COVID-19: Prevalence, pathophysiology, prognosis and practical considerations**

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 4, 2020, Pages 303-310

**Abstract:**

**Background and aims**

High prevalence of diabetes makes it an important comorbidity in patients with COVID-19. We sought to review and analyze the data regarding the association between diabetes and COVID-19, pathophysiology of the disease in diabetes and management of patients with diabetes who develop COVID-19 infection.

**Methods**

PubMed database and Google Scholar were searched using the key terms ‘COVID-19’, ‘SARS-CoV-2’, ‘diabetes’, ‘antidiabetic therapy’ up to April 2, 2020. Full texts of the retrieved articles were accessed.

**Results**

There is evidence of increased incidence and severity of COVID-19 in patients with diabetes. COVID-19 could have effect on the pathophysiology of diabetes. Blood glucose control is important not only for patients who are infected with COVID-19, but also for those without the disease. Innovations like telemedicine are useful to treat patients with diabetes in today’s times.

https://doi.org/10.1016/j.dsx.2020.04.004

**Active constituents and mechanisms of Respiratory Detox Shot, a traditional Chinese medicine prescription, for COVID-19 control and prevention: Network-molecular docking-LC–MSE analysis**

Journal of Integrative Medicine, 2020

**Abstract:**

**Objective**

Lung-toxin Dispelling Formula No. 1, referred to as Respiratory Detox Shot (RDS), was developed based on a classical prescription of traditional Chinese medicine (TCM) and the theoretical understanding of herbal properties within TCM. Therapeutic benefits of using RDS for both disease control and prevention, in the effort to contain the coronavirus disease 2019 (COVID-19), have been shown. However, the biochemically active constituents of RDS and their mechanisms of action are still unclear. The goal of the present study is to clarify the material foundation and action mechanism of RDS.

**Methods**

To conduct an analysis of RDS, an integrative analytical platform was constructed, including target prediction, protein–protein interaction (PPI) network, and cluster analysis; further, the hub genes involved in the disease-related pathways were identified, and the their corresponding compounds were used for in vitro validation of molecular docking predictions. The presence of these validated compounds was also measured in samples of the RDS formula to quantify the abundance of the biochemically active constituents. In our network pharmacological study, a total of 26 bioinformatic programs and databases were used, and six networks, covering the entire Zang–fu viscera, were constructed to comprehensively analyze the intricate connections among the compounds–targets–disease pathways-meridians of RDS.

**Results**

For all 1071 known chemical constituents of the nine ingredients in RDS, identified from established TCM databases, 157 passed drug-likeness screening and led to 339 predicted targets in the constituent–target network. Forty-two hub genes with core regulatory effects were extracted from the PPI network, and 134 compounds and 29 crucial disease pathways were implicated in the target–constituent–disease network. Twelve disease pathways attributed to the Lung–Large Intestine meridians, with six and five attributed to the Kidney–Urinary Bladder and Stomach–Spleen meridians, respectively. One-hundred and eighteen candidate constituents showed a high binding affinity with SARS-coronavirus-2 3-chymotrypsin-like protease (3CLpro), as indicated by molecular docking using computational pattern recognition. The in vitro activity of 22 chemical constituents of RDS was validated using the 3CLpro inhibition assay. Finally, using liquid chromatography mass spectrometry in data-independent analysis mode, the presence of seven out of these 22 constituents was confirmed and validated in an aqueous decoction of RDS, using reference standards in both non-targeted and targeted approaches.

**Conclusion**
RDS acts primarily in the Lung–Large Intestine, Kidney–Urinary Bladder and Stomach–Spleen meridians, with other Zang-fu viscera strategically covered by all nine ingredients. In the context of TCM meridian theory, the multiple components and targets of RDS contribute to RDS’s dual effects of health-strengthening and pathogen-eliminating. This results in general therapeutic effects for early COVID-19 control and prevention.

https://doi.org/10.1016/j.joim.2020.03.004

Wei Wei, Dandan Zheng, Yu Lei, Shen Wu, Vivek Verma, Yongsheng Liu, Xueyan Wei, Jianping Bi, Desheng Hu, Guang Han

Radiotherapy Workflow and Protection Procedures During the Coronavirus Disease 2019 (COVID-19) Outbreak: Experience of the Hubei Cancer Hospital in Wuhan, China

Radiotherapy and Oncology, 2020

Abstract:

The epidemic of Coronavirus Disease 2019 (COVID-19) first broke out in Wuhan in December 2019, and reached its peak in Wuhan in February 2020. It became a major public health challenge for China, and evolved into a global pandemic in March 2020. For radiation oncology departments, the COVID-19 pandemic presents a unique challenge for disease protection and prevention for both patients and staff, owing to the weakened immune systems of cancer patients and the need to deliver timely and uninterrupted radiotherapy. At the Hubei Cancer Hospital, the only hospital in Wuhan that specializes in oncology, we organized an emergency infection control team to lead special efforts to combat COVID-19 during this challenging time. Under its lead, the following measures were implemented in the radiation oncology department: the radiotherapy clinic was divided into different infection control zones with varying levels of protection; special staff and patient infection control training sessions were conducted and appropriate measures deployed; daily symptom testing criteria were implemented for patients undergoing treatment; special rotating schedules and infection control methods were implemented for various staff members such as medical physicists/dosimetrists and radiation therapists; modified radiotherapy workflow and specialized treatment area cleaning and disinfection policies and procedures were designed and executed; and special medical waste disposal methods were implemented. We began treating patients using this new COVID-19 radiotherapy treatment workflow and infection control measures on January 30, 2020. During more than one and a half months of uninterrupted radiation oncology clinical operation through the worst of the Wuhan outbreak, no known COVID-19 infection occurred at our radiotherapy center to our patients or employees. This report may provide valuable information for other radiation oncology departments during this unprecedented public health crisis.

https://doi.org/10.1016/j.radonc.2020.03.029

Jia He, Bo Wu, Yaqin Chen, Jianjun Tang, Qiming Liu, Shenghua Zhou, Chen Chen, Qingwu Qin, Kang Huang, Jianlei Lv, Yan Chen, Daoquan Peng

Characteristic Electrocardiographic Manifestations in Patients With COVID-19

Canadian Journal of Cardiology, 2020
Abstract:
Cardiac involvement has been reported in patients with COVID-19, which may be reflected by electrocardiographic (ECG) changes. Two COVID-19 cases in our report exhibited different ECG manifestations as the disease caused deterioration. The first case presented temporary SIQIIITIII morphology followed by reversible nearly complete atrioventricular block, and the second demonstrated ST-segment elevation accompanied by multifocal ventricular tachycardia. The underlying mechanisms of these ECG abnormalities in the severe stage of COVID-19 may be attributed to hypoxia and inflammatory damage incurred by the virus.

Résumé
Des cas d’atteinte cardiaque se manifestant par des changements décelables à l’électrocardiogramme (ECG) ont été rapportés chez certains patients atteints de COVID-19. Nous exposons les cas de deux patients atteints de COVID-19 dont les ECG révèlent une détérioration de la fonction cardiaque causée par la maladie. Dans le premier cas, le patient a présenté temporairement un aspect SIQIIITIII suivi d’un bloc auriculo-ventriculaire quasi complet réversible, tandis que dans le deuxième cas, le patient a présenté une élévation du segment ST accompagnée d’une tachycardie ventriculaire multifocale. Ces anomalies électroencéphalographiques chez des patients gravement atteints de COVID-19 pourraient s’expliquer par l’hypoxie et les lésions inflammatoires provoquées par le virus.

https://doi.org/10.1016/j.cjca.2020.03.028

Pan Zhai, Yanbing Ding, Xia Wu, Junke Long, Yanjun Zhong, Yiming Li

The epidemiology, diagnosis and treatment of COVID-19
International Journal of Antimicrobial Agents, 2020

Abstract:
In December 2019, the outbreak of the novel coronavirus disease (COVID-19) in China spread worldwide, becoming an emergency of major international concern. SARS-CoV-2 infection causes clusters of severe respiratory illness similar to severe acute respiratory syndrome coronavirus. Human-to-human transmission via droplets, contaminated hands or surfaces has been described, with incubation times of 2-14 days. Early diagnosis, quarantine, and supportive treatments are essential to cure patients. This paper reviews the literature on all available information about the epidemiology, diagnosis, isolation and treatments of COVID-19. Treatments, including antiviral agents, chloroquine and hydroxychloroquine, corticosteroids, antibodies, convalescent plasma transfusion and vaccines, are discussed in this article. In addition, registered trials investigating treatment options for COVID-19 infection are listed.

https://doi.org/10.1016/j.ijantimicag.2020.105955

Kathy Leung, Joseph T Wu, Di Liu, Gabriel M Leung

First-wave COVID-19 transmissibility and severity in China outside Hubei after control measures, and second-wave scenario planning: a modelling impact assessment
The Lancet, 2020

Abstract:

Summary

Background

As of March 18, 2020, 13,415 confirmed cases and 120 deaths related to coronavirus disease 2019 (COVID-19) in mainland China, outside Hubei province—the epicentre of the outbreak—had been reported. Since late January, massive public health interventions have been implemented nationwide to contain the outbreak. We provide an impact assessment of the transmissibility and severity of COVID-19 during the first wave in mainland Chinese locations outside Hubei.

Methods

We estimated the instantaneous reproduction number (Rt) of COVID-19 in Beijing, Shanghai, Shenzhen, Wenzhou, and the ten Chinese provinces that had the highest number of confirmed COVID-19 cases; and the confirmed case-fatality risk (cCFR) in Beijing, Shanghai, Shenzhen, and Wenzhou, and all 31 Chinese provinces. We used a susceptible–infectious–recovered model to show the potential effects of relaxing containment measures after the first wave of infection, in anticipation of a possible second wave.

Findings

In all selected cities and provinces, the Rt decreased substantially since Jan 23, when control measures were implemented, and have since remained below 1. The cCFR outside Hubei was 0.98% (95% CI 0.82–1.16), which was almost five times lower than that in Hubei (5.91%, 5.73–6.09). Relaxing the interventions (resulting in Rt >1) when the epidemic size was still small would increase the cumulative case count exponentially as a function of relaxation duration, even if aggressive interventions could subsequently push disease prevalence back to the baseline level.

Interpretation

The first wave of COVID-19 outside of Hubei has abated because of aggressive non-pharmaceutical interventions. However, given the substantial risk of viral reintroduction, particularly from overseas importation, close monitoring of Rt and cCFR is needed to inform strategies against a potential second wave to achieve an optimal balance between health and economic protection.

Funding

Health and Medical Research Fund, Hong Kong, China.

https://doi.org/10.1016/S0140-6736(20)30746-7


COVID-19 pneumonia: A review of typical CT findings and differential diagnosis

Diagnostic and Interventional Imaging, 2020

Abstract:
The standard of reference for confirming COVID-19 relies on microbiological tests such as real-time polymerase chain reaction (RT-PCR) or sequencing. However, these tests might not be available in an emergency setting. Computed tomography (CT) can be used as an important complement for the diagnosis of COVID-19 pneumonia in the current epidemic context. In this review, we present the typical CT features of COVID-19 pneumonia and discuss the main differential diagnosis.

https://doi.org/10.1016/j.diii.2020.03.014

Charles E. Binkley, David S. Kemp

**Ethical Rationing of Personal Protective Equipment to Minimize Moral Residue During the COVID-19 Pandemic**

Journal of the American College of Surgeons, 2020

**Abstract:**

This paper proposes systems for the fair distribution of scarce resources to healthcare providers. It builds on classic ethical structures and adapts them to the equitable distribution of personal protective equipment (PPE) to clinicians at risk of contracting COVID-19. The paper also defines systems of allocation that are generally considered unethical and are to be avoided. We emphasize that policies must be transparent, collaborative, applied equally, and have a system of accountability. It is recognized that unless the supply of PPE is quickly replenished, or viable alternatives to traditional equipment are devised in the coming days to weeks, hospitals and healthcare systems will face the difficult task of rationing PPE to at risk clinicians. This paper suggests an ethical framework for that process.

https://doi.org/10.1016/j.jamcollsurg.2020.03.031

Ravi Jhaveri

**Echoes of 2009 Pandemic H1N1 Influenza with the COVID Pandemic**

Clinical Therapeutics, 2020

**Abstract:**

The SARS CoV-2 pandemic that has engulfed the globe has had incredible effects on health systems and economic activity. Social distancing and school closures have played a central role in public health efforts to counter the COVID-19 pandemic. The most recent global pandemic prior to COVID-19 was with 2009 pandemic H1N1 influenza. The course of events in 2009 offer some rich lessons that could be applied to the current COVID-19 pandemic. This commentary highlights some of the most relevant points and a discussion of possible outcomes with the COVID-19 pandemic.

https://doi.org/10.1016/j.clinthera.2020.04.003

Claudio Bernucci, Carlo Brembilla, Pierlorenzo Veiceschi
Effects of the COVID-19 Outbreak in Northern Italy: Perspectives from the Bergamo Neurosurgery Department

World Neurosurgery, 2020

https://doi.org/10.1016/j.wneu.2020.03.179


Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study

The Lancet, Volume 395, Issue 10227, 2020, Pages 871-877

Abstract:

Summary

Background

The novel coronavirus disease 2019 (COVID-19) epidemic has spread from China to 25 countries. Local cycles of transmission have already occurred in 12 countries after case importation. In Africa, Egypt has so far confirmed one case. The management and control of COVID-19 importations heavily rely on a country's health capacity. Here we evaluate the preparedness and vulnerability of African countries against their risk of importation of COVID-19.

Methods

We used data on the volume of air travel departing from airports in the infected provinces in China and directed to Africa to estimate the risk of importation per country. We determined the country's capacity to detect and respond to cases with two indicators: preparedness, using the WHO International Health Regulations Monitoring and Evaluation Framework; and vulnerability, using the Infectious Disease Vulnerability Index. Countries were clustered according to the Chinese regions contributing most to their risk.

Findings

Countries with the highest importation risk (ie, Egypt, Algeria, and South Africa) have moderate to high capacity to respond to outbreaks. Countries at moderate risk (ie, Nigeria, Ethiopia, Sudan, Angola, Tanzania, Ghana, and Kenya) have variable capacity and high vulnerability. We identified three clusters of countries that share the same exposure to the risk originating from the provinces of Guangdong, Fujian, and the city of Beijing, respectively.

Interpretation

Many countries in Africa are stepping up their preparedness to detect and cope with COVID-19 importations. Resources, intensified surveillance, and capacity building should be urgently prioritised in countries with moderate risk that might be ill-prepared to detect imported cases and to limit onward transmission.

Funding
EU Framework Programme for Research and Innovation Horizon 2020, Agence Nationale de la Recherche.

https://doi.org/10.1016/S0140-6736(20)30411-6

Haley Ehrlich, Mark McKenney, Adel Elkbuli

**Strategic planning and recommendations for healthcare workers during the COVID-19 pandemic**

The American Journal of Emergency Medicine, 2020

https://doi.org/10.1016/j.ajem.2020.03.057

Phan Thien Luan, Congo Tak-Shing Ching

**A Reusable Mask for Coronavirus Disease 2019 (COVID-19)**

Archives of Medical Research, 2020

**Abstract:**

The outbreak of Novel Coronavirus is causing an intensely feared globally. World Health Organization has even declared that it is a global health emergency. The simplest method to limit the spread of this new virus and for people to protect themselves as well as the others is to wear a mask in crowded places. The sudden increase demand on face mask has caused manufacturers the inability to not provide enough products in a short time and the situation properly will stay the same for a period of time. In this article, we aim to give an idea on how to save the number of face masks used but still provides the same protective values using a Cardiopulmonary resuscitation (CPR) mask and a common surgical facemask.

https://doi.org/10.1016/j.arcmed.2020.04.001

Qanta A. Ahmed, Ziad A. Memish

**The cancellation of mass gatherings (MGs)? Decision making in the time of COVID-19**

Travel Medicine and Infectious Disease, 2020

**Abstract:**

Our recommendation, as experts who have monitored health hazards at the Hajj for over 15 years, especially if the situation with COVID-19 continues to escalate globally is that Hajj 2020 will be at risk of being suspended and a means for Muslims to fulfill their rights in the future either personally or even by proxy need to be announced. The same holds true for the Summer 2020 Olympics in Japan and for many other MGs and large gatherings. Decisions in the time of COVID-19 will be closely followed and will be a blueprint for other mass gatherings.

https://doi.org/10.1016/j.tmaid.2020.101631
Lise Alschuler, Andrew Weil, Randy Horwitz, Paul Stamets, Ann Marie Chiasson, Robert Crocker, Victoria Maizes

**Integrative considerations during the COVID-19 pandemic**

EXPLORE, 2020

[https://doi.org/10.1016/j.explore.2020.03.007](https://doi.org/10.1016/j.explore.2020.03.007)

Kai Liu, Weitong Zhang, Yadong Yang, Jinpeng Zhang, Yunqian Li, Ying Chen

**Respiratory rehabilitation in elderly patients with COVID-19: A randomized controlled study**

Complementary Therapies in Clinical Practice, Volume 39, 2020

**Abstract:**

**Background**

Different degrees of disorders are reported in respiratory function, physical function and psychological function in patients with corona virus disease 2019 (COVID-19), especially in elderly patients. With the experience of improved and discharged COVID-19 patients, timely respiratory rehabilitation intervention may improve prognosis, maximize functional preservation and improve quality of life (QoL), but there lacks of studies worldwide exploring the outcome of this intervention.

**Objective**

To investigate the effects of 6-week respiratory rehabilitation training on respiratory function, QoL, mobility and psychological function in elderly patients with COVID-19.

**Methods**

This paper reported the findings of an observational, prospective, quasi-experimental study, which totally recruited 72 participants, of which 36 patients underwent respiratory rehabilitation and the rest without any rehabilitation intervention. The following outcomes were measured: pulmonary function tests including plethysmography and diffusing lung capacity for carbon monoxide (DLCO), functional tests (6-min walk distance test), Quality of life (QoL) assessments (SF-36 scores), activities of daily living (Functional Independence Measure, FIM scores), and mental status tests (SAS anxiety and SDS depression scores).

**Results**

After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups.

**Conclusions**

Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.
Chloroquine and hydroxychloroquine in the treatment of COVID-19 with or without diabetes: A systematic search and a narrative review with a special reference to India and other developing countries

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 3, 2020, Pages 241-246

Abstract:

Background and aims

No drugs are currently approved for Coronavirus Disease-2019 (COVID-19), although some have been tried. In view of recent studies and discussion on chloroquine and hydroxychloroquine (HCQ), we aimed to review existing literature and relevant websites regarding these drugs and COVID-19, adverse effects related to drugs, and related guidelines.

Aims and methods

We systematically searched the PubMed database up till March 21, 2020 and retrieved all the articles published on chloroquine and HCQ and COVID-19.

Results

Two small human studies have been conducted with both these drugs in COVID-19, and have shown significant improvement in some parameters in patients with COVID-19.

Conclusion

Considering minimal risk upon use, a long experience of use in other diseases, cost-effectiveness and easy availability across India, we propose that both these drugs are worthy of fast track clinical trial for treatment, and may be carefully considered for clinical use as experimental drugs. Since HCQ has been approved for treatment of diabetes in India, it should be further researched in diabetes and COVID-19, a subgroup where significant mortality has been shown.

Remdesivir for severe acute respiratory syndrome coronavirus 2 causing COVID-19: An evaluation of the evidence

Travel Medicine and Infectious Disease, 2020

Abstract:

The novel coronavirus infection that initially found at the end of 2019 has attracted great attention. So far, the number of infectious cases has increased globally to more than 100 thousand and the outbreak has been defined as a pandemic situation, but there are still no “specific drug” available. Relevant reports have pointed out the novel coronavirus has 80% homology with SARS. In the
difficulty where new synthesized drug cannot be applied immediately to patients, “conventional
drug in new use” becomes a feasible solution. The first medication experience of the recovered
patients in the US has led remdesivir to be the “specific drug”. China has also taken immediate
action to put remdesivir into clinical trials with the purpose of applying it into clinical therapeutics
for Corona Virus Disease 2019 (COVID-19). We started from the structure, immunogenicity, and
pathogenesis of coronavirus infections of the novel coronavirus. Further, we analyzed the
pharmacological actions and previous trials of remdesivir to identify the feasibility of conducting
experiments on COVID-19.

https://doi.org/10.1016/j.tmaid.2020.101647

Joseph Gligorov, Thomas Bachelot, Jean-Yves Pierga, Eric-Charles Antoine, …Suzette Delaloge

COVID-19 et personnes suivies pour un cancer du sein : recommandations françaises pour la pratique clinique de Nice-St Paul de Vence, en collaboration avec le Collège Nationale des Gynécologues et Obstétriciens Français (CNGOF), la Société d’Imagerie de la FEMme (SIFEM), la Société Française de Chirurgie Oncologique (SFCO), la Société Française de Sénologie et Pathologie Mamnaire (SFSPM) et le French Breast Cancer Intergroup-UNICANCER (UCBG)

Bulletin du Cancer, 2020

https://doi.org/10.1016/j.bulcan.2020.03.008

Wenjun Cao, Ziwei Fang, Guoqiang Hou, Mei Han, Xinrong Xu, Jiaxin Dong, Jianzhong Zheng

The psychological impact of the COVID-19 epidemic on college students in China

Psychiatry Research, Volume 287, 2020

Abstract:

A COVID-19 epidemic has been spreading in China and other parts of the world since December 2019. The epidemic has brought not only the risk of death from infection but also unbearable psychological pressure. We sampled college students from Changzhi medical college by using cluster sampling. They responded to a questionnaire packet that included the 7-item Generalized Anxiety Disorder Scale (GAD-7) and those inquiring the participants’ basic information. We received 7,143 responses. Results indicated that 0.9% of the respondents were experiencing severe anxiety, 2.7% moderate anxiety, and 21.3% mild anxiety. Moreover, living in urban areas (OR = 0.810, 95% CI = 0.709 - 0.925), family income stability (OR = 0.726, 95% CI = 0.645 - 0.817) and living with parents (OR = 0.752, 95% CI = 0.596 - 0.950) were protective factors against anxiety. Moreover, having relatives or acquaintances infected with COVID-19 was a risk factor for increasing the anxiety of college students (OR = 3.007, 95% CI = 2.377 - 3.804). Results of correlation analysis indicated that economic effects, and effects on daily life, as well as delays in academic activities, were positively associated with anxiety symptoms (P < .001). However, social support was negatively correlated with the level of anxiety (P < .001). It is suggested that the mental health of college students should be monitored during epidemics.
Daniele Di Mascio, Asma Khalil, Gabriele Saccone, Giuseppe Rizzo, Danilo Buca, Marco Liberati, Jacopo Vecchiet, Luigi Nappi, Giovanni Scambia, Vincenzo Berghella, Francesco D’Antonio

Outcome of Coronavirus spectrum infections (SARS, MERS, COVID-19) during pregnancy: a systematic review and meta-analysis

American Journal of Obstetrics & Gynecology MFM, 2020

Abstract:

Objective

The aim of this systematic review was to report pregnancy and perinatal outcomes of Coronavirus (CoV) spectrum infections, and particularly COVID-19 disease due to SARS-CoV-2 infection during pregnancy.

Data sources

Medline, Embase, Cinahl and Clinicaltrials.gov databases were searched electronically utilizing combinations of word variants for “coronavirus” or “severe acute respiratory syndrome” or “SARS” or “Middle East respiratory syndrome” or “MERS” or “COVID-19” and “pregnancy”. The search and selection criteria were restricted to English language.

Study eligibility criteria

Inclusion criteria were pregnant women with a confirmed Coronavirus related illness, defined as either SARS, MERS or COVID-19.

Study appraisal and synthesis methods

We used meta-analyses of proportions to combine data and reported pooled proportions. The pregnancy outcomes observed included miscarriage, preterm birth, pre-eclampsia, preterm prelabor rupture of membranes, fetal growth restriction, and mode of delivery. The perinatal outcomes observed were fetal distress, Apgar score < 7 at five minutes, neonatal asphyxia, admission to neonatal intensive care unit, perinatal death, and evidence of vertical transmission.

Results

19 studies including 79 women were eligible for this systematic review: 41 pregnancies (51.9%) affected by COVID-19, 12 (15.2%) by MERS, and 26 (32.9%) by SARS. An overt diagnosis of pneumonia was made in 91.8% and the most common symptoms were fever (82.6%), cough (57.1%) and dyspnea (27.0%). For all CoV infections, the rate of miscarriage was 39.1% (95% CI 20.2-59.8); the rate of preterm birth < 37 weeks was 24.3% (95% CI 12.5-38.6); premature prelabor rupture of membranes occurred in 20.7% (95% CI 9.5-34.9), preeclampsia in 16.2% (95% CI 4.2-34.1), and fetal growth restriction in 11.7% (95% CI 3.2-99.8) of newborns were admitted to the neonatal intensive care unit. When focusing on COVID-19, the most common adverse pregnancy outcome was preterm birth < 37 weeks, occurring in 41.1% (95% CI 25.6-57.6) of cases, while the rate of perinatal death was 7.0% (95% CI 1.4-16.3). None of the 41 newborns assessed showed clinical signs of vertical transmission.

Conclusion
In mothers infected with coronavirus infections, including COVID-19, >90% of whom also had pneumonia, PTB is the most common adverse pregnancy outcome. Miscarriage, preeclampsia, cesarean, and perinatal death (7-11%) were also more common than in the general population. There have been no published cases of clinical evidence of vertical transmission. Evidence is accumulating rapidly, so these data may need to be updated soon. The findings from this study can guide and enhance prenatal counseling of women with COVID-19 infection occurring during pregnancy.

https://doi.org/10.1016/j.ajogmf.2020.100107

Jason A. Tetro

Is COVID-19 receiving ADE from other coronaviruses?

Microbes and Infection, Volume 22, Issue 2, 2020, Pages 72-73

Abstract:

One of the most perplexing questions regarding the current COVID-19 coronavirus epidemic is the discrepancy between the severity of cases observed in the Hubei province of China and those occurring elsewhere in the world. One possible answer is antibody dependent enhancement (ADE) of SARS-CoV-2 due to prior exposure to other coronaviruses. ADE modulates the immune response and can elicit sustained inflammation, lymphopenia, and/or cytokine storm, one or all of which have been documented in severe cases and deaths. ADE also requires prior exposure to similar antigenic epitopes, presumably circulating in local viruses, making it a possible explanation for the observed geographic limitation of severe cases and deaths.

https://doi.org/10.1016/j.micinf.2020.02.006

Sung-Wan Kim, Kuan-Pin Su

Using psychoneuroimmunity against COVID-19

Brain, Behavior, and Immunity, 2020

Abstract:

The worldwide outbreak of coronavirus disease 2019 (COVID-19) raises concerns of widespread panic and anxiety in individuals subjected to the real or perceived threat of the virus. Compared to general populations, patients who are institutionalized in a closed unit are also very vulnerable to COVID-19 infection and complications. This crisis touched on difficult issues of not only psychiatric care and ethics, but also psychological impacts to psychiatric care givers. In this Viewpoint, we address both physical and biopsychosocial aspects of this infection, as well as the psychoneuroimmunity of preventive strategies of healthy lifestyle, regular exercise, balanced nutrition, quality sleep and a strong connection with people. Social distancing and wearing masks might help us from pathogen exposure, yet such these measures also prevent us from expressing compassion and friendliness. Therefore, all forms of psychological support should be routinely implemented not only to consider psychological resilience but also to enhance psychoneuroimmunity against COVID-19.

https://doi.org/10.1016/j.bbi.2020.03.025
Precautions and Procedures for Coronary and Structural Cardiac Interventions during the COVID-19 Pandemic: Guidance from Canadian Association of Interventional Cardiology

Canadian Journal of Cardiology, 2020

Abstract:

The globe is currently in the midst of a COVID-19 pandemic resulting in significant morbidity and mortality. This pandemic has placed considerable stress on health care resources and providers. This document from the Canadian Association of Interventional Cardiology - Association Canadienne de Cardiologie d'intervention, specifically addresses the implications for the care of patients in the Cardiac Catheterization Laboratory (CCL) in Canada during the COVID-19 pandemic. The key principles of this document are to maintain essential interventional cardiovascular care while minimizing risks of COVID-19 to patients/staff and maintaining the overall healthcare resources. As the COVID-19 pandemic evolves, procedures will be increased or reduced based on the current level of restriction to health care services. While some consistency across the country is desirable, provincial and regional considerations will influence how these recommendations are implemented. We believe the framework and recommendations in this document will provide crucial guidance for clinicians and policy makers on the management of coronary and structural procedures in the CCL as the COVID-19 pandemic escalates and eventually abates.

https://doi.org/10.1016/j.cjca.2020.03.027

M.W.M. Mustafa

Audiological profile of asymptomatic Covid-19 PCR-positive cases

American Journal of Otolaryngology, 2020

Abstract:

Objective

The current study compared the amplitude of transient evoked otoacoustic emissions (TEOAEs) and thresholds of pure-tone audiometry between asymptomatic COVID-19 PCR-positive cases and normal non-infected subjects.

Methods

Twenty cases who were confirmed positive for COVID-19 and had none of the known symptoms for this viral infection formed the test group. Their age ranged between 20 and 50 years to avoid any age-related hearing affection. Patients who had definite symptoms of COVID-19 infection as well as those who had a history of hearing loss or a history of any known cause of hearing loss were excluded from the examined sample. TEOAEs amplitude was measured for all participants.

Results
The high frequency pure-tone thresholds as well as the TEOAE amplitudes were significantly worse in the test group.

Conclusions

COVID-19 infection could have deleterious effects on cochlear hair cell functions despite being asymptomatic. The mechanism of these effects requires further research.

https://doi.org/10.1016/j.amjoto.2020.102483

Lyndon Jones, Karen Walsh, Mark Willcox, Philip Morgan, Jason Nichols

The COVID-19 pandemic: Important considerations for contact lens practitioners

Contact Lens and Anterior Eye, 2020

Abstract:

A novel coronavirus (CoV), the Severe Acute Respiratory Syndrome Coronavirus - 2 (SARS-CoV-2), results in the coronavirus disease 2019 (COVID-19). As information concerning the COVID-19 disease continues to evolve, patients look to their eye care practitioners for accurate eye health guidance. There is currently no evidence to suggest an increased risk of contracting COVID-19 through contact lens (CL) wear compared to spectacle lens wear and no scientific evidence that wearing standard prescription spectacles provides protection against COVID-19 or other viral transmissions. During the pandemic there will potentially be significant changes in access to local eyecare. Thus, it is imperative CL wearers are reminded of the steps they should follow to minimise their risk of complications, to reduce their need to leave isolation and seek care. Management of adverse events should be retained within optometric systems if possible, to minimise the impact on the wider healthcare service, which will be stretched. Optimal CL care behaviours should be the same as those under normal circumstances, which include appropriate hand washing (thoroughly with soap and water) and drying (with paper towels) before both CL application and removal. Daily CL cleaning and correct case care for reusable CL should be followed according to appropriate guidelines, and CL exposure to water must be avoided. Where the availability of local clinical care is restricted, practitioners could consider advising patients to reduce or eliminate sleeping in their CL (where patients have the appropriate knowledge about correct daily care and access to suitable lens-care products) or consider the option of moving patients to daily disposable lenses (where patients have appropriate lens supplies available). Patients should also avoid touching their face, including their eyes, nose and mouth, with unwashed hands and avoid CL wear altogether if unwell (particularly with any cold or flu-like symptoms).

https://doi.org/10.1016/j.clae.2020.03.012

Erwan Sallard, François-Xavier Lescure, Yazdan Yazdanpanah, France Mentre, Nathan Peiffer-Smadja

Type 1 interferons as a potential treatment against COVID-19

Antiviral Research, Volume 178, 2020

Abstract:
Type 1 interferons have a broad antiviral activity in vitro and are currently evaluated in a clinical trial to treat MERS-CoV. In this review, we discuss preliminary data concerning the potential activity of type 1 interferons on SARS-CoV-2, and the relevance of evaluating these molecules in clinical trials for the treatment of COVID-19.

https://doi.org/10.1016/j.antiviral.2020.104791

Noelle Breslin, Caitlin Baptiste, Russell Miller, Karin Fuchs, Dena Goffman, Cynthia Gyamfi-Bannerman, Mary D’Alton

COVID-19 in pregnancy: early lessons

American Journal of Obstetrics & Gynecology MFM, 2020

Abstract:

As the worldwide incidence of coronavirus disease 2019 (COVID-19) rapidly increases, there remains limited information on COVID-19 in pregnancy. We present here our experience with an initial seven cases of confirmed COVID-19 in pregnancy presenting to a single large New York City tertiary care hospital. Five of the seven patients presented with symptoms of COVID-19, including cough, myalgias, fevers, chest pain, and headache. Four patients were admitted to the hospital, including two who required supportive care with intravenous hydration. Most notably, the other two admitted patients were asymptomatic on admission to the hospital, presenting instead for obstetrically-indicated labor inductions; both of these patients became symptomatic post-partum, each requiring intensive care unit admission.

https://doi.org/10.1016/j.ajogmf.2020.100111

Zhen Zhu, Zhaohui Lu, Tianmin Xu, Cong Chen, Gang Yang, Tao Zha, Jianchun Lu, Yuan Xue

Arbidol monotherapy is superior to lopinavir/ritonavir in treating COVID-19

Journal of Infection, 2020

Abstract:

Lopinavir/ritonavir and arbidol have been previously used to treat acute respiratory syndrome-coronavirus 2 (SARS-CoV-2) replication in clinical practice; nevertheless, their effectiveness remains controversial. In this study, we evaluated the antiviral effects and safety of lopinavir/ritonavir and arbidol in patients with the 2019-nCoV disease (COVID-19). Fifty patients with laboratory-confirmed COVID-19 were divided into two groups: including lopinavir/ritonavir group (34 cases) and arbidol group (16 cases). Lopinavir/ritonavir group received 400 mg/100mg of Lopinavir/ritonavir, twice a day for a week, while the arbidol group was given 0.2 g arbidol, three times a day. Data from these patients were retrospectively analyzed. The cycle threshold values of open reading frame 1ab and nucleocapsid genes by RT-PCR assay were monitored during antiviral therapy. None of the patients developed severe pneumonia or ARDS. There was no difference in fever duration between the two groups (P=0.61). On day 14 after the admission, no viral load was detected in arbidol group, but the viral load was found in 15(44.1%) patients treated with lopinavir/ritonavir. Patients in the arbidol group had a shorter duration of positive RNA test compared to those in the lopinavir/ritonavir group (P<0.01). Moreover, no apparent side effects
were found in both groups. In conclusion, our data indicate that arbidol monotherapy may be superior to lopinavir/ritonavir in treating COVID-19.

https://doi.org/10.1016/j.jinf.2020.03.060

Juan P. Barret, Si Jack Chong, Nadia Depetris, Mark D. Fisher, Gaoxing Luo, Naiem Moiemen, Tam Pham, Liang Qiao, Lucy Wibbenmeyer

**Burn center function during the COVID-19 pandemic: An international multi-center report of strategy and experience**

Burns, 2020

**Abstract:**

The novel coronavirus, SARS-COV2 responsible for COVID-19 pandemic is rapidly escalating across the globe. Burn centers gearing for the pandemic must strike a balance between contributing to the pandemic response and preserving ongoing burn care in a safe and ethical fashion. The authors of the present communication represent seven burn centers from China, Singapore, Japan, Italy, Spain, the United Kingdom (UK), and the United States (US). Each center is located at a different point along the pandemic curve and serves different patient populations within their healthcare systems. We review our experience with the virus to date, our strategic approach to burn center function under these circumstances, and lessons learned. The purpose of this communication is to share experiences that will assist with continued preparations to help burn centers advocate for optimum burn care and overcome challenges as this pandemic continues.

https://doi.org/10.1016/j.burns.2020.04.003

Tang Yifan, Liu Ying, Gao Chunhong, Song Jing, Wang Rong, Li Zhenyu, Gu Zejuan, Liao Peihung

**Symptom Cluster of ICU nurses treating COVID-19 pneumonia patients in Wuhan, China**

Journal of Pain and Symptom Management, 2020

**Abstract:**

Objective

In treating highly infectious COVID-19 pneumonia, ICU nurses face a high risk of developing somatic symptom disorder (SSD). The present study aims to investigate the symptoms and causes of SSD of ICU nurses treating COVID-19 pneumonia. The research results are expected to provide evidence for the establishment of a better management strategy.

Methods

This study enrolled a total of 140 ICU nurses who were selected by Jiangsu Province Hospital to work in Wuhan (the epicenter of the COVID-19 epidemic in China) on 3rd February 2020. A questionnaire “Somatic Symptom Disorders for ICU Nurses in Wuhan No.1 Hospital” was designed based on the “International Classification of Functioning, Disability and Health” (ICF). Exploratory factor analysis was performed to cluster the symptoms, and logistic regression analysis to find the risk factors of the symptoms.
Results

Five major symptoms were chest-discomfort-and-palpitation (31.4%), dyspnea (30.7%), nausea (21.4%), headache (19.3%), and dizziness (17.9%). In exploratory factor analysis, the symptoms were classified into three clusters: Cluster A of breathing and sleep disturbances (dizziness, sleepiness, dyspnea); Cluster B of gastrointestinal complaints and pain (nausea, headache), and Cluster C of general symptoms (xerostomia, fatigue, chest-discomfort-and-palpitation). In Cluster A, urine/feces splash, sex, and sputum splash were independent predictive factors. In Cluster B, fall of protective glasses and urine/feces splash were independent predictive factors. In Cluster C, urine/feces splash and urine/feces clearance were independent predictive factors.

Conclusion

The ICU nurses in Wuhan showed varying and overlapping SSDs. These SSDs could be classified into three symptom clusters. Based on the characteristics of their SSDs, specific interventions could be implemented to safeguard the health of ICU nurses.

https://doi.org/10.1016/j.jpainsymman.2020.03.039

Abdullah M. Al-Awadhi, Khaled Alsaifi, Ahmad Al-Awadhi, Salah Alhammadi

Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns

Journal of Behavioral and Experimental Finance, Volume 27, 2020

Abstract:

This study investigates whether contagious infectious diseases affect stock market outcomes. As a natural experiment, we use panel data analysis to test the effect of the COVID-19 virus, which is a contagious infectious disease, on the Chinese stock market. The findings indicate that both the daily growth in total confirmed cases and in total cases of death caused by COVID-19 have significant negative effects on stock returns across all companies.

https://doi.org/10.1016/j.jbef.2020.100326

Claudio Guerci, Anna Maffioli, Andrea A. Bondurri, Luca Ferrario, Francesco Lazzarin, Piergiorgio Danelli

COVID-19: How can a department of general surgery survive in a pandemic?

Surgery, 2020

https://doi.org/10.1016/j.surg.2020.03.012

Rupsa C. Boelig, Gabriele Saccone, Federica Bellussi, Vincenzo Berghella

MFM guidance for COVID-19

American Journal of Obstetrics & Gynecology MFM, 2020

https://doi.org/10.1016/j.ajogmf.2020.100106
Simon Holmes, Nabeel Bhatti, Rishi Bhandari, Dominiki Chatzopoulou

**Toward a consensus view in the management of acute facial injuries during the Covid-19 pandemic**

British Journal of Oral and Maxillofacial Surgery, 2020

**Abstract:**

In unprecedented times OMFS surgeons are faced with dilemmas over treatment priority, safety of staff, safety of patients and the most appropriate use of available resource. Efforts should be made to provide best evidence based care, this will mean revisiting old techniques, and risk stratifying patients on a case by case basis. Recent experience from colleagues internationally has shown that even the wealthiest health care infrastructure is at best fragile. We hope this paper will add to the debate and hopefully provide a framework to decision making in OMFS trauma care during this difficult time.

[https://doi.org/10.1016/j.bjoms.2020.03.024](https://doi.org/10.1016/j.bjoms.2020.03.024)

Li-sheng Wang, Yi-ru Wang, Da-wei Ye, Qing-quan Liu

**A review of the 2019 Novel Coronavirus (COVID-19) based on current evidence**

International Journal of Antimicrobial Agents, 2020

**Abstract:**

The pneumonia caused by novel coronavirus (SARS-CoV-2) in Wuhan, China in December 2019 is a highly contagious disease. The World Health Organization (WHO) has declared the ongoing outbreak as a global public health emergency. Currently, the research on novel coronavirus is still in the primary stage. Based on the current published evidence, we systematically summarizes the epidemiology, clinical characteristics, diagnosis, treatment and prevention of knowledge surrounding COVID-19. This review in the hope of helping the public effectively recognize and deal with the 2019 novel coronavirus (SARS-CoV-2), and providing a reference for future studies.


Akhtar Hussain, Bishwajit Bhowmik, Nayla Cristina do Vale Moreira

**COVID-19 and diabetes: Knowledge in progress**

Diabetes Research and Clinical Practice, Volume 162, 2020

**Abstract:**

**Aims**

We aimed to briefly review the general characteristics of the novel coronavirus (SARS-CoV-2) and provide a better understanding of the coronavirus disease (COVID-19) in people with diabetes, and its management.

**Methods**

Results

The clinical spectrum of COVID-19 is heterogeneous, ranging from mild flu-like symptoms to acute respiratory distress syndrome, multiple organ failure and death. Older age, diabetes and other comorbidities are reported as significant predictors of morbidity and mortality. Chronic inflammation, increased coagulation activity, immune response impairment, and potential direct pancreatic damage by SARS-CoV-2 might be among the underlying mechanisms of the association between diabetes and COVID-19. No conclusive evidence exists to support the discontinuation of angiotensin-converting enzyme inhibitors (ACEI), angiotensin receptor blockers or thiazolidinediones because of COVID-19 in people with diabetes. Caution should be taken to potential hypoglycemic events with the use of chloroquine in these subjects. Patient tailored therapeutic strategies, rigorous glucose monitoring and careful consideration of drug interactions might reduce adverse outcomes.

Conclusions

Suggestions are made on the possible pathophysiological mechanisms of the relationship between diabetes and COVID-19, and its management. No definite conclusions can be made based on current limited evidence. Further research regarding this relationship and its clinical management is warranted.

https://doi.org/10.1016/j.diabres.2020.108142

Ning Li, Tingmin Liu, Hualing Chen, Jianmei Liao, Haisheng Li, Qizhi Luo, Huapei Song, Fei Xiang, Jianglin Tan, Junyi Zhou, Gaozhong Hu, Zhiqiang Yuan, Yizhi Peng, Gaoxing Luo

Management strategies for the burn ward during COVID-19 pandemic

Burns, 2020

Abstract:

COVID-19 pandemic is sweeping the globe. Any outpatient or new inpatient especial in burn department during the pandemic should be as a potential infectious source of COVID-19. It is very important to manage the patients and wards carefully and correctly to prevent epidemic of the virus in burn centers. This paper provides some strategies regarding management of burn ward during the epidemic of COVID-19 or other respiratory infectious diseases.

https://doi.org/10.1016/j.burns.2020.03.013

Rupsa C. Boelig, Tracy Manuck, Emily A. Oliver, Daniele Di Mascio, Gabriele Saccone, Federica Bellussi, Vincenzo Berghella

Labor and Delivery Guidance for COVID-19

American Journal of Obstetrics & Gynecology MFM, 2020
Guqin Zhang, Chang Hu, Linjie Luo, Fang Fang, Yongfeng Chen, Jianguo Li, Zhiyong Peng, Huaqin Pan

Clinical features and short-term outcomes of 221 patients with COVID-19 in Wuhan, China

Journal of Clinical Virology, 2020

Abstract:

Background

In late December 2019, an outbreak of acute respiratory illness, coronavirus disease 2019 (COVID-19), emerged in Wuhan, China. We aimed to study the epidemiology, clinical features and short-term outcomes of patients with COVID-19 in Wuhan, China.

Methods

We performed a single center, retrospective case series study in 221 patients with laboratory confirmed SARS-CoV-2 pneumonia at a university hospital, including 55 severe patients and 166 non-severe patients, from January 2, 2020 to February 10, 2020.

Results

Of the 221 patients with COVID-19, the median age was 55.0 years and 48.9% were male and only 8 (3.6%) patients had a history of exposure to the Huanan Seafood Market. Compared to the non-severe pneumonia patients, the median age of the severe patients was significantly older, and they were more likely to have chronic comorbidities. Most common symptoms in severe patients were high fever, anorexia and dyspnea. On admission, 33.0% patients showed leukopenia and 73.8% showed lymphopenia. In addition, the severe patients suffered a higher rate of co-infections with bacteria or fungus and they were more likely to developing complications. As of February 15, 2020, 19.0% patients had been discharged and 5.4% patients died. 80% of severe cases received ICU (intensive care unit) care, and 52.3% of them transferred to the general wards due to relieved symptoms, and the mortality rate of severe patients in ICU was 20.5%.

Conclusions

Patients with elder age, chronic comorbidities, blood leukocyte/lymphocyte count, procalcitonin level, co-infection and severe complications might increase the risk of poor clinical outcomes.

Pengfei Wang, Kaiyu Chen, Shengqiang Zhu, Peng Wang, Hongliang Zhang

Severe air pollution events not avoided by reduced anthropogenic activities during COVID-19 outbreak

Resources, Conservation and Recycling, Volume 158, 2020

Abstract:
Due to the pandemic of coronavirus disease 2019 in China, almost all avoidable activities in China are prohibited since Wuhan announced lockdown on January 23, 2020. With reduced activities, severe air pollution events still occurred in the North China Plain, causing discussions regarding why severe air pollution was not avoided. The Community Multi-scale Air Quality model was applied during January 01 to February 12, 2020 to study PM2.5 changes under emission reduction scenarios. The estimated emission reduction case (Case 3) better reproduced PM2.5. Compared with the case without emission change (Case 1), Case 3 predicted that PM2.5 concentrations decreased by up to 20% with absolute decreases of 5.35, 6.37, 9.23, 10.25, 10.30, 12.14, 12.75, 14.41, 18.00 and 30.79 μg/m³ in Guangzhou, Shanghai, Beijing, Shijiazhuang, Tianjin, Jinan, Taiyuan, Xi’an, Zhengzhou, Wuhan, respectively. In high-pollution days with PM2.5 greater than 75 μg/m³, the reductions of PM2.5 in Case 3 were 7.78, 9.51, 11.38, 13.42, 13.64, 14.15, 14.42, 16.95 and 22.08 μg/m³ in Shanghai, Jinan, Shijiazhuang, Beijing, Taiyuan, Xi’an, Tianjin, Zhengzhou and Wuhan, respectively. The reductions in emissions of PM2.5 precursors were ~2 times of that in concentrations, indicating that meteorology was unfavorable during simulation episode. A further analysis shows that benefits of emission reductions were overwhelmed by adverse meteorology and severe air pollution events were not avoided. This study highlights that large emissions reduction in transportation and slight reduction in industrial would not help avoid severe air pollution in China, especially when meteorology is unfavorable. More efforts should be made to completely avoid severe air pollution.

https://doi.org/10.1016/j.resconrec.2020.104814

Pavan Hiremath, C S Suhas Kowshik, Maitri Manjunath, Manjunath Shettar

COVID 19: Impact of lock-down on mental health and tips to overcome

Asian Journal of Psychiatry, Volume 51, 2020

https://doi.org/10.1016/j.ajp.2020.102088

Noelle Breslin, Caitlin Baptiste, Cynthia Gyamfi-Bannerman, Russell Miller, Rebecca Martinez, Kyra Bernstein, Laurence Ring, Ruth Landau, Stephanie Purisch, Alexander M. Friedman, Karin Fuchs, Desmond Sutton, Maria Andrikopoulou, Devon Rupley, Jean-Ju Sheen, Janice Aubey, Noelia Zork, Leslie Moroz, Mirella Mourad, Ronald Wapner, Lynn L. Simpson, Mary E. D’Alton, Dena Goffman

COVID-19 infection among asymptomatic and symptomatic pregnant women: Two weeks of confirmed presentations to an affiliated pair of New York City hospitals

American Journal of Obstetrics & Gynecology MFM, 2020

Abstract:

The novel coronavirus 2019, or COVID-19, infection has rapidly spread through the New York metropolitan area since the first reported case in the state on March 1, 2020. New York currently represents an epicenter for COVID-19 infection in the United States, with 84,735 cases reported as of April 2, 2020. We previously presented an early experience with seven COVID-positive patients in pregnancy, including two women who were diagnosed with COVID-19 following an
asymptomatic initial presentation. We now describe a series of 43 test-confirmed cases of COVID-19 presenting to a pair of affiliated New York City hospitals over two weeks from March 13 to 27, 2020. Fourteen (32.6%) patients presented without any COVID-associated viral symptoms, and were identified either after developing symptoms during admission or following the implementation of universal testing for all obstetrical admissions on March 22. Of these, 10/14 (71.4%) developed symptoms or signs of COVID-19 infection over the course of their delivery admission or early after postpartum discharge. Of the other 29 (67.4%) patients who presented with symptomatic COVID-19 infection, three women ultimately required antenatal admission for viral symptoms, and an additional patient represented six days postpartum after a successful labor induction with worsening respiratory status that required oxygen supplementation. There were no confirmed cases of COVID-19 detected in neonates upon initial testing on the first day of life. Applying COVID-19 disease severity characteristics as described by Wu et al, 37 (86%) women possessed mild disease, four (9.3%) exhibited severe disease, and two (4.7%) developed critical disease; these percentages are similar to those described for non-pregnant adults with COVID-19 infections (about 80% mild, 15% severe, and 5% critical disease).


Leiwen Fu, Bingyi Wang, Tanwei Yuan, Xiaoting Chen, Yunlong Ao, Thomas Fitzpatrick, Peiyang Li, Yiguo Zhou, Yi-fan Lin, Qibin Duan, Ganfeng Luo, Song Fan, Yong Lu, Anping Feng, Yuwei Zhan, Bowen Liang, Weiping Cai, Lin Zhang, Xiangjun Du, Huachun Zou, Linghua Li, Yuelong Shu

Clinical characteristics of coronavirus disease 2019 (COVID-19) in China: A systematic review and meta-analysis

Journal of Infection, 2020

Abstract:

Summary

Objective

To better inform efforts to treat and control the current outbreak with a comprehensive characterization of COVID-19.

Methods

We searched PubMed, EMBASE, Web of Science, and CNKI (Chinese Database) for studies published as of March 2, 2020, and we searched references of identified articles. Studies were reviewed for methodological quality. A random-effects model was used to pool results. Heterogeneity was assessed using I2. Publication bias was assessed using Egger's test.

Results

43 studies involving 3600 patients were included. Among COVID-19 patients, fever (83.3% [95% CI 78.4–87.7]), cough (60.3% [54.2–66.3]), and fatigue (38.0% [29.8–46.5]) were the most common clinical symptoms. The most common laboratory abnormalities were elevated C-reactive protein (68.6% [58.2–78.2]), decreased lymphocyte count (57.4% [44.8–69.5]) and increased lactate dehydrogenase (51.6% [31.4–71.6]). Ground-glass opacities (80.0% [67.3–90.4]) and bilateral pneumonia (73.2% [63.4–82.1]) were the most frequently reported findings on computed tomography. The overall estimated proportion of severe cases and case-fatality rate (CFR) was
25.6% (17.4–34.9) and 3.6% (1.1–7.2), respectively. CFR and laboratory abnormalities were higher in severe cases, patients from Wuhan, and older patients, but CFR did not differ by gender.

Conclusions

The majority of COVID-19 cases are symptomatic with a moderate CFR. Patients living in Wuhan, older patients, and those with medical comorbidities tend to have more severe clinical symptoms and higher CFR.

https://doi.org/10.1016/j.jinf.2020.03.041

Yeshun Wu, Xiaolin Xu, Zijun Chen, Jiahao Duan, Kenji Hashimoto, Ling Yang, Cunming Liu, Chun Yang

Nervous system involvement after infection with COVID-19 and other coronaviruses

Brain, Behavior, and Immunity, 2020

Abstract:
Viral infections have detrimental impacts on neurological functions, and even to cause severe neurological damage. Very recently, coronaviruses (CoV), especially severe acute respiratory syndrome CoV 2 (SARS-CoV-2), exhibit neurotropic properties and may also cause neurological diseases. It is reported that CoV can be found in the brain or cerebrospinal fluid. The pathobiology of these neuroinvasive viruses is still incompletely known, and it is therefore important to explore the impact of CoV infections on the nervous system. Here, we review the research into neurological complications in CoV infections and the possible mechanisms of damage to the nervous system.

https://doi.org/10.1016/j.bbi.2020.03.031

Heshui Shi, Xiaoyu Han, Nanchuan Jiang, Yukun Cao, Osamah Alwalid, Jin Gu, Yanqing Fan, Chuansheng Zheng

Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study

The Lancet Infectious Diseases, Volume 20, Issue 4, 2020, Pages 425-434

Abstract:

Summary

Background

A cluster of patients with coronavirus disease 2019 (COVID-19) pneumonia caused by infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) were successively reported in Wuhan, China. We aimed to describe the CT findings across different timepoints throughout the disease course.

Methods
Patients with COVID-19 pneumonia (confirmed by next-generation sequencing or RT-PCR) who were admitted to one of two hospitals in Wuhan and who underwent serial chest CT scans were retrospectively enrolled. Patients were grouped on the basis of the interval between symptom onset and the first CT scan: group 1 (subclinical patients; scans done before symptom onset), group 2 (scans done ≤1 week after symptom onset), group 3 (>1 week to 2 weeks), and group 4 (>2 weeks to 3 weeks). Imaging features and their distribution were analysed and compared across the four groups.

Findings

81 patients admitted to hospital between Dec 20, 2019, and Jan 23, 2020, were retrospectively enrolled. The cohort included 42 (52%) men and 39 (48%) women, and the mean age was 49·5 years (SD 11·0). The mean number of involved lung segments was 10·5 (SD 6·4) overall, 2·8 (3·3) in group 1, 11·1 (5·4) in group 2, 13·0 (5·7) in group 3, and 12·1 (5·9) in group 4. The predominant pattern of abnormality observed was bilateral (64 [79%] patients), peripheral (44 [54%]), ill-defined (66 [81%]), and ground-glass opacification (53 [65%]), mainly involving the right lower lobes (225 [27%] of 849 affected segments). In group 1 (n=15), the predominant pattern was unilateral (nine [60%]) and multifocal (eight [53%]) ground-glass opacities (14 [93%]). Lesions quickly evolved to bilateral (19 [90%]), diffuse (11 [52%]) ground-glass opacity predominance (17 [81%]) in group 2 (n=21). Thereafter, the prevalence of ground-glass opacities continued to decrease (17 [57%] of 30 patients in group 3, and five [33%] of 15 in group 4), and consolidation and mixed patterns became more frequent (12 [40%] in group 3, eight [53%] in group 4).

Interpretation

COVID-19 pneumonia manifests with chest CT imaging abnormalities, even in asymptomatic patients, with rapid evolution from focal unilateral to diffuse bilateral ground-glass opacities that progressed to or co-existed with consolidations within 1–3 weeks. Combining assessment of imaging features with clinical and laboratory findings could facilitate early diagnosis of COVID-19 pneumonia.

https://doi.org/10.1016/S1473-3099(20)30086-4

Sophie Amrane, Hervé Tissot-Dupont, Barbara Doudier, Carole Eldin, Marie Hocquart, Morgane Mailhe, Pierre Dudouet, Etienne Ormières, Lucie Ailhaud, Philippe Parola, Jean-Christophe Lagier, Philippe Brouqui, Christine Zandotti, Laetitia Ninove, Léa Luciani, Céline Boschi, Bernard La Scola, Didier Raoult, Matthieu Million, Philippe Colson, Philippe Gautret

Rapid viral diagnosis and ambulatory management of suspected COVID-19 cases presenting at the infectious diseases referral hospital in Marseille, France, - January 31st to March 1st, 2020: A respiratory virus snapshot

Travel Medicine and Infectious Disease, 2020

Abstract:

Background

Rapid virological diagnosis is needed to limit the length of isolation for suspected COVID-19 cases.

Method
We managed the first 280 patients suspected to have COVID-19 through a rapid care circuit and virological diagnosis in our infectious disease reference hospital in Marseille, France. Rapid viral detection was performed on sputum and nasopharyngeal samples.

Results

Over our study period, no SARS-CoV-2 was detected. Results were obtained within approximately 3 h of the arrival of patient samples at the laboratory. Other viral infections were identified in 49% of the patients, with most common pathogens being influenza A and B viruses, rhinovirus, metapneumovirus and common coronaviruses, notably HKU1 and NL63.

Conclusion

Early recognition of COVID-19 is critical to isolate confirmed cases and prevent further transmission. Early rule-out of COVID-19 allows public health containment measures to be adjusted by reducing the time spent in isolation.

https://doi.org/10.1016/j.tmaid.2020.101632

Zuhua Chen, Hongjie Fan, Jian Cai, Yunjiang Li, Baoliang Wu, Yanchun Hou, Shufeng Xu, Fei Zhou, Yongguang Liu, Weiling Xuan, Hongjie Hu, Jihong Sun

High-resolution computed tomography manifestations of COVID-19 infections in patients of different ages

European Journal of Radiology, Volume 126, 2020

Abstract:

Purpose

We aimed to compare chest HRCT lung signs identified in scans of differently aged patients with COVID-19 infections.

Methods

Case data of patients diagnosed with COVID-19 infection in Hangzhou City, Zhejiang Province in China were collected, and chest HRCT signs of infected patients in four age groups (<18 years, 18–44 years, 45–59 years, ≥60 years) were compared.

Results

Small patchy, ground-glass opacity (GGO), and consolidations were the main HRCT signs in 98 patients with confirmed COVID-19 infections. Patients aged 45–59 years and aged ≥60 years had more bilateral lung, lung lobe, and lung field involvement, and greater lesion numbers than patients <18 years. GGO accompanied with the interlobular septa thickening or a crazy-paving pattern, consolidation, and air bronchogram sign were more common in patients aged 45–59 years, and ≥60 years, than in those aged <18 years, and aged 18–44 years.

Conclusions

Chest HRCT manifestations in patients with COVID-19 are related to patient’s age, and HRCT signs may be milder in younger patients.

https://doi.org/10.1016/j.ejrad.2020.108972
Si-qian Zheng, Li Yang, Peng-xiang Zhou, Hui-bo Li, Fang Liu, Rong-sheng Zhao

**Recommendations and guidance for providing pharmaceutical care services during COVID-19 pandemic: A China perspective**

Research in Social and Administrative Pharmacy, 2020

**Abstract:**

**Background**

The novel coronavirus pneumonia (COVID-19), which was first detected in Wuhan City, has now became a pandemic that affecting patients around the world. Particularly, the community patient population are at high risk of infection and are facing potential failure of proper medication use during the pandemic.

**Objective**

To discuss community pharmacists’ role and the content of pharmaceutical care (PC) during the novel coronavirus pandemic to promote effective prevention and control and safe drug use of the community patient population.

**Method**

Collect and summarize the experience Chinese community pharmacies gained from providing pharmacy services during the COVID-19 outbreak, and taking patients' PC needs into consideration, analyze and discuss the methods and strategies that community pharmacies and pharmacists shall use to provide PC during the pandemic.

**Results**

Community pharmacy management teams shall support PC services by providing adequate supply of COVID-19 related medications and preventative products, following environment regulations, and providing sufficient staff trainings. Pharmacists shall use various approaches to provide PC services in drug dispensing, consulting and referrals, chronic disease management, safe use of infusions, patient education, home care guidance and psychological support to promote the COVID-19 pandemic control and ensure safe medication use of community patients during the pandemic.

**Conclusion**

PC services in communities during the COVID-19 shall possess different properties due to disease characteristics and related change in patients' need. Community pharmacies shall work as a strong supporter of patient's medication and protective equipment supply. Community pharmacists shall be prepared to provide skilled and effective PC services for community patient population to ensure medication safety and promote the overall COVID-19 pandemic control.

https://doi.org/10.1016/j.sapharm.2020.03.012

Summer Chavez, Brit Long, Alex Koyfman, Stephen Y. Liang

**Coronavirus Disease (COVID-19): A primer for emergency physicians**

The American Journal of Emergency Medicine, 2020
Abstract:

Introduction

Rapid worldwide spread of Coronavirus Disease 2019 (COVID-19) has resulted in a global pandemic.

Objective

This review article provides emergency physicians with an overview of the most current understanding of COVID-19 and recommendations on the evaluation and management of patients with suspected COVID-19.

Discussion

Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for causing COVID-19, is primarily transmitted from person-to-person through close contact (approximately 6 ft) by respiratory droplets. Symptoms of COVID-19 are similar to other viral upper respiratory illnesses. Three major trajectories include mild disease with upper respiratory symptoms, non-severe pneumonia, and severe pneumonia complicated by acute respiratory distress syndrome (ARDS). Emergency physicians should focus on identifying patients at risk, isolating suspected patients, and informing hospital infection prevention and public health authorities. Patients with suspected COVID-19 should be asked to wear a facemask. Respiratory etiquette, hand washing, and personal protective equipment are recommended for all healthcare personnel caring for suspected cases. Disposition depends on patient symptoms, hemodynamic status, and patient ability to self-quarantine.

Conclusion

This narrative review provides clinicians with an updated approach to the evaluation and management of patients presenting to the emergency department with suspected COVID-19.

https://doi.org/10.1016/j.ajem.2020.03.036

Jennifer Brown, Swadha Guru, Karen Williams, Reyna Florentino, Jean Miner, Burt Cagir

Rural Healthcare Center Preparation and Readiness Response to Threat of COVID-19

Journal of the American College of Surgeons, 2020

https://doi.org/10.1016/j.jamcollsurg.2020.04.006

Zihui Tan, Priscilla Hui Yi Phoon, Ling Antonia Zeng, Jing Fu, Xiao Ting Lim, Teing Ee Tan, Kenny Wei-Tsen Loh, Meng Huat Goh

Response and Operating Room Preparation for the COVID-19 Outbreak: A Perspective From the National Heart Centre in Singapore

Journal of Cardiothoracic and Vascular Anesthesia, 2020

Abstract:
The outbreak of coronavirus disease 2019 (COVID-19), a respiratory disease from a novel coronavirus that was first detected in Wuhan City, Hubei Province, China, is now a public health emergency and pandemic. Singapore, as a major international transportation hub in Asia, has been one of the worst hit countries by the disease. With the advent of local transmission, the authors share their preparation and response planning for the operating room of the National Heart Centre Singapore, the largest cardiothoracic tertiary center in Singapore. Protection of staff and patients, environmental concerns, and other logistic and equipment issues are considered.

https://doi.org/10.1053/j.jvca.2020.03.050

Grech Victor

COVID-19 admissions calculators: General population and paediatric cohort

Early Human Development, Volume 145, 2020

Abstract:

The world is in the grip of pandemic COVID-19 (SARS-CoV-2). Children appear to be only mildly affected but for those countries that are still preparing for their first wave of infections, it is salutary to have some estimates with which to plan for eventual contingencies. These assessments would include acute hospital admission requirements, intensive care admissions and deaths per given population. It is also useful to have an estimate of how many paediatric admissions to expect per given population. However it is only very recently that paediatric epidemiological data has become available. This paper will create an interactive spreadsheet model to estimate population and paediatric admissions for a given population, with the author's country, Malta, as a worked example for both.

https://doi.org/10.1016/j.earlhumdev.2020.105043

Brian Wolfe

Postgraduate Inpatient Training in the time COVID

The Journal for Nurse Practitioners, 2020

https://doi.org/10.1016/j.nurpra.2020.04.001


Strategy for the practice of digestive and oncological surgery during the Covid-19 epidemic

Journal of Visceral Surgery, 2020

Abstract:

Summary

The Covid-19 pandemic is changing the organization of healthcare and has a direct impact on digestive surgery. Healthcare priorities and circuits are being modified. Emergency surgery is still
a priority. Functional surgery is to be deferred. Laparoscopic surgery must follow strict rules so as not to expose healthcare professionals (HCPs) to added risk. The question looms large in cancer surgery—go ahead or defer? There is probably an added risk due to the pandemic that must be balanced against the risk incurred by deferring surgery. For each type of cancer—colon, pancreas, oesogastric, hepatocellular carcinoma—morbidity and mortality rates are stated and compared with the oncological risk incurred by deferring surgery and/or the tumour doubling time. Strategies can be proposed based on this comparison. For colonic cancers T1-2, N0, it is advisable to defer surgery. For advanced colonic lesions, it seems judicious to undertake neoadjuvant chemotherapy and then wait. For rectal cancers T3-4 and/or N+, chemoradiotherapy is indicated, short radiotherapy must be discussed (followed by a waiting period) to reduce time of exposure in the hospital and to prevent infections. Most complex surgery with high morbidity and mortality—oesogastric, hepatic or pancreatic—is most often best deferred.

https://doi.org/10.1016/j.jviscsurg.2020.03.008

Serge Benaderette

**Virus Covid-19 : les biologistes s’arment pour le dépistage de masse**

Option/Bio, Volume 31, Issues 613–614, 2020, Pages 1-3

https://doi.org/10.1016/S0992-5945(20)30066-0

Simon N. Etkind, Anna E. Bone, Natasha Lovell, Rachel L. Cripps, Richard Harding, Irene J. Higginson, Katherine E. Sleeman

**The role and response of palliative care and hospice services in epidemics and pandemics: a rapid review to inform practice during the COVID-19 pandemic**

Journal of Pain and Symptom Management, 2020

**Abstract:**

Cases of COVID-19 are escalating rapidly across the globe, with the mortality risk being especially high among those with existing illness and multimorbidity. This study aimed to synthesise evidence for the role and response of palliative care and hospice teams to viral epi/pandemics, to inform the COVID-19 pandemic response. We conducted a rapid systematic review according to PRISMA guidelines in five databases. Of 3094 papers identified, ten were included in this narrative synthesis. Included studies were from West Africa, Taiwan, Hong Kong, Singapore, the United States and Italy. All had an observational design. Findings were synthesised using a previously proposed framework according to ‘systems’ (policies, training and protocols, communication and coordination, data), ‘staff’ (deployment, skill mix, resilience), ‘space’ (community provision, use of technology) and ‘stuff’ (medicines and equipment, personal protective equipment). We conclude that hospice and palliative services have an essential role in the response to COVID-19 by: 1) responding rapidly and flexibly; 2) ensuring protocols for symptom management are available, and training non-specialists in their use; 3) being involved in triage; 4) considering shifting resources into the community; 5) considering redeploying volunteers to provide psychosocial and bereavement care; 6) facilitating camaraderie among staff and adopt measures to deal with stress; 7) using technology to communicate with patients and carers; 8) adopting standardised data collection systems to inform operational changes and improve care.

**Global epidemiology of coronavirus disease 2019 (COVID-19): disease incidence, daily cumulative index, mortality, and their association with country healthcare resources and economic status**

*International Journal of Antimicrobial Agents, 2020*

**Abstract:**

It has been 2 months since the first case of coronavirus disease 2019 (COVID-19) was reported in Wuhan, China. So far, COVID-19 has affected 85,403 patients in 57 countries/territories and has caused 2,924 deaths in 9 countries. However, epidemiological data differ between countries. Although China had higher morbidity and mortality than other sites, the number of new daily cases in China has been lower than outside of China since 26 February 2020. The incidence ranged from 61.44 per 1,000,000 people in the Republic of Korea to 0.0002 per 1,000,000 people in India. The daily cumulative index (DCI) of COVID-19 (cumulative cases/no. of days between the first reported case and 29 February 2020) was greatest in China (1,320.85), followed by the Republic of Korea (78.78), Iran (43.11) and Italy (30.62). However, the DCIs in other countries/territories were <10 per day. Several effective measures including restricting travel from China, controlling the distribution of masks, extensive investigation of COVID-19 spread, and once-daily press conferences by the government to inform and educate people were aggressively conducted in Taiwan. This is probably the reason why there was only 39 cases (as of 29 February 2020) with a DCI of 1 case per day in Taiwan, which is much lower than that of nearby countries such as the Republic of Korea and Japan. In addition, the incidence and mortality were correlated with the DCI. However, further study and continued monitoring are needed to better understand the underlying mechanism of COVID-19.

*https://doi.org/10.1016/j.ijantimicag.2020.105946*

Michael A. Hill, Christos Mantzoros, James R. Sowers

**Commentary: COVID-19 in patients with diabetes**

*Metabolism, Volume 107, 2020*

*https://doi.org/10.1016/j.metabol.2020.154217*

Jaffar A. Al-Tawfiq, Ziad A. Memish

**COVID-19 in the Eastern Mediterranean Region and Saudi Arabia: prevention and therapeutic strategies**

*International Journal of Antimicrobial Agents, 2020*

*https://doi.org/10.1016/j.ijantimicag.2020.105968*
Probable aircraft transmission of Covid-19 in-flight from the Central African Republic to France

Travel Medicine and Infectious Disease, 2020
https://doi.org/10.1016/j.tmaid.2020.101643

Aminoquinolines against coronavirus disease 2019 (COVID-19): chloroquine or hydroxychloroquine

International Journal of Antimicrobial Agents, 2020
https://doi.org/10.1016/j.ijantimicag.2020.105945

Association between ambient temperature and COVID-19 infection in 122 cities from China

Science of The Total Environment, Volume 724, 2020

Abstract:

Background

Coronavirus disease 2019 (COVID-19) has become a severe public health problem globally. Both epidemiological and laboratory studies have shown that ambient temperature could affect the transmission and survival of coronaviruses. This study aimed to determine whether the temperature is an essential factor in the infection caused by this novel coronavirus.

Methods

Daily confirmed cases and meteorological factors in 122 cities were collected between January 23, 2020, to February 29, 2020. A generalized additive model (GAM) was applied to explore the nonlinear relationship between mean temperature and COVID-19 confirmed cases. We also used a piecewise linear regression to determine the relationship in detail.

Results

The exposure-response curves suggested that the relationship between mean temperature and COVID-19 confirmed cases was approximately linear in the range of <3 °C and became flat above 3 °C. When mean temperature (lag0–14) was below 3 °C, each 1 °C rise was associated with a 4.861% (95% CI: 3.209–6.513) increase in the daily number of COVID-19 confirmed cases. These findings were robust in our sensitivity analyses.

Conclusions
Our results indicate that mean temperature has a positive linear relationship with the number of COVID-19 cases with a threshold of 3 °C. There is no evidence supporting that case counts of COVID-19 could decline when the weather becomes warmer, which provides useful implications for policymakers and the public.

https://doi.org/10.1016/j.scitotenv.2020.138201

Michael Holland, Debra J. Zaloga, Charles S. Friderici

**COVID-19 Personal Protective Equipment (PPE) for the emergency physician**

Visual Journal of Emergency Medicine, Volume 19, 2020

https://doi.org/10.1016/j.visj.2020.100740

Ron Waksman

**CRT 2020, COVID-19 and beyond**

Cardiovascular Revascularization Medicine, 2020

https://doi.org/10.1016/j.carrev.2020.03.022.

Fabiana Zingone, Andrea Buda, Edoardo Vincenzo Savarino

**Screening for Active COVID-19 Infection and Immunization Status Prior to Biologic Therapy in IBD Patients at the Time of the Pandemic Outbreak**

Digestive and Liver Disease, 2020

**Abstract:**

Coronavirus disease 2019 has been recently classified as pandemic infection by the World Health Organization. Patients with inflammatory bowel disease (IBD) are invited to follow the national recommendations as any other person. It is unclear whether a more aggressive clinical course might develop in asymptomatic COVID-19 infected subjects during biological therapy and current evidence does not support treatment suspension. However, during pandemic, the start of treatment with immunosuppressive drugs and biologics should be postponed whenever possible and based on an individual risk assessment. When clinical conditions and the disease activity do not allow a treatment delay, before starting a biological therapy, screening of IBD patients for COVID-19 active infection by RT-PCR should be advisable, even in absence of clinical suspicion. Serum antibody testing, when available, could provide evidence of infection as well as identify patients already immune to the disease.

https://doi.org/10.1016/j.dld.2020.04.004

Mark A. Marinella

**COVID-19 pandemic and the stethoscope: don't forget to sanitize**

Heart & Lung, 2020
French consensus on management of head and neck cancer surgery during COVID-19 pandemic

European Annals of Otorhinolaryngology, Head and Neck Diseases, 2020

Abstract:
In the context of the current pandemic, there is a need for specific advice concerning treatment of patients with Head and Neck cancers. The rule is to limit as much as possible the number of patients in order to reduce the risks of contamination by the SARS-Cov-2 virus for both patients and the caregivers, who are particularly exposed in ENT. The aim is to minimize the risk of loss of opportunity for patients and to anticipate the increased number of cancer patients to be treated at the end of the pandemic, taking into account the degree of urgency, the difficulty of the surgery, the risk of contaminating the caregivers (tracheotomy) and the local situation (whether or not the hospital and intensive care departments are overstretched).

Ethics in the Time of Coronavirus: Recommendations in the COVID-19 Pandemic

Journal of the American College of Surgeons, 2020

Drug repositioning an alternative for the treatment of coronavirus COVID-19

International Journal of Antimicrobial Agents, 2020

Abstract:
Given the extreme importance of the current pandemic caused by COVID-19, and due to the fact that scientists agree that there is no identified pharmacological treatment where possible therapeutic alternatives are raised through drug repositioning. We present a selection of studies involving drugs from different pharmaceutical classes with activity against SARS-CoV-2 and SARS-Cov, with potential use in the treatment of COVID-19 disease.
A. Higgins, Puneeth Iyengar, Brian D Kavanagh, Sameera Kumar, Cecile Le Pechoux, Yolande Lievens, Karin Lindberg, Fiona McDonald, Sara Ramella, Ramesh Rengan, Umberto Ricardi, Andreas Rimner, George B. Rodrigues, Steven E. Schild, Suresh Senan, Charles B. Simone II, Ben J. Slotman, Martin Stuschke, Greg Videtic, Joachim Widder, Sue S. Yom, David Palma

Practice recommendations for lung cancer radiotherapy during the COVID-19 pandemic: An ESTRO-ASTRO consensus statement

Radiotherapy and Oncology, 2020

Abstract:

Background

The COVID-19 pandemic has caused radiotherapy resource pressures and led to increased risks for lung cancer patients and healthcare staff. An international group of experts in lung cancer radiotherapy established this practice recommendation pertaining to whether and how to adapt radiotherapy for lung cancer in the COVID-19 pandemic.

Methods

For this ESTRO & ASTRO endorsed project, 32 experts in lung cancer radiotherapy contributed to the consensus process using a modified Delphi process. We assessed potential adaptations of radiotherapy in two pandemic scenarios. The first, the early pandemic scenario of risk mitigation, is characterized by an altered risk-benefit ratio of radiotherapy for lung cancer patients due to their increased susceptibility for severe COVID-19 infection, and minimization of patient travelling and exposure of our radiotherapy staff. The second, a later pandemic scenario, is characterized by reduced radiotherapy resources. Six common lung cancer cases were assessed for both scenarios: peripherally located stage I NSCLC, locally advanced NSCLC, postoperative radiotherapy after resection of pN2 NSCLC, thoracic radiotherapy and prophylactic cranial irradiation for SCLC and palliative thoracic radiotherapy for stage IV NSCLC.

Results

In a risk-mitigation pandemic scenario, efforts should be made not to compromise the prognosis of lung cancer patients by departing from guideline-recommended radiotherapy practice. In that same scenario, postponement or interruption of radiotherapy treatment of COVID-19 positive patients is generally recommended to avoid exposure of cancer patients and staff to an increased risk of COVID-19 infection. In a severe pandemic scenario characterized by reduced resources, if patients must be triaged, important factors for triage include potential for cure, relative benefit of radiation, life expectancy, and performance status. Case-specific consensus recommendations regarding multimodality treatment strategies and fractionation of radiotherapy are provided.

Conclusion

This joint ESTRO-ASTRO practice recommendation established pragmatic and balanced consensus recommendations in common clinical scenarios of radiotherapy for lung cancer in order to address the challenges of the COVID-19 pandemic.

https://doi.org/10.1016/j.radonc.2020.04.001

Chunqin Long, Huaxiang Xu, Qinglin Shen, Xianghai Zhang, Bing Fan, Chuanhong Wang, Bingliang Zeng, Zicong Li, Xiaofen Li, Honglu Li
Diagnosis of the Coronavirus disease (COVID-19): rRT-PCR or CT?

European Journal of Radiology, Volume 126, 2020

Abstract:

Purpose

To evaluate the diagnostic value of computed tomography (CT) and real-time reverse-transcriptase-polymerase chain reaction (rRT-PCR) for COVID-19 pneumonia.

Methods

This retrospective study included all patients with COVID-19 pneumonia suspicion, who were examined by both CT and rRT-PCR at initial presentation. The sensitivities of both tests were then compared. For patients with a final confirmed diagnosis, clinical and laboratory data, in addition to CT imaging findings were evaluated.

Results

A total of 36 patients were finally diagnosed with COVID-19 pneumonia. Thirty-five patients had abnormal CT findings at presentation, whereas one patient had a normal CT. Using rRT-PCR, 30 patients were tested positive, with 6 cases initially missed. Amongst these 6 patients, 3 became positive in the second rRT-PCR assay (after 2 days, 2 days and 3 days respectively), and the other 3 became positive only in the third round of rRT-PCR tests (after 5 days, 6 days and 8 days respectively). At presentation, CT sensitivity was therefore 97.2%, whereas the sensitivity of initial rRT-PCR was only 83.3%.

Conclusion

rRT-PCR may produce initial false negative results. We suggest that patients with typical CT findings but negative rRT-PCR results should be isolated, and rRT-PCR should be repeated to avoid misdiagnosis.

https://doi.org/10.1016/j.ejrad.2020.108961

Wei-hong LIU, Sheng-nan GUO, Fang WANG, Yang HAO

Understanding of guidance for acupuncture and moxibustion interventions on COVID-19 (Second edition) issued by CAAM

World Journal of Acupuncture - Moxibustion, 2020

Abstract:

At present, the situation of global fight against COVID-19 is serious. WHO (World Health Organization)-China Joint Mission fully confirms the success of “China's model” against COVID-19 in the report. In fact, one particular power in “China's model” is acupuncture and moxibustion of traditional Chinese medicine. To better apply “non-pharmaceutic measures”—the external technique of traditional Chinese medicine, in the article, the main content of Guidance for acupuncture and moxibustion interventions on COVID-19 (Second edition) issued by China Association of Acupuncture–Moxibution is introduced and the discussion is stressed on the selection of moxibustion device and the duration of its exertion.
Can we contain the COVID-19 outbreak with the same measures as for SARS?

The Lancet Infectious Diseases, 2020

Abstract:

Summary

The severe acute respiratory syndrome (SARS) outbreak in 2003 resulted in more than 8000 cases and 800 deaths. SARS was eventually contained by means of syndromic surveillance, prompt isolation of patients, strict enforcement of quarantine of all contacts, and in some areas top-down enforcement of community quarantine. By interrupting all human-to-human transmission, SARS was effectively eradicated. By contrast, by Feb 28, 2020, within a matter of 2 months since the beginning of the outbreak of coronavirus disease 2019 (COVID-19), more than 82 000 confirmed cases of COVID-19 have been reported with more than 2800 deaths. Although there are striking similarities between SARS and COVID-19, the differences in the virus characteristics will ultimately determine whether the same measures for SARS will also be successful for COVID-19. COVID-19 differs from SARS in terms of infectious period, transmissibility, clinical severity, and extent of community spread. Even if traditional public health measures are not able to fully contain the outbreak of COVID-19, they will still be effective in reducing peak incidence and global deaths. Exportations to other countries need not result in rapid large-scale outbreaks, if countries have the political will to rapidly implement countermeasures.

Working through the COVID-19 outbreak: Rapid review and recommendations for MSK and allied health personnel

Journal of Clinical Orthopaedics and Trauma, 2020

Abstract:

The coronavirus (COVID-19) pandemic has caused the world to undergo unprecedented change in a short space of time. This disease has devastated the economy, infringed personal freedom, and has taken a toll on healthcare systems worldwide. This review aims to highlight aspects of this pandemic with a specific emphasis on musculoskeletal work within the secondary care setting.

Timely blood glucose management for the outbreak of 2019 novel coronavirus disease (COVID-19) is urgently needed

Diabetes Research and Clinical Practice, Volume 162, 2020
Alessandro Repici, Roberta Maselli, Matteo Colombo, Roberto Gabbiadini, Marco Spadaccini, Andrea Anderloni, Silvia Carrara, Alessandro Fugazza, Milena Di Leo, Piera Alessia Galtieri, Gaia Pellegatta, Elisa Chiara Ferrara, Elena Azzolini, Michele Lagioia

**Coronavirus (COVID-19) outbreak: what the department of endoscopy should know**

Gastrointestinal Endoscopy, 2020

**Abstract:**

Italy recorded its first case of confirmed acute respiratory illness because of coronavirus on February 18, 2020, soon after the initial reports in China. Since that time, Italy and nations throughout the world have adopted very stringent and severe measures to protect populations from spread of infection. Despite these measures, the number of infected people is growing exponentially, with a significant number of patients developing acute respiratory insufficiency. Endoscopy departments face significant risk for diffusion of respiratory diseases that can be spread via an airborne route, including aspiration of oral and fecal material via endoscopes. The purpose of this article is to discuss the measures, with specific focus on personal protection equipment and dress code modalities, implemented in our hospital to prevent further dissemination of COVID-19 infection.

Pietro Bongini, Alfonso Trezza, Monica Bianchini, Ottavia Spiga, Neri Niccolai

**A possible strategy to fight COVID-19: Interfering with spike glycoprotein trimerization**

Biochemical and Biophysical Research Communications, 2020

**Abstract:**

The recent release of COVID-19 spike glycoprotein allows detailed analysis of the structural features that are required for stabilizing the infective form of its quaternary assembly. Trying to disassemble the trimeric structure of COVID-19 spike glycoprotein, we analyzed single protomer surfaces searching for concave moieties that are located at the three protomer-protomer interfaces. The presence of some druggable pockets at these interfaces suggested that some of the available drugs in Drug Bank could destabilize the quaternary spike glycoprotein formation by binding to these pockets, therefore interfering with COVID-19 life cycle. The approach we propose here can be an additional strategy to fight against the deadly virus. Ligands of COVID-19 spike glycoprotein that we have predicted in the present computational investigation, might be the basis for new experimental studies in vitro and in vivo.

Xiao-ying Xia, Jing Wu, He-lei Liu, Hong Xia, Bei Jia, Wen-xiang Huang
Epidemiological and initial clinical characteristics of patients with family aggregation of COVID-19

Journal of Clinical Virology, Volume 127, 2020

Abstract:

Background
Since December 2019, a new outbreak of the coronavirus disease 2019 (COVID-19) in Wuhan (Hubei, China) and rapidly spread throughout China, however, confirmed cases are still increasing worldwide.

Objectives
To investigate the epidemiological history and initial clinical characteristics of 10 patients with family aggregation of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in Western Chongqing, China.

Study design
Ten patients positive for SARS-CoV-2 nucleic acid detection by real time Reverse Transcription-Polymerase Chain Reaction (RT-PCR), were collected from The People's Hospital of Dazu District, Chongqing. Epidemiological data and laboratory and imaging results were collected on the first day of admission, and analyzed based on the Diagnosis and Treatment Guideline for COVID-19 (5th edition, China).

Results
Of the 10 cases, case A had a history of a temporary stay in Wuhan and transmitted the virus to the others through family gathering, living together, and sharing vehicles. The average age was 56.5 years (± 11.16), six patients were males, and the incubation period was 2–14 days. Dry cough was the main symptom, followed by fever and fatigue. Most patients were clinically classified as ordinary-type, with three cases being severe-type. Chest computed tomography results were nonspecific, mainly with ground-glass attenuation and/or shadow images. Extensive lesion distribution was seen in severe cases. CD4+ lymphocyte counts were 61, 180, and 348 cells/uL in severe-type patients, respectively. Notably, viral nucleic acid values in nasopharyngeal swabs were lower (19, 25, and 26) than those of ordinary-type patients, suggesting a higher viral load. Neutrophil-lymphocyte ratio (NLR) was also higher in severe-type patients

Conclusions
Initial examination results of lower CD4+ lymphocyte counts and RT-PCR-CT values coupled with higher NLR may indicate the severity of COVID-19 infection for these family clusters.

https://doi.org/10.1016/j.jcv.2020.104360

Huibao Li, Siqian Zheng, Fang Liu, Wei Liu, Rongsheng Zhao

Fighting against COVID-19: Innovative strategies for clinical pharmacists

Research in Social and Administrative Pharmacy, 2020

Abstract:
Background

Clinical pharmacists’ routine task is carrying out pharmaceutical care to ensure patients' safe and reasonable medication use. However, under public health emergencies, such as the outbreak of COVID-19, the work strategies of clinical pharmacists need to be modified according to the rapid spread of the disease, where information and resources are usually lack to guide them.

Objective

To retrieve and investigate the prevention and control measures of clinical pharmacists during the outbreak of novel coronavirus, summarize the roles and responsibilities of clinical pharmacists, and to propose innovative strategies for developing pharmacy services under the epidemic.

Methods

The Chinese and English databases, self-media network, website of professional society or medical institution, and clinical trial center platforms were searched, and clinical pharmacists involved in the work against COVID-19 were surveyed and interviewed. Investigate the challenges and needs of frontline medical staffs for treating patients, and formulate strategies based on the actual medical environment.

Results

Clinical pharmacists play a vital role in leading the industry to formulate work instructions, provide frontline medical staff with drug information, and develop innovative pharmacy services to promote the rational use of medicines with collaborative teamwork and close communication according to the epidemic situation of COVID-19. Anti-epidemic work indeed has driven the development of remote pharmacy services.

Conclusion

Facing public health emergencies, clinical pharmacists can give full play to their professional expertise, analyze the current situation rationally, formulate telehealth strategies swiftly, and work in a united and efficient manner to provide innovative pharmacy services to ensure medication safety and rational use of medicine.

https://doi.org/10.1016/j.sapharm.2020.04.003

D. Praveen, Ranadheer Chowdary Puvvada, Vijey Aanandhi M

Janus kinase inhibitor baricitinib is not an ideal option for management of COVID-19

International Journal of Antimicrobial Agents, 2020

Abstract:

The Wuhan outbreak of novel Corona virus infection has been the global focus since December 2019. This infection has become a global pandemic. It is highly important to understand the virology of the pathogen and to explore the therapeutic options for management of this pandemic. Drug repurposing strategies are being considered for management of COVID 19. Among the identified drugs, Baricitinib has become a keen interest for researchers because of its ability to inhibit the viral assembly by the prevention of Clarithrin associated endocytosis. We tried to explore the reasons on why Baricitinib is not an ideal option for COVID 19.
Giampiero Porzio, Alessio Cortellini, Eduardo Bruera, Lucilla Verna, Giulio Ravoni, Flaminia Peris, Giuseppe Spinelli

**Home Care for Cancer Patients During COVID-19 Pandemic: The Double Triage Protocol**

Journal of Pain and Symptom Management, 2020

**Abstract:**

Patients with cancer have an increased risk of developing severe forms of coronavirus disease 2019, and patients with advanced cancer who are followed at home represent a particularly frail population. Although with substantial differences, the challenges that cancer care professionals have to face during a pandemic are quite similar to those posed by natural disasters. We have already managed the oncological home care service in L’Aquila (middle Italy) after the 2009 earthquake. With this letter, we want to share the procedures and tools that we have started using at the home care service of the Tuscany Tumor Association during the coronavirus disease 2019 pandemic.

Cathal A. Cadogan, Carmel M. Hughes

**On the frontline against COVID-19: Community pharmacists’ contribution during a public health crisis**

Research in Social and Administrative Pharmacy, 2020

**Abstract:**

The global spread of COVID-19 is placing unprecedented demands on healthcare services. In this time of crisis, innovative and adaptive methods of practising will be required across all health professions. In order to maximise the use of current available resources, it is vital that existing services are comprehensively reviewed and full use is made of any unrealised potential among healthcare providers. Community pharmacy is one of a number of health professions that has a key role to play in responding to the current pandemic. As the scope of community pharmacy practice varies considerably across countries, it is important to examine ways in which the profession can assist with the public health response to COVID-19 and maintaining the continuity of healthcare services. This article seeks to highlight roles and activities that community pharmacists can undertake to help in relieving pressure on other areas of the health service, such as general practice. This information could help to inform future decisions about the restructuring of existing health services by governments, public health bodies and policy makers in response to public health crises such as COVID-19.

Miguel Ángel Rodríguez, Irene Crespo, Hugo Olmedillas
Exercising in times of COVID-19: what do experts recommend doing within four walls?

Revista Española de Cardiología (English Edition), 2020

https://doi.org/10.1016/j.rec.2020.04.001

Nianqi Liu, Fan Zhang, Cun Wei, Yanpu Jia, Zhilei Shang, Luna Sun, Lili Wu, Zhuoer Sun, Yaoguang Zhou, Yan Wang, Weizhi Liu

Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: Gender differences matter

Psychiatry Research, Volume 287, 2020

Abstract:
The outbreak of COVID-19 in China in December 2019 has been identified as a pandemic and a health emergency of global concern. Our objective was to investigate the prevalence and predictors of posttraumatic stress symptoms (PTSS) in China hardest-hit areas during COVID-19 outbreak, especially exploring the gender difference existing in PTSS. One month after the December 2019 COVID-19 outbreak in Wuhan China, we surveyed PTSS and sleep qualities among 285 residents in Wuhan and surrounding cities using the PTSD Checklist for DSM-5 (PCL-5) and 4 items from the Pittsburgh Sleep Quality Index (PSQI). Hierarchical regression analysis and non-parametric test were used to analyze the data. Results indicated that the prevalence of PTSS in China hardest-hit areas a month after the COVID-19 outbreak was 7%. Women reported significant higher PTSS in the domains of re-experiencing, negative alterations in cognition or mood, and hyper-arousal. Participants with better sleep quality or less frequency of early awakenings reported lower PTSS. Professional and effective mental health services should be designed in order to aid the psychological wellbeing of the population in affected areas, especially those living in hardest-hit areas, females and people with poor sleep quality.

https://doi.org/10.1016/j.psychres.2020.112921

Ronan Thibault, Didier Quilliot, Philippe Seguin, Fabienne Tamion, Stéphane Schneider, Pierre Déchelotte


Nutrition Clinique et Métabolisme, 2020

Abstract:
L’épidémie virale causée par le nouveau Coronavirus SARS-CoV-2 est responsable de la maladie liée au Coronavirus-2019 (Covid-19). Cette épidémie impose des bouleversements dans nos organisations en établissements de santé qui ne doivent pas occulter l’importance du soin nutritionnel pour tous les patients qui le nécessitent. Le diagnostic nutritionnel et la prise en charge nutritionnelle précoce des patients infectés Covid-19 doivent être intégrés dans la stratégie...

The viral epidemic caused by the new Coronavirus SARS-CoV-2 is responsible for the new Coronavirus disease -2019 (Covid-19). This epidemic imposes upheavals in our organizations in healthcare centres which should not obscure the importance of nutritional care. The nutritional diagnosis and the early nutritional care management of Covid-19 infected patients must be integrated into the overall therapeutic strategy, as with any acute situation of acute illness. This document was prepared by the French speaking Society for Clinical Nutrition and Metabolism (SFNCM) in the emergency of the health crisis by a group of experts, based on the national and international recommendations available in the field of malnutrition, critical illness, metabolic stress and intensive care medicine on March 23, 2020. We hope that this article will bring to healthcare professionals, especially those not specialized in nutrition, useful landmarks to help them to manage hospitalized patients, infected or not by Covid-19 in the context of epidemic and intrahospital confinement.

https://doi.org/10.1016/j.nupar.2020.03.001

M. Cellina, G. Oliva

Acute pulmonary embolism in a patient with COVID-19 pneumonia

Diagnostic and Interventional Imaging, 2020

https://doi.org/10.1016/j.diii.2020.04.001

Emily E. Weber Lebrun, Nash S. Moawad, Eric I. Rosenberg, Timothy E. Morey, Laurie Davies, William O. Collins, John C. Smulian

COVID-19 Pandemic: Staged Management of Surgical Services for Gynecology and Obstetrics

American Journal of Obstetrics and Gynecology, 2020

Abstract:

The COVID-19 pandemic has required an unprecedented global healthcare response requiring maintenance of existing hospital-based services while simultaneously preparing for high-acuity care for infected and sick individuals. Hospitals must protect patients and the diverse healthcare workforce by conserving personal protective equipment and redeployment of facility resources. While each hospital or health system must evaluate their own capabilities and surge capacity, we present principles of management of surgical services during a health emergency and provide specific guidance to help with decision-making. We review the limited evidence from past hospital and community responses to various health emergencies and focus on systematic methods for
adjusting surgical services to create capacity, addressing the specific risks of COVID-19. Successful strategies for tiered reduction of surgical cases involve multi-disciplinary engagement of the entire healthcare system and use of a structured risk-assessment categorization scheme which can be applied across the institution. Our institution developed and operationalized this approach over three working days, indicating that immediate implementation is feasible in response to an unforeseen healthcare emergency.

https://doi.org/10.1016/j.ajog.2020.03.038

Antonio V. Sterpetti

Lessons Learned During the COVID-19 Virus Pandemic

Journal of the American College of Surgeons, 2020

https://doi.org/10.1016/j.jamcollsurg.2020.03.018


Clinical, laboratory and imaging features of COVID-19: A systematic review and meta-analysis

Travel Medicine and Infectious Disease, 2020

Abstract:

Introduction

An epidemic of Coronavirus Disease 2019 (COVID-19) began in December 2019 in China leading to a Public Health Emergency of International Concern (PHEIC). Clinical, laboratory, and imaging features have been partially characterized in some observational studies. No systematic reviews on COVID-19 have been published to date.

Methods

We performed a systematic literature review with meta-analysis, using three databases to assess clinical, laboratory, imaging features, and outcomes of COVID-19 confirmed cases. Observational studies and also case reports, were included, and analyzed separately. We performed a random-effects model meta-analysis to calculate pooled prevalences and 95% confidence intervals (95%CI).

Results

660 articles were retrieved for the time frame (1/1/2020-2/23/2020). After screening, 27 articles were selected for full-text assessment, 19 being finally included for qualitative and quantitative analyses. Additionally, 39 case report articles were included and analyzed separately. For 656 patients, fever (88.7%, 95%CI 84.5–92.9%), cough (57.6%, 95%CI 40.8–74.4%) and dyspnea (45.6%, 95%CI 10.9–80.4%) were the most prevalent manifestations. Among the patients, 20.3%
(95%CI 10.0–30.6%) required intensive care unit (ICU), 32.8% presented with acute respiratory distress syndrome (ARDS) (95%CI 13.7–51.8), 6.2% (95%CI 3.1–9.3) with shock. Some 13.9% (95%CI 6.2–21.5%) of hospitalized patients had fatal outcomes (case fatality rate, CFR).

**Conclusion**

COVID-19 brings a huge burden to healthcare facilities, especially in patients with comorbidities. ICU was required for approximately 20% of polymorbid, COVID-19 infected patients and hospitalization was associated with a CFR of >13%. As this virus spreads globally, countries need to urgently prepare human resources, infrastructure and facilities to treat severe COVID-19.

https://doi.org/10.1016/j.tmaid.2020.101623

Chih-Cheng Lai, Tzu-Ping Shih, Wen-Chien Ko, Hung-Jen Tang, Po-Ren Hsueh

**Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges**


**Abstract:**

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; previously provisionally named 2019 novel coronavirus or 2019-nCoV) disease (COVID-19) in China at the end of 2019 has caused a large global outbreak and is a major public health issue. As of 11 February 2020, data from the World Health Organization (WHO) have shown that more than 43 000 confirmed cases have been identified in 28 countries/regions, with >99% of cases being detected in China. On 30 January 2020, the WHO declared COVID-19 as the sixth public health emergency of international concern. SARS-CoV-2 is closely related to two bat-derived severe acute respiratory syndrome-like coronaviruses, bat-SL-CoVZC45 and bat-SL-CoVZXC21. It is spread by human-to-human transmission via droplets or direct contact, and infection has been estimated to have mean incubation period of 6.4 days and a basic reproduction number of 2.24–3.58. Among patients with pneumonia caused by SARS-CoV-2 (novel coronavirus pneumonia or Wuhan pneumonia), fever was the most common symptom, followed by cough. Bilateral lung involvement with ground-glass opacity was the most common finding from computed tomography images of the chest. The one case of SARS-CoV-2 pneumonia in the USA is responding well to remdesivir, which is now undergoing a clinical trial in China. Currently, controlling infection to prevent the spread of SARS-CoV-2 is the primary intervention being used. However, public health authorities should keep monitoring the situation closely, as the more we can learn about this novel virus and its associated outbreak, the better we can respond.

https://doi.org/10.1016/j.ijantimicag.2020.105924

Rui Zhang, Xuebin Wang, Leng Ni, Xiao Di, Baitao Ma, Shuai Niu, Changwei Liu, Russel J. Reiter

**COVID-19: Melatonin as a potential adjuvant treatment**

Life Sciences, Volume 250, 2020

**Abstract:**
This article summarizes the likely benefits of melatonin in the attenuation of COVID-19 based on its putative pathogenesis. The recent outbreak of COVID-19 has become a pandemic with tens of thousands of infected patients. Based on clinical features, pathology, the pathogenesis of acute respiratory disorder induced by either highly homogenous coronaviruses or other pathogens, the evidence suggests that excessive inflammation, oxidation, and an exaggerated immune response very likely contribute to COVID-19 pathology. This leads to a cytokine storm and subsequent progression to acute lung injury (ALI)/acute respiratory distress syndrome (ARDS) and often death. Melatonin, a well-known anti-inflammatory and anti-oxidative molecule, is protective against ALI/ARDS caused by viral and other pathogens. Melatonin is effective in critical care patients by reducing vessel permeability, anxiety, sedation use, and improving sleeping quality, which might also be beneficial for better clinical outcomes for COVID-19 patients. Notably, melatonin has a high safety profile. There is significant data showing that melatonin limits virus-related diseases and would also likely be beneficial in COVID-19 patients. Additional experiments and clinical studies are required to confirm this speculation.

https://doi.org/10.1016/j.lfs.2020.117583

Zhenyu Li, Jingwu Ge, Meiling Yang, Jianping Feng, Mei Qiao, Riyue Jiang, Jiangjiang Bi, Gaofeng Zhan, Xiaolin Xu, Long Wang, Qin Zhou, Chenliang Zhou, Yinbing Pan, Shijiang Liu, Haiwei Zhang, Jianjun Yang, Bin Zhu, Yimin Hu, Kenji Hashimoto, Yan Jia, Haofei Wang, Rong Wang, Cunming Liu, Chun Yang

**Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control**

Brain, Behavior, and Immunity, 2020

**Abstract:**

Since December 2019, more than 79,000 people have been diagnosed with infection of the Corona Virus Disease 2019 (COVID-19). A large number of medical staff was sent to Wuhan city and Hubei province to aid COVID-19 control. Psychological stress, especially vicarious traumatization caused by the COVID-19 pandemic, should not be ignored. To address this concern, the study employed a total of 214 general public and 526 nurses (i.e., 234 front-line nurses and 292 non-front-line nurses) to evaluate vicarious traumatization scores via a mobile app-based questionnaire. Front-line nurses are engaged in the process of providing care for patients with COVID-19. The results showed that the vicarious traumatization scores for front-line nurses including scores for physiological and psychological responses, were significantly lower than those of non-front-line nurses (P < 0.001). Interestingly, the vicarious traumatization scores of the general public were significantly higher than those of the front-line nurses (P < 0.001); however, no statistical difference was observed compared to the scores of non-front-line nurses (P > 0.05). Therefore, increased attention should be paid to the psychological problems of the medical staff, especially non-front-line nurses, and general public under the situation of the spread and control of COVID-19. Early strategies that aim to prevent and treat vicarious traumatization in medical staff and general public are extremely necessary.

https://doi.org/10.1016/j.bbi.2020.03.007

Razvigor Darlenski, Nikolai Tsankov
Covid-19 pandemic and the skin - What should dermatologists know?
Clinics in Dermatology, 2020

Abstract:
The World has changed dramatically since the COVID-19 pandemic began. Together with our social, occupational, and personal life, the new corona virus poses novel challenges for all physicians, including dermatologists. Despite the virus not being dermatotropic, several skin conditions have emerged, mainly as a result of prolonged contact to personal protective equipment and excessive personal hygiene. Pressure injury, contact dermatitis, itch, pressure urticaria, and exacerbation of pre-existing skin diseases, including seborrheic dermatitis and acne, have been described. We have focused on the dermatologic aspects of COVID-19 infection, so that dermatologist may be aware of the skin complications and the preventive measures to be taken in the COVID-19 pandemic.

https://doi.org/10.1016/j.clindermatol.2020.03.012

Stephan A. Schwartz

Climate Change, Covid-19, Preparedness, and Consciousness
EXPLORE, 2020

https://doi.org/10.1016/j.explore.2020.02.022

Juan A. Siordia

Epidemiology and clinical features of COVID-19: A review of current literature
Journal of Clinical Virology, Volume 127, 2020

Abstract:
Coronavirus disease 2019 is a pandemic influencing the first half of the year 2020. The virus has rapidly spread to many countries. Studies are rapidly published to share information regarding epidemiology, clinical and diagnostic patterns, and prognosis. The following review condenses the surge of information into an organized format.

https://doi.org/10.1016/j.jcv.2020.104357

M.R. Desjardins, A. Hohl, E.M. Delmelle

Rapid surveillance of COVID-19 in the United States using a prospective space-time scan statistic: Detecting and evaluating emerging clusters
Applied Geography, Volume 118, 2020

Abstract:
Coronavirus disease 2019 (COVID-19) was first identified in Wuhan, China in December 2019, and is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 is a
pandemic with an estimated death rate between 1% and 5%; and an estimated $R_0$ between 2.2 and 6.7 according to various sources. As of March 28th, 2020, there were over 649,000 confirmed cases and 30,249 total deaths, globally. In the United States, there were over 115,500 cases and 1891 deaths and this number is likely to increase rapidly. It is critical to detect clusters of COVID-19 to better allocate resources and improve decision-making as the outbreaks continue to grow. Using daily case data at the county level provided by Johns Hopkins University, we conducted a prospective spatial-temporal analysis with SaTScan. We detect statistically significant space-time clusters of COVID-19 at the county level in the U.S. between January 22nd-March 9th, 2020, and January 22nd-March 27th, 2020. The space-time prospective scan statistic detected “active” and emerging clusters that are present at the end of our study periods – notably, 18 more clusters were detected when adding the updated case data. These timely results can inform public health officials and decision makers about where to improve the allocation of resources, testing sites; also, where to implement stricter quarantines and travel bans. As more data becomes available, the statistic can be rerun to support timely surveillance of COVID-19, demonstrated here. Our research is the first geographic study that utilizes space-time statistics to monitor COVID-19 in the U.S.

https://doi.org/10.1016/j.apgeog.2020.102202

Rongrong Yang, Xien Gui, Yong Xiong

Patients with respiratory symptoms are at greater risk of COVID-19 transmission

Respiratory Medicine, Volume 165, 2020

https://doi.org/10.1016/j.rmed.2020.105935


Early nutritional supplementation in non-critically ill patients hospitalized for the 2019 novel coronavirus disease (COVID-19): Rationale and feasibility of a shared pragmatic protocol

Nutrition, 2020

Abstract:

Objectives

Beginning in December 2019, the 2019 novel coronavirus disease (COVID-19) has caused a pneumonia epidemic that began in Wuhan, China, and is rapidly spreading throughout the whole world. Italy is the hardest hit country after China. Considering the deleterious consequences of malnutrition, which certainly can affect patients with COVID-19, the aim of this article is to present a pragmatic protocol for early nutritional supplementation of non-critically ill patients hospitalized for COVID-19 disease. It is based on the observation that most patients present at admission with severe inflammation and anorexia leading to a drastic reduction of food intake, and that a substantial
percentage develops respiratory failure requiring non-invasive ventilation or even continuous positive airway pressure.

Methods

High-calorie dense diets in a variety of different consistencies with highly digestible foods and snacks are available for all patients. Oral supplementation of whey proteins as well as intravenous infusion of multivitamin, multimineral trace elements solutions are implemented at admission. In the presence of 25-hydroxyvitamin D deficit, cholecalciferol is promptly supplied. If nutritional risk is detected, two to three bottles of protein-calorie oral nutritional supplements (ONS) are provided. If <2 bottles/d of ONS are consumed for 2 consecutive days and/or respiratory conditions are worsening, supplemental/total parenteral nutrition is prescribed.

Conclusion

We are aware that our straight approach may be debatable. However, to cope with the current emergency crisis, its aim is to promptly and pragmatically implement nutritional care in patients with COVID-19, which might be overlooked despite being potentially beneficial to clinical outcomes and effective in preventing the consequences of malnutrition in this patient population.

https://doi.org/10.1016/j.nut.2020.110835


Clinical and microbiological effect of a combination of hydroxychloroquine and azithromycin in 80 COVID-19 patients with at least a six-day follow up: A pilot observational study

Travel Medicine and Infectious Disease, 2020

Abstract:

Background

We need an effective treatment to cure COVID-19 patients and to decrease virus carriage duration.

Methods

We conducted an uncontrolled non-comparative observational study in a cohort of 80 relatively mildly infected inpatients treated with a combination of hydroxychloroquine and azithromycin over a period of at least three days, with three main measurements: clinical outcome, contagiousness as assessed by PCR and culture, and length of stay in infectious disease unit (IDU).

Results

All patients improved clinically except one 86 year-old patient who died, and one 74 year-old patient still in intensive care. A rapid fall of nasopharyngeal viral load was noted, with 83% negative at Day7, and 93% at Day8. Virus cultures from patient respiratory samples were negative in 97.5% of
patients at Day5. Consequently patients were able to be rapidly discharged from IDU with a mean length of stay of five days.

Conclusion

We believe there is urgency to evaluate the effectiveness of this potentially-life saving therapeutic strategy at a larger scale, both to treat and cure patients at an early stage before irreversible severe respiratory complications take hold and to decrease duration of carriage and avoid the spread of the disease. Furthermore, the cost of treatment is negligible.

https://doi.org/10.1016/j.tmaid.2020.101663

Wei Wei, Dandan Zheng, Yu Lei, Shen Wu, Vivek Verma, Yongsheng Liu, Xueyan Wei, Jianping Bi, Desheng Hu, Guang Han

Radiotherapy Workflow and Protection Procedures During the Coronavirus Disease 2019 (COVID-19) Outbreak: Experience of the Hubei Cancer Hospital in Wuhan, China

Radiotherapy and Oncology, 2020

Abstract:

The epidemic of Coronavirus Disease 2019 (COVID-19) first broke out in Wuhan in December 2019, and reached its peak in Wuhan in February 2020. It became a major public health challenge for China, and evolved into a global pandemic in March 2020. For radiation oncology departments, the COVID-19 pandemic presents a unique challenge for disease protection and prevention for both patients and staff, owing to the weakened immune systems of cancer patients and the need to deliver timely and uninterrupted radiotherapy. At the Hubei Cancer Hospital, the only hospital in Wuhan that specializes in oncology, we organized an emergency infection control team to lead special efforts to combat COVID-19 during this challenging time. Under its lead, the following measures were implemented in the radiation oncology department: the radiotherapy clinic was divided into different infection control zones with varying levels of protection; special staff and patient infection control training sessions were conducted and appropriate measures deployed; daily symptom testing criteria were implemented for patients undergoing treatment; special rotating schedules and infection control methods were implemented for various staff members such as medical physicists/dosimetrists and radiation therapists; modified radiotherapy workflow and specialized treatment area cleaning and disinfection policies and procedures were designed and executed; and special medical waste disposal methods were implemented. We began treating patients using this new COVID-19 radiotherapy treatment workflow and infection control measures on January 30, 2020. During more than one and a half months of uninterrupted radiation oncology clinical operation through the worst of the Wuhan outbreak, no known COVID-19 infection occurred at our radiotherapy center to our patients or employees. This report may provide valuable information for other radiation oncology departments during this unprecedented public health crisis.

https://doi.org/10.1016/j.radonc.2020.03.029

Jia He, Bo Wu, Yaqin Chen, Jianjun Tang, Qiming Liu, Shenghua Zhou, Chen Chen, Qingwu Qin, Kang Huang, Jianlei Lv, Yan Chen, Daoquan Peng
Characteristic Electrocardiographic Manifestations in Patients With COVID-19

Canadian Journal of Cardiology, 2020

Abstract:
Des cas d’atteinte cardiaque se manifestant par des changements décelables à l’électrocardiogramme (ECG) ont été rapportés chez certains patients atteints de COVID-19. Nous exposons les cas de deux patients atteints de COVID-19 dont les ECG révèlent une détérioration de la fonction cardiaque causée par la maladie. Dans le premier cas, le patient a présenté temporairement un aspect SIQIIITIII suivi d’un bloc auriculo-ventriculaire quasi complet réversible, tandis que dans le deuxième cas, le patient a présenté une élévation du segment ST accompagnée d’une tachycardie ventriculaire multifocale. Ces anomalies électroencéphalographiques chez des patients gravement atteints de COVID-19 pourraient s’expliquer par l’hypoxie et les lésions inflammatoires provoquées par le virus.


COVID-19: A promising cure for the global panic

Science of The Total Environment, Volume 725, 2020

Abstract:
The novel Coronavirus disease 2019 (COVID-19) is caused by SARS-CoV-2, which is the causative agent of a potentially fatal disease that is of great global public health concern. The outbreak of COVID-19 is wreaking havoc worldwide due to inadequate risk assessment regarding the urgency of the situation. The COVID-19 pandemic has entered a dangerous new phase. When compared with SARS and MERS, COVID-19 has spread more rapidly, due to increased globalization and adaptation of the virus in every environment. Slowing the spread of the COVID-19 cases will significantly reduce the strain on the healthcare system of the country by limiting the number of people who are severely sick by COVID-19 and need hospital care. Hence, the recent outburst of COVID-19 highlights an urgent need for therapeutics targeting SARS-CoV-2. Here, we have discussed the structure of virus; varying symptoms among COVID-19, SARS, MERS and common flu; the probable mechanism behind the infection and its immune response. Further, the current treatment options, drugs available, ongoing trials and recent diagnostics for COVID-19 have been discussed. We suggest traditional Indian medicinal plants as possible novel therapeutic approaches, exclusively targeting SARS-CoV-2 and its pathways.

https://doi.org/10.1016/j.scitotenv.2020.138277

John R. Potts

Residency and Fellowship Program Accreditation: Effects of the Novel Coronavirus (COVID-19) Pandemic

Journal of the American College of Surgeons, 2020
Courtney Davis, Ng Kee Chong, Jean Yin Oh, Amerie Baeg, Kumudhini Rajasegaran, Chu Shan Elaine Chew

Caring for children and adolescents with eating disorders in the current COVID-19 pandemic: A Singapore perspective

Journal of Adolescent Health, 2020

Abstract:

Our public pediatric tertiary hospital in Singapore has been a part of a robust public health response to COVID-19 that has been calibrated in a timely manner to the evolving international situation. As of mid-March, Singapore remains in a containment mode with enhanced surveillance and limited community spread. Within this context, our service for pediatric eating disorder care has had to make significant adaptations to our models of service delivery as well as respond to the changing psychosocial needs of our patients. Given infection control requirements, we have instituted modular staffing for our inpatient and outpatient settings, necessitating task shifting and an increased use of technology for communication. Due to reduced outpatient capacity and the need to minimize non-urgent trips to the hospital, we have implemented telemedicine and have leveraged on partnerships with school counselors and other community partners. “Coronaphobia” has influenced our patients’ willingness to attend visits and worsened existing health anxiety for some. Responsiveness to families’ and patients’ health and financial concerns has been essential. As COVID-19 impacts more countries, our institution’s experience can provide insight into challenges and possible adaptations to providing ongoing care for eating disorder patients in this environment.

Kaihao Liang

Mathematical model of infection kinetics and its analysis for COVID-19, SARS and MERS

Infection, Genetics and Evolution, Volume 82, 2020

Abstract:

The purpose of this paper is to reveal the spread rules of the three pneumonia: COVID-19, SARS and MERS. We compare the new spread characteristics of COVID-19 with those of SARS and MERS. By considering the growth rate and inhibition constant of infectious diseases, their propagation growth model is established. The parameters of the three coronavirus transmission growth models are obtained by nonlinear fitting. Parametric analysis shows that the growth rate of COVID-19 is about twice that of the SARS and MERS, and the COVID-19 doubling cycle is two to three days, suggesting that the number of COVID-19 patients would double in two to three days without human intervention. The infection inhibition constant in Hubei is two orders of magnitude lower than in other regions, which reasonably explains the situation of the COVID-19 outbreak in Hubei.
Maximizing the Calm Before the Storm: Tiered Surgical Response Plan for Novel Coronavirus (COVID-19)

Journal of the American College of Surgeons, 2020

Abstract:

The novel coronavirus (COVID-19) was first diagnosed in Wuhan, China in December 2019 and has now spread throughout the world, being verified by the World Health Organization as a Pandemic on March 11th. This had led to the calling of a national emergency on March 13th in the United States. Many hospitals, healthcare networks, and specifically Departments of Surgery are asking the same questions of how to cope and plan for surge capacity, personnel attrition, novel infrastructure utilization, and resource exhaustion. Herein, we present a tiered plan for surgical department planning based on incident command levels. This includes Acute Care Surgeon deployment (given their critical care training and vertically integrated position in the hospital), recommended infrastructure and transfer utilization, triage principles, and faculty, resident and advanced care practitioner deployment.

https://doi.org/10.1016/j.jamcollsurg.2020.03.019

The cancellation of mass gatherings (MGs)? Decision making in the time of COVID-19

Travel Medicine and Infectious Disease, 2020

Abstract:

Our recommendation, as experts who have monitored health hazards at the Hajj for over 15 years, especially if the situation with COVID-19 continues to escalate globally is that Hajj 2020 will be at risk of being suspended and a means for Muslims to fulfill their rights in the future either personally or even by proxy need to be announced. The same holds true for the Summer 2020 Olympics in Japan and for many other MGs and large gatherings. Decisions in the time of COVID-19 will be closely followed and will be a blueprint for other mass gatherings.


COVID-19 and mental health: A review of the existing literature

Asian Journal of Psychiatry, Volume 52, 2020

Abstract:

The COVID-19 pandemic is a major health crisis affecting several nations, with over 720,000 cases and 33,000 confirmed deaths reported to date. Such widespread outbreaks are associated with adverse mental health consequences. Keeping this in mind, existing literature on the COVID-19
outbreak pertinent to mental health was retrieved via a literature search of the PubMed database. Published articles were classified according to their overall themes and summarized. Preliminary evidence suggests that symptoms of anxiety and depression (16–28%) and self-reported stress (8%) are common psychological reactions to the COVID-19 pandemic, and may be associated with disturbed sleep. A number of individual and structural variables moderate this risk. In planning services for such populations, both the needs of the concerned people and the necessary preventive guidelines must be taken into account. The available literature has emerged from only a few of the affected countries, and may not reflect the experience of persons living in other parts of the world. In conclusion, subsyndromal mental health problems are a common response to the COVID-19 pandemic. There is a need for more representative research from other affected countries, particularly in vulnerable populations.

https://doi.org/10.1016/j.ajp.2020.102066

Jaffar A. Al-Tawfiq

Asymptomatic coronavirus infection: MERS-CoV and SARS-CoV-2 (COVID-19)

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101608

Lise Alschuler, Andrew Weil, Randy Horwitz, Paul Stamets, Ann Marie Chiasson, Robert Crocker, Victoria Maizes

Integrative considerations during the COVID-19 pandemic

EXPLORE, 2020

https://doi.org/10.1016/j.explore.2020.03.007

Awadhesh Kumar Singh, Akriti Singh, Altamash Shaikh, Ritu Singh, Anoop Misra

Chloroquine and hydroxychloroquine in the treatment of COVID-19 with or without diabetes: A systematic search and a narrative review with a special reference to India and other developing countries

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 3, 2020, Pages 241-246

Abstract:

Background and aims

No drugs are currently approved for Coronavirus Disease-2019 (COVID-19), although some have been tried. In view of recent studies and discussion on chloroquine and hydroxychloroquine (HCQ), we aimed to review existing literature and relevant websites regarding these drugs and COVID-19, adverse effects related to drugs, and related guidelines.
Aims and methods

We systematically searched the PubMed database up till March 21, 2020 and retrieved all the articles published on chloroquine and HCQ and COVID-19.

Results

Two small human studies have been conducted with both these drugs in COVID-19, and have shown significant improvement in some parameters in patients with COVID-19.

Conclusion

Considering minimal risk upon use, a long experience of use in other diseases, cost-effectiveness and easy availability across India, we propose that both these drugs are worthy of fast track clinical trial for treatment, and may be carefully considered for clinical use as experimental drugs. Since HCQ has been approved for treatment of diabetes in India, it should be further researched in diabetes and COVID-19, a subgroup where significant mortality has been shown.

https://doi.org/10.1016/j.dsx.2020.03.011

Alessandro Repici, Fabio Pace, Roberto Gabbiadini, Matteo Colombo, …Prateek Sharma

Endoscopy units and the COVID-19 Outbreak: A Multi-Center Experience from Italy

Gastroenterology, 2020

https://doi.org/10.1053/j.gastro.2020.04.003

Minghe Zhou, Fang Tang, Yunjian Wang, Hanxiao Nie, Luyang Zhang, Guohua You, Min Zhang

Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China

Journal of Hospital Infection, 2020

Abstract:

Summary

The study analyzed health care workers’ (HCWs) knowledge, practices, and attitudes regarding COVID-19. A cross-sectional survey was conducted from 4th February to 8th February 2020 involving a total of 1357 HCWs across 10 hospitals in Henan, China. Of those surveyed, 89% of HCWs had sufficient knowledge of COVID-19, more than 85% feared self-infection with the virus, and 89.7% followed correct practices regarding COVID-19. In addition to knowledge level, some risk factors including work experience and job category influenced HCWs’ attitudes and practice concerning COVID-19. Measures must be taken to protect HCWs from risks linked to job category, work experience, working hours, educational attainment, and frontline HCWs.

https://doi.org/10.1016/j.jhin.2020.04.012

Jaclyn H. Jansen, Rachel L. Day
A novel presentation of COVID-19 via community acquired infection

Visual Journal of Emergency Medicine, Volume 20, 2020

https://doi.org/10.1016/j.visj.2020.100760

Wenjun Cao, Ziwei Fang, Guoqiang Hou, Mei Han, Xinrong Xu, Jiaxin Dong, Jianzhong Zheng

The psychological impact of the COVID-19 epidemic on college students in China

Psychiatry Research, Volume 287, 2020

Abstract:

A COVID-19 epidemic has been spreading in China and other parts of the world since December 2019. The epidemic has brought not only the risk of death from infection but also unbearable psychological pressure. We sampled college students from Changzhi medical college by using cluster sampling. They responded to a questionnaire packet that included the 7-item Generalized Anxiety Disorder Scale (GAD-7) and those inquiring the participants’ basic information. We received 7,143 responses. Results indicated that 0.9% of the respondents were experiencing severe anxiety, 2.7% moderate anxiety, and 21.3% mild anxiety. Moreover, living in urban areas (OR = 0.810, 95% CI = 0.709 - 0.925), family income stability (OR = 0.726, 95% CI = 0.645 - 0.817) and living with parents (OR = 0.752, 95% CI = 0.596 - 0.950) were protective factors against anxiety. Moreover, having relatives or acquaintances infected with COVID-19 was a risk factor for increasing the anxiety of college students (OR = 3.007, 95% CI = 2.377 - 3.804). Results of correlation analysis indicated that economic effects, and effects on daily life, as well as delays in academic activities, were positively associated with anxiety symptoms (P < .001). However, social support was negatively correlated with the level of anxiety (P < .001). It is suggested that the mental health of college students should be monitored during epidemics.

https://doi.org/10.1016/j.psychres.2020.112934

Vivek N. Prachand, Ross Milner, Peter Angelos, Mitchell C. Posner, John J. Fung, Nishant Agrawal, Valluvan Jeevanandam, Jeffrey B. Matthews

Medically-Necessary, Time-Sensitive Procedures: A Scoring System to Ethically and Efficiently Manage Resource Scarcity and Provider Risk During the COVID-19 Pandemic

Journal of the American College of Surgeons, 2020

Abstract:

Hospitals have severely curtailed the performance of non-urgent surgical procedures in anticipation of the need to redeploy healthcare resources to meet the projected massive medical needs of patients with Coronavirus Disease 2019 (COVID-19). Surgical treatment of non-COVID-19 related disease during this period, however, still remains necessary. The decision to proceed with Medically-Necessary, Time-Sensitive (MeNTS) procedures in the setting of the COVID-19 pandemic requires incorporation of factors (resource limitations, COVID-19 transmission risk to providers and patients) heretofore not overtly considered by surgeons in the already complicated processes of
clinical judgment and shared decision-making. We describe a scoring system that systematically integrates these factors to facilitate decision-making and triage for MeNTS procedures and appropriately weighs individual patient risks with the ethical necessity of optimizing public health concerns. This approach is applicable across a broad range of hospital settings (academic and community, urban and rural) in the midst of the pandemic and may be able to inform case triage as OR capacity resumes once the acute phase of the pandemic subsides.


Lin Ang, Hye Won Lee, Anna Kim, Ju Ah Lee, Junhua Zhang, Myeong Soo Lee

Herbal medicine for treatment of children diagnosed with COVID-19: A review of guidelines

Complementary Therapies in Clinical Practice, Volume 39, 2020

Abstract:

This review aimed to summarize and analyze the pattern identification (PI), herbal formulae, and composition of herbs provided by recent guidelines for the treatment of pediatric COVID-19. Seven data sources were reviewed until March 25, 2020. We analyzed the herbal formulae included in the guidelines and performed a network analysis to identify the frequency of herbs recommended in the herbal formulae. All 3 guidelines were provincial guidelines from China. Our results showed that there were 4 stages, 12 PIs, and 13 herbal formulae recommended by the provincial guidelines. These herbal formulae included a total of 56 herbs. Based on our network analysis, Scutellariae Radix was paired with Artemisiae Annuae Herba in one cluster. In another cluster, Armeniacae Semen was paired with Coicis Semen and Ephedrae Herba was paired with Gypsum Fibrosum. This review serves as a reference for the use of traditional medicine in the treatment of pediatric COVID-19.

https://doi.org/10.1016/j.ctcp.2020.101174

Sung-Wan Kim, Kuan-Pin Su

Using psychoneuroimmunity against COVID-19

Brain, Behavior, and Immunity, 2020

Abstract:

The worldwide outbreak of coronavirus disease 2019 (COVID-19) raises concerns of widespread panic and anxiety in individuals subjected to the real or perceived threat of the virus. Compared to general populations, patients who are institutionalized in a closed unit are also very vulnerable to COVID-19 infection and complications. This crisis touched on difficult issues of not only psychiatric care and ethics, but also psychological impacts to psychiatric care givers. In this Viewpoint, we address both physical and biopsychosocial aspects of this infection, as well as the psychoneuroimmunity of preventive strategies of healthy lifestyle, regular exercise, balanced nutrition, quality sleep and a strong connection with people. Social distancing and wearing masks might help us from pathogen exposure, yet such these measures also prevent us from expressing compassion and friendliness. Therefore, all forms of psychological support should be routinely
implemented not only to consider psychological resilience but also to enhance psychoneuroimmunity against COVID-19.

https://doi.org/10.1016/j.bbi.2020.03.025


**Precautions and Procedures for Coronary and Structural Cardiac Interventions during the COVID-19 Pandemic: Guidance from Canadian Association of Interventional Cardiology**

Canadian Journal of Cardiology, 2020

**Abstract:**

The globe is currently in the midst of a COVID-19 pandemic resulting in significant morbidity and mortality. This pandemic has placed considerable stress on health care resources and providers. This document from the Canadian Association of Interventional Cardiology - Association Canadienne de Cardiologie d'intervention, specifically addresses the implications for the care of patients in the Cardiac Catheterization Laboratory (CCL) in Canada during the COVID-19 pandemic. The key principles of this document are to maintain essential interventional cardiovascular care while minimizing risks of COVID-19 to patients/staff and maintaining the overall healthcare resources. As the COVID-19 pandemic evolves, procedures will be increased or reduced based on the current level of restriction to health care services. While some consistency across the country is desirable, provincial and regional considerations will influence how these recommendations are implemented. We believe the framework and recommendations in this document will provide crucial guidance for clinicians and policy makers on the management of coronary and structural procedures in the CCL as the COVID-19 pandemic escalates and eventually abates.

https://doi.org/10.1016/j.cjca.2020.03.027

Stefan E. Pambuccian

**The COVID-19 pandemic: implications for the cytology laboratory**

Journal of the American Society of Cytopathology, 2020

**Abstract:**

The coronavirus disease 2019 (COVID-19) is a pandemic caused by the SARS-CoV-2 virus. The infection has predominantly respiratory transmission and is transmitted through large droplets or aerosols, and less commonly by contact with infected surfaces or fomites. The alarming spread of the infection and the severe clinical disease that it may cause have led to the widespread institution of social distancing measures. Because of repeated exposure to potentially infectious patients and specimens, health care and laboratory personnel are particularly susceptible to contract COVID-19. This review paper provides an assessment of the current state of knowledge about the disease and
Dmitry Ivanov

Predicting the impacts of epidemic outbreaks on global supply chains: A
simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case

Transportation Research Part E: Logistics and Transportation Review, Volume 136, 2020

Abstract:

Epidemic outbreaks are a special case of supply chain (SC) risks which is distinctively characterized by a long-term disruption existence, disruption propagations (i.e., the ripple effect), and high uncertainty. We present the results of a simulation study that opens some new research tensions on the impact of COVID-19 (SARS-CoV-2) on the global SCs. First, we articulate the specific features that frame epidemic outbreaks as a unique type of SC disruption risks. Second, we demonstrate how simulation-based methodology can be used to examine and predict the impacts of epidemic outbreaks on the SC performance using the example of coronavirus COVID-19 and anyLogistix simulation and optimization software. We offer an analysis for observing and predicting both short-term and long-term impacts of epidemic outbreaks on the SCs along with managerial insights. A set of sensitivity experiments for different scenarios allows illustrating the model’s behavior and its value for decision-makers. The major observation from the simulation experiments is that the timing of the closing and opening of the facilities at different echelons might become a major factor that determines the epidemic outbreak impact on the SC performance rather than an upstream disruption duration or the speed of epidemic propagation. Other important factors are lead-time, speed of epidemic propagation, and the upstream and downstream disruption durations in the SC. The outcomes of this research can be used by decision-makers to predict the operative and long-term impacts of epidemic outbreaks on the SCs and develop pandemic SC plans. Our approach can also help to identify the successful and wrong elements of risk mitigation/preparedness and recovery policies in case of epidemic outbreaks. The paper is concluded by summarizing the most important insights and outlining future research agenda.

https://doi.org/10.1016/j.tre.2020.101922

Ruoqing Li, Jigang Tian, Fang Yang, Lei Lv, Jie Yu, Guangyan Sun, Yu Ma, Xiaojuan Yang, Jianqiang Ding

Clinical characteristics of 225 patients with COVID-19 in a tertiary Hospital near Wuhan, China

Journal of Clinical Virology, Volume 127, 2020

https://doi.org/10.1016/j.jcv.2020.104363
Claire Frauenfelder, Colin Butler, Ben Hartley, Lesley Cochrane, Chris Jephson, Robert Nash, Richard Hewitt, David Albert, Michelle Wyatt, Andrew Hall

Practical insights for paediatric otolaryngology surgical cases and performing microlaryngobronchoscopy during the COVID-19 pandemic

International Journal of Pediatric Otorhinolaryngology, Volume 134, 2020

Abstract:
Paediatric otolaryngology practice involves examining and operating in anatomical locations with high levels of aerosol generation and transmission of COVID-19 to treating clinicians, especially from the asymptomatic patient populations including children. During the COVID-19 pandemic all emergent otolaryngological conditions affecting the airway, oral, and nasal cavities should be managed medically where possible and any operating deferred. We present guidelines for operating on paediatric otolaryngological patients when necessary during the COVID-19 pandemic, and incorporate experience gathered during microlaryngobronchoscopy on a COVID-19 positive infant at our institution.

https://doi.org/10.1016/j.ijporl.2020.110030

Noelle Breslin, Caitlin Baptiste, Russell Miller, Karin Fuchs, Dena Goffman, Cynthia Gyamfi-Bannerman, Mary D’Alton

COVID-19 in pregnancy: early lessons

American Journal of Obstetrics & Gynecology MFM, 2020

Abstract:
As the worldwide incidence of coronavirus disease 2019 (COVID-19) rapidly increases, there remains limited information on COVID-19 in pregnancy. We present here our experience with an initial seven cases of confirmed COVID-19 in pregnancy presenting to a single large New York City tertiary care hospital. Five of the seven patients presented with symptoms of COVID-19, including cough, myalgias, fevers, chest pain, and headache. Four patients were admitted to the hospital, including two who required supportive care with intravenous hydration. Most notably, the other two admitted patients were asymptomatic on admission to the hospital, presenting instead for obstetrically-indicated labor inductions; both of these patients became symptomatic post-partum, each requiring intensive care unit admission.

https://doi.org/10.1016/j.ajogmf.2020.100111

Kai Liu, Ying Chen, Duozhi Wu, Ruzheng Lin, Zaisheng Wang, Liqing Pan

Effects of progressive muscle relaxation on anxiety and sleep quality in patients with COVID-19

Complementary Therapies in Clinical Practice, Volume 39, 2020

Abstract:
Background
Patients with Coronavirus Disease 2019 (COVID-19) will experience high levels of anxiety and low sleep quality due to isolation treatment. Some sleep-improving drugs may inhibit the respiratory system and worsen the condition. Prolonged bedside instruction may increase the risk of medical infections.

Objective
To investigate the effect of progressive muscle relaxation on anxiety and sleep quality of COVID-19.

Methods
In this randomized controlled clinical trial, a total of 51 patients who entered the isolation ward were included in the study and randomly divided into experimental and control groups. The experimental group used progressive muscle relaxation (PMR) technology for 30 min per day for 5 consecutive days. During this period, the control group received only routine care and treatment. Before and after the intervention, the Spielberger State-Trait Anxiety Scale (STAI) and Sleep State Self-Rating Scale (SRSS) were used to measure and record patient anxiety and sleep quality. Finally, data analysis was performed using SPSS 25.0 software.

Results
The average anxiety score (STAI) before intervention was not statistically significant (P = 0.730), and the average anxiety score after intervention was statistically significant (P < 0.001). The average sleep quality score (SRSS) of the two groups before intervention was not statistically significant (P = 0.838), and it was statistically significant after intervention (P < 0.001).

Conclusion
Progressive muscle relaxation as an auxiliary method can reduce anxiety and improve sleep quality in patients with COVID-19.

https://doi.org/10.1016/j.ctcp.2020.101132

Peter Foster, Tiffany Cheung, Patrick Craft, Kelsey Baran, Mark Kryskow, Ross Knowles, Alyssa Toia, Christian Galvez, Adam Bowling, Michael DiSiena

Novel Approach to Reduce Transmission of COVID-19 During Tracheostomy

Journal of the American College of Surgeons, 2020

https://doi.org/10.1016/j.jamcollsurg.2020.04.014
How to manage obsessive-compulsive disorder (OCD) under COVID-19: A clinician's guide from the International College of Obsessive Compulsive Spectrum Disorders (ICOCS) and the Obsessive-Compulsive Research Network (OCRN) of the European College of Neuropsychopharmacology

Comprehensive Psychiatry, 2020

https://doi.org/10.1016/j.comppsych.2020.152174

Cardiac surgery in Canada during the COVID-19 Pandemic: A Guidance Statement from the Canadian Society of Cardiac Surgeons

Canadian Journal of Cardiology, 2020

Abstract:

On March 11, 2020, the World Health Organization declared that COVID-19 was a pandemic. At that time, only 118,000 cases had been reported globally, 90% of which had occurred in 4 countries. Since then, the world landscape has changed dramatically. As of March 31, 2020, there are now nearly 800,000 cases with truly global involvement. Countries that were previously unaffected are currently experiencing mounting rates of the novel coronavirus infection with associated increases in COVID-19 related deaths.

https://doi.org/10.1016/j.cjca.2020.04.001

Severe air pollution events not avoided by reduced anthropogenic activities during COVID-19 outbreak

Resources, Conservation and Recycling, Volume 158, 2020

Abstract:

Due to the pandemic of coronavirus disease 2019 in China, almost all avoidable activities in China are prohibited since Wuhan announced lockdown on January 23, 2020. With reduced activities, severe air pollution events still occurred in the North China Plain, causing discussions regarding why severe air pollution was not avoided. The Community Multi-scale Air Quality model was applied during January 01 to February 12, 2020 to study PM2.5 changes under emission reduction scenarios. The estimated emission reduction case (Case 3) better reproduced PM2.5. Compared with the case without emission change (Case 1), Case 3 predicted that PM2.5 concentrations decreased by up to 20% with absolute decreases of 5.35, 6.37, 9.23, 10.25, 10.30, 12.14, 12.75, 14.41, 18.00
and 30.79 μg/m3 in Guangzhou, Shanghai, Beijing, Shijiazhuang, Tianjin, Jinan, Taiyuan, Xi'an, Zhengzhou, Wuhan, respectively. In high-pollution days with PM2.5 greater than 75 μg/m3, the reductions of PM2.5 in Case 3 were 7.78, 9.51, 11.38, 13.42, 13.64, 14.15, 14.42, 16.95 and 22.08 μg/m3 in Shanghai, Jinan, Shijiazhuang, Beijing, Taiyuan, Xi'an, Tianjin, Zhengzhou and Wuhan, respectively. The reductions in emissions of PM2.5 precursors were ~2 times of that in concentrations, indicating that meteorology was unfavorable during simulation episode. A further analysis shows that benefits of emission reductions were overwhelmed by adverse meteorology and severe air pollution events were not avoided. This study highlights that large emissions reduction in transportation and slight reduction in industrial would not help avoid severe air pollution in China, especially when meteorology is unfavorable. More efforts should be made to completely avoid severe air pollution.

https://doi.org/10.1016/j.resconrec.2020.104814

Akriti Singh, Altamash Shaikh, Ritu Singh, Awadhesh Kumar Singh

COVID-19: From bench to bed side

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 4, 2020, Pages 277-281

Abstract:

Background and aims

The last two decades have experienced the outbreaks of three different coronaviruses in the different parts of the world namely; Severe acute respiratory syndrome coronavirus-1 (SARS-CoV-1), Middle East respiratory syndrome (MERS-CoV) and Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). We aimed to delineate the differences in viral dynamics and clinical features between them and tried to focus on every basic details of SARS-COV-2 (COVID-19) that every health care provider must know.

Methods

We systematically searched the PubMed database up till April 2, 2020 and retrieved all the articles published on SARS-CoV-2, SARS-CoV-1, MERS-CoV that dealt with viral dynamics.

Results

Ample data is available to suggest the differences in etiology, transmission cycle, diagnosis, genetics, hosts, reproductive rates, clinical features, laboratory diagnosis and radiological features between SARS-CoV-1, MERS-CoV and SARS-CoV-2.

Conclusion

Although SARS-CoV-2 (COVID-19) is more infectious than SARS-CoV-1 and MERS-CoV, most infections are generally mild and self-limiting. However, case-fatality rates are very high in patients with COVID-19 with comorbidities, compared to SARS-CoV-1 and MERS-CoV.

https://doi.org/10.1016/j.dsx.2020.04.011

Qing Ye, Bili Wang, Jianhua Mao
The pathogenesis and treatment of the ‘Cytokine Storm’ in COVID-19

Journal of Infection, 2020

Abstract:

Summary

Cytokine storm is an excessive immune response to external stimuli. The pathogenesis of the cytokine storm is complex. The disease progresses rapidly, and the mortality is high. Certain evidence shows that, during the coronavirus disease 2019 (COVID-19) epidemic, the severe deterioration of some patients has been closely related to the cytokine storm in their bodies. This article reviews the occurrence mechanism and treatment strategies of the COVID-19 virus-induced inflammatory storm in attempt to provide valuable medication guidance for clinical treatment.

https://doi.org/10.1016/j.jinf.2020.03.037

Duccio Fanelli, Francesco Piazza

Analysis and forecast of COVID-19 spreading in China, Italy and France

Chaos, Solitons & Fractals, Volume 134, 2020

Abstract:

In this note we analyze the temporal dynamics of the coronavirus disease 2019 outbreak in China, Italy and France in the time window 22/01–15/03/2020. A first analysis of simple day-lag maps points to some universality in the epidemic spreading, suggesting that simple mean-field models can be meaningfully used to gather a quantitative picture of the epidemic spreading, and notably the height and time of the peak of confirmed infected individuals. The analysis of the same data within a simple susceptible-infected-recovered-deaths model indicates that the kinetic parameter that describes the rate of recovery seems to be the same, irrespective of the country, while the infection and death rates appear to be more variable. The model places the peak in Italy around March 21st 2020, with a peak number of infected individuals of about 26000 (not including recovered and dead) and a number of deaths at the end of the epidemics of about 18,000. Since the confirmed cases are believed to be between 10 and 20% of the real number of individuals who eventually get infected, the apparent mortality rate of COVID-19 falls between 4% and 8% in Italy, while it appears substantially lower, between 1% and 3% in China. Based on our calculations, we estimate that 2500 ventilation units should represent a fair figure for the peak requirement to be considered by health authorities in Italy for their strategic planning. Finally, a simulation of the effects of drastic containment measures on the outbreak in Italy indicates that a reduction of the infection rate indeed causes a quench of the epidemic peak. However, it is also seen that the infection rate needs to be cut down drastically and quickly to observe an appreciable decrease of the epidemic peak and mortality rate. This appears only possible through a concerted and disciplined, albeit painful, effort of the population as a whole.

https://doi.org/10.1016/j.chaos.2020.109761

Yeshun Wu, Xiaolin Xu, Zijun Chen, Jiahao Duan, Kenji Hashimoto, Ling Yang, Cunming Liu, Chun Yang
Nervous system involvement after infection with COVID-19 and other coronaviruses

Brain, Behavior, and Immunity, 2020

Abstract:

Viral infections have detrimental impacts on neurological functions, and even to cause severe neurological damage. Very recently, coronaviruses (CoV), especially severe acute respiratory syndrome CoV 2 (SARS-CoV-2), exhibit neurotropic properties and may also cause neurological diseases. It is reported that CoV can be found in the brain or cerebrospinal fluid. The pathobiology of these neuroinvasive viruses is still incompletely known, and it is therefore important to explore the impact of CoV infections on the nervous system. Here, we review the research into neurological complications in CoV infections and the possible mechanisms of damage to the nervous system.

https://doi.org/10.1016/j.bbi.2020.03.031

Brynn A. Bowman, Andrew E. Esch, Anthony L. Back, Nadine Marshall

Crisis Symptom Management and Patient Communication Protocols Are Important Tools for All Clinicians Responding to COVID-19

Journal of Pain and Symptom Management, 2020

Abstract:

Symptom management and skilled communication with patients and families are essential clinical services in the midst of the COVID-19 pandemic. While palliative care specialists have training in these skills, many front-line clinicians from other specialties do not. It is imperative that all clinicians responding to the COVID-19 crisis have access to clinical tools to support symptom management and difficult patient and family communication.

https://doi.org/10.1016/j.jpainsymman.2020.03.028

Jean-Marc Classe, Gilles Dolivet, Serge Evrard, Gwenael Ferron, Fabrice Lécuru, Lea Leufflen, Michel Rivoire, Olivia Sgarbura

Recommandations de la Société française de chirurgie oncologique (SFCO) pour l’organisation de la chirurgie oncologique durant l’épidémie de COVID-19

Bulletin du Cancer, 2020

https://doi.org/10.1016/j.bulcan.2020.03.010

Philippe Gautret, Jean-Christophe Lagier, Philippe Parola, Van Thuan Hoang, Line Meddeb, Morgane Mailhe, Barbara Doudier, Johan Courjon, Valérie Giordanengo, Vera Esteves Vieira, Hervé Tissot Dupont, Stéphane Honoré, Philippe Colson, Eric Chabrière, Bernard La Scola, Jean-Marc Rolain, Philippe Brouqui, Didier Raoult
Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial

International Journal of Antimicrobial Agents, 2020

Abstract:

Background

Chloroquine and hydroxychloroquine have been found to be efficient on SARS-CoV-2, and reported to be efficient in Chinese COVID-19 patients. We evaluate the role of hydroxychloroquine on respiratory viral loads.

Patients and methods

French Confirmed COVID-19 patients were included in a single arm protocol from early March to March 16th, to receive 600mg of hydroxychloroquine daily and their viral load in nasopharyngeal swabs was tested daily in a hospital setting. Depending on their clinical presentation, azithromycin was added to the treatment. Untreated patients from another center and cases refusing the protocol were included as negative controls. Presence and absence of virus at Day6-post inclusion was considered the end point.

Results

Six patients were asymptomatic, 22 had upper respiratory tract infection symptoms and eight had lower respiratory tract infection symptoms. Twenty cases were treated in this study and showed a significant reduction of the viral carriage at D6-post inclusion compared to controls, and much lower average carrying duration than reported of untreated patients in the literature. Azithromycin added to hydroxychloroquine was significantly more efficient for virus elimination.

Conclusion

Despite its small sample size our survey shows that hydroxychloroquine treatment is significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin.

https://doi.org/10.1016/j.ijantimicag.2020.105949

Shuai Zhao, Ken Ling, Hong Yan, Liang Zhong, Xiaohong Peng, Shanglong Yao, Jiapeng Huang, Xiangdong Chen

Anesthetic Management of Patients with COVID 19 Infections during Emergency Procedures

Journal of Cardiothoracic and Vascular Anesthesia, Volume 34, Issue 5, 2020, Pages 1125-1131

Abstract:

Objectives

The aim of the present study was to prevent cross-infection in the operating room during emergency procedures for patients with confirmed or suspected 2019 novel coronavirus (2019-nCoV) by following anesthesia management protocols, and to document clinical- and anesthesia-related characteristics of these patients.
Design
This was a retrospective, multicenter clinical study.

Setting
This study used a multicenter dataset from 4 hospitals in Wuhan, China.

Participants
Patients and health care providers with confirmed or suspected 2019-nCoV from January 23 to 31, 2020, at the Wuhan Union Hospital, the Wuhan Children's Hospital, The Central Hospital of Wuhan, and the Wuhan Fourth Hospital in Wuhan, China.

Interventions
Anesthetic management and infection control guidelines for emergency procedures for patients with suspected 2019-nCoV were drafted and applied in 4 hospitals in Wuhan.

Measurements and Main Results
Cross-infection in the operating rooms of the 4 hospitals was effectively reduced by implementing the new measures and procedures. The majority of patients with laboratory-confirmed 2019-nCoV infection or suspected infection were female (23 [62%] of 37), and the mean age was 41.0 years old (standard deviation 19.6; range 4-78). 10 (27%) patients had chronic medical illnesses, including 4 (11%) with diabetes, 8 (22%) with hypertension, and 8 (22%) with digestive system disease. Twenty-five (68%) patients presented with lymphopenia, and 23 (62%) patients exhibited multiple mottling and ground-glass opacity on computed tomography scanning.

Conclusions
The present study indicates that COVID-19–specific guidelines for emergency procedures for patients with confirmed or suspected 2019-nCoV may effectively prevent cross-infection in the operating room. Most patients with confirmed or suspected COVID-19 presented with fever and dry cough and demonstrated bilateral multiple mottling and ground-glass opacity on chest computed tomography scans.

https://doi.org/10.1053/j.jvca.2020.02.039

Yeen Huang, Ning Zhao

**Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey**

Psychiatry Research, 2020

Abstract:
China has been severely affected by Coronavirus Disease 2019 (COVID-19) since December, 2019. We aimed to assess the mental health burden of Chinese public during the outbreak, and to explore the potential influence factors. Using a web-based cross-sectional survey, we collected data from 7,236 self-selected volunteers assessed with demographic information, COVID-19 related knowledge, generalized anxiety disorder (GAD), depressive symptoms, and sleep quality. The overall prevalence of GAD, depressive symptoms, and sleep quality of the public were 35.1%, 20.1%, and 18.2%, respectively. Young people reported a significantly higher prevalence of GAD
and depressive symptoms than older people. Compared with other occupational group, healthcare workers were more likely to have poor sleep quality. Multivariate logistic regression showed that age (< 35 years) and time spent focusing on the COVID-19 (≥ 3 hours per day) were associated with GAD, and healthcare workers were at high risk for poor sleep quality. Our study identified a major mental health burden of the public during the COVID-19 outbreak. Young people, people spending too much time thinking about the outbreak, and healthcare workers were at high risk of mental illness. Continuous surveillance of the psychological consequences for outbreaks should become routine as part of preparedness efforts worldwide.

https://doi.org/10.1016/j.psychres.2020.112954

Zuhua Chen, Hongjie Fan, Jian Cai, Yunjiang Li, Baoliang Wu, Yanchun Hou, Shufeng Xu, Fei Zhou, Yongguang Liu, Weiling Xuan, Hongjie Hu, Jihong Sun

**High-resolution computed tomography manifestations of COVID-19 infections in patients of different ages**

European Journal of Radiology, Volume 126, 2020

**Abstract:**

**Purpose**

We aimed to compare chest HRCT lung signs identified in scans of differently aged patients with COVID-19 infections.

**Methods**

Case data of patients diagnosed with COVID-19 infection in Hangzhou City, Zhejiang Province in China were collected, and chest HRCT signs of infected patients in four age groups (<18 years, 18–44 years, 45–59 years, ≥60 years) were compared.

**Results**

Small patchy, ground-glass opacity (GGO), and consolidations were the main HRCT signs in 98 patients with confirmed COVID-19 infections. Patients aged 45–59 years and aged ≥60 years had more bilateral lung, lung lobe, and lung field involvement, and greater lesion numbers than patients <18 years. GGO accompanied with the interlobular septa thickening or a crazy-paving pattern, consolidation, and air bronchogram sign were more common in patients aged 45–59 years, and ≥60 years, than in those aged <18 years, and aged 18–44 years.

**Conclusions**

Chest HRCT manifestations in patients with COVID-19 are related to patient’s age, and HRCT signs may be milder in younger patients.

https://doi.org/10.1016/j.ejrad.2020.108972

Si-qian Zheng, Li Yang, Peng-xiang Zhou, Hui-bo Li, Fang Liu, Rong-sheng Zhao

**Recommendations and guidance for providing pharmaceutical care services during COVID-19 pandemic: A China perspective**
Abstract:

Background

The novel coronavirus pneumonia (COVID-19), which was first detected in Wuhan City, has now became a pandemic that affecting patients around the world. Particularly, the community patient population are at high risk of infection and are facing potential failure of proper medication use during the pandemic.

Objective

To discuss community pharmacists’ role and the content of pharmaceutical care (PC) during the novel coronavirus pandemic to promote effective prevention and control and safe drug use of the community patient population.

Method

Collect and summarize the experience Chinese community pharmacies gained from providing pharmacy services during the COVID-19 outbreak, and taking patients' PC needs into consideration, analyze and discuss the methods and strategies that community pharmacies and pharmacists shall use to provide PC during the pandemic.

Results

Community pharmacy management teams shall support PC services by providing adequate supply of COVID-19 related medications and preventative products, following environment regulations, and providing sufficient staff trainings. Pharmacists shall use various approaches to provide PC services in drug dispensing, consulting and referrals, chronic disease management, safe use of infusions, patient education, home care guidance and psychological support to promote the COVID-19 pandemic control and ensure safe medication use of community patients during the pandemic.

Conclusion

PC services in communities during the COVID-19 shall possess different properties due to disease characteristics and related change in patients' need. Community pharmacies shall work as a strong supporter of patient's medication and protective equipment supply. Community pharmacists shall be prepared to provide skilled and effective PC services for community patient population to ensure medication safety and promote the overall COVID-19 pandemic control.

https://doi.org/10.1016/j.sapharm.2020.03.012

Summer Chavez, Brit Long, Alex Koyfman, Stephen Y. Liang

Coronavirus Disease (COVID-19): A primer for emergency physicians

The American Journal of Emergency Medicine, 2020

Abstract:

Introduction

Rapid worldwide spread of Coronavirus Disease 2019 (COVID-19) has resulted in a global pandemic.
Objective

This review article provides emergency physicians with an overview of the most current understanding of COVID-19 and recommendations on the evaluation and management of patients with suspected COVID-19.

Discussion

Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for causing COVID-19, is primarily transmitted from person-to-person through close contact (approximately 6 ft) by respiratory droplets. Symptoms of COVID-19 are similar to other viral upper respiratory illnesses. Three major trajectories include mild disease with upper respiratory symptoms, non-severe pneumonia, and severe pneumonia complicated by acute respiratory distress syndrome (ARDS). Emergency physicians should focus on identifying patients at risk, isolating suspected patients, and informing hospital infection prevention and public health authorities. Patients with suspected COVID-19 should be asked to wear a facemask. Respiratory etiquette, hand washing, and personal protective equipment are recommended for all healthcare personnel caring for suspected cases. Disposition depends on patient symptoms, hemodynamic status, and patient ability to self-quarantine.

Conclusion

This narrative review provides clinicians with an updated approach to the evaluation and management of patients presenting to the emergency department with suspected COVID-19.

https://doi.org/10.1016/j.ajem.2020.03.036

Balakrishnan Ashokka, May-Han Loh, Cher Heng Tan, Lin Lin SU, Barnaby Edward Young, David Chien Lye, Arijit Biswas, Sebastian E Illanes, Mahesh Choolani

Care of the Pregnant Woman with COVID-19 in Labor and Delivery: Anesthesia, Emergency cesarean delivery, Differential diagnosis in the acutely ill parturient, Care of the newborn, and Protection of the healthcare personnel

American Journal of Obstetrics and Gynecology, 2020

https://doi.org/10.1016/j.ajog.2020.04.005

Heng Meng, Rui Xiong, Ruyuan He, Weichen Lin, Bo Hao, Lin Zhang, Zilong Lu, Xiaokang Shen, Tao Fan, Wenyang Jiang, Wenbin Yang, Tao Li, Jun Chen, Qing Geng

CT imaging and clinical course of asymptomatic cases with COVID-19 pneumonia at admission in Wuhan, China

Journal of Infection, 2020

Abstract:

Summary

Purpose
Aimed to characterize the CT imaging and clinical course of asymptomatic cases with COVID-19 pneumonia.

Methods

Asymptomatic cases with COVID-19 pneumonia confirmed by SARS-COV-2 nucleic acid testing in Renmin Hospital of Wuhan University were retrospectively enrolled. The characteristics of CT imaging and clinical feature were collected and analyzed.

Results

58 asymptomatic cases with COVID-19 pneumonia admitted to our hospital between Jan 1, 2020 and Feb 23, 2020 were enrolled. All patients had history of exposure to SARS-CoV-2. On admission, patients had no symptoms and laboratory findings were normal. The predominant feature of CT findings in this cohort was ground glass opacity (GGO) (55, 94.8%) with peripheral (44, 75.9%) distribution, unilateral location (34, 58.6%) and mostly involving one or two lobes (38, 65.5%), often accompanied by characteristic signs. After short-term follow-up, 16 patients (27.6%) presented symptoms with lower lymphocyte count and higher CRP, mainly including fever, cough and fatigue. The evolution of lesions on CT imaging were observed in 10 patients (17.2%). The average days of hospitalization was 19.80±10.82 days, and was significantly longer in progression patients (28.60±7.55 day).

Conclusion

CT imaging of asymptomatic cases with COVID-19 pneumonia has definite characteristics. Since asymptomatic infections as “covert transmitter”, and some patients can progress rapidly in the short term. It is essential to pay attention to the surveillance of asymptomatic patients with COVID-19. CT scan has great value in screening and detecting patients with COVID-19 pneumonia, especially in the highly suspicious, asymptomatic cases with negative nucleic acid testing.

https://doi.org/10.1016/j.jinf.2020.04.004

Zihui Tan, Priscilla Hui Yi Phoon, Ling Antonia Zeng, Jing Fu, Xiao Ting Lim, Teing Ee Tan, Kenny Wei-Tsen Loh, Meng Huat Goh

Response and Operating Room Preparation for the COVID-19 Outbreak: A Perspective From the National Heart Centre in Singapore

Journal of Cardiothoracic and Vascular Anesthesia, 2020

Abstract:

The outbreak of coronavirus disease 2019 (COVID-19), a respiratory disease from a novel coronavirus that was first detected in Wuhan City, Hubei Province, China, is now a public health emergency and pandemic. Singapore, as a major international transportation hub in Asia, has been one of the worst hit countries by the disease. With the advent of local transmission, the authors share their preparation and response planning for the operating room of the National Heart Centre Singapore, the largest cardiothoracic tertiary center in Singapore. Protection of staff and patients, environmental concerns, and other logistic and equipment issues are considered.

https://doi.org/10.1053/j.jvca.2020.03.050
Experience and suggestion of medical practices for burns during the outbreak of COVID-19

Abstract:
COVID-19 is spreading almost all over the world at present, which is caused by the 2019 novel coronavirus (2019-nCoV). It was an epidemic firstly in Hubei province of China. The Chinese government has formally set COVID-19 in the statutory notification and control system for infectious diseases according to the Law of the People’s Republic of China on the Prevention and Treatment of Infectious Diseases. China currently is still struggling to respond to COVID-19 though intensive actions with progress made. The Burn Department of our hospital is one of sections with the highest infectious risk of COVID-19. Based on our own experience and the guidelines on the diagnosis and treatment of COVID-19 (7th Version) with other regulations and literature, we describe our experience with suggestions for medical practices for burn units during the COVID-19 outbreak. We hope these experiences and suggestions benefit our international colleagues during the pandemic of the COVID-19.

https://doi.org/10.1016/j.burns.2020.03.014

Clinical considerations for patients with diabetes in times of COVID-19 epidemic

https://doi.org/10.1016/j.dsx.2020.03.002

Thrombocytopenia is associated with severe coronavirus disease 2019 (COVID-19) infections: A meta-analysis

https://doi.org/10.1016/j.cca.2020.03.002
calculation of weighted mean difference (WMD) of platelet number in COVID-19 patients with or without severe disease and odds ratio (OR) of thrombocytopenia for severe form of COVID-19.

Results

Nine studies with 1779 COVID-19 patients, 399 (22.4%) with severe disease, were included in the meta-analysis. The pooled analysis revealed that platelet count was significantly lower in patients with more severe COVID-19 (WMD −31 × 10⁹/L; 95% CI, from −35 to −29 × 10⁹/L). A subgroup analysis comparing patients by survival, found an even lower platelet count was observed with mortality (WMD, −48 × 10⁹/L; 95% CI, −57 to −39 × 10⁹/L). In the four studies (n = 1427) which reported data on rate of thrombocytopenia, a low platelet count was associated with over fivefold enhanced risk of severe COVID-19 (OR, 5.1; 95% CI, 1.8–14.6).

Conclusions

Low platelet count is associated with increased risk of severe disease and mortality in patients with COVID-19, and thus should serve as clinical indicator of worsening illness during hospitalization.

https://doi.org/10.1016/j.cca.2020.03.022

Francois-Xavier Lescure, Lila Bouadma, Duc Nguyen, Marion Parisey, Paul-Henri Wicky, Sylvie Behillil, Alexandre Gaymard, Maude Bouscambert-Duchamp, Flora Donati, Quentin Le Hingrat, Vincent Enouf, Nadhira Houhou-Fidouh, Martine Valette, Alexandra Mailles, Jean-Christophe Lucet, France Mentre, Xavier Duval, Diane Descamps, Denis Malvy, Jean-François Timsit, Bruno Lina, Sylvie van-der-Werf, Yazdan Yazdanpanah

Clinical and virological data of the first cases of COVID-19 in Europe: a case series

The Lancet Infectious Diseases, 2020

Abstract:

Summary

Background

On Dec 31, 2019, China reported a cluster of cases of pneumonia in people at Wuhan, Hubei Province. The responsible pathogen is a novel coronavirus, named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We report the relevant features of the first cases in Europe of confirmed infection, named coronavirus disease 2019 (COVID-19), with the first patient diagnosed with the disease on Jan 24, 2020.

Methods

In this case series, we followed five patients admitted to Bichat-Claude Bernard University Hospital (Paris, France) and Pellegrin University Hospital (Bordeaux, France) and diagnosed with COVID-19 by semi-quantitative RT-PCR on nasopharyngeal swabs. We assessed patterns of clinical disease and viral load from different samples (nasopharyngeal and blood, urine, and stool samples), which were obtained once daily for 3 days from hospital admission, and once every 2 or 3 days until patient discharge. All samples were refrigerated and shipped to laboratories in the National Reference Center for Respiratory Viruses (The Institut Pasteur, Paris, and Hospices Civils de Lyon, Lyon,
France), where RNA extraction, real-time RT-PCR, and virus isolation and titration procedures were done.

Findings

The patients were three men (aged 31 years, 48 years, and 80 years) and two women (aged 30 years and 46 years), all of Chinese origin, who had travelled to France from China around mid-January, 2020. Three different clinical evolutions are described: (1) two paucisymptomatic women diagnosed within a day of exhibiting symptoms, with high nasopharyngeal titres of SARS-CoV-2 within the first 24 h of the illness onset (5·2 and 7·4 log10 copies per 1000 cells, respectively) and viral RNA detection in stools; (2) a two-step disease progression in two young men, with a secondary worsening around 10 days after disease onset despite a decreasing viral load in nasopharyngeal samples; and (3) an 80-year-old man with a rapid evolution towards multiple organ failure and a persistent high viral load in lower and upper respiratory tract with systemic virus dissemination and virus detection in plasma. The 80-year-old patient died on day 14 of illness (Feb 14, 2020); all other patients had recovered and been discharged by Feb 19, 2020.

Interpretation

We illustrated three different clinical and biological types of evolution in five patients infected with SARS-CoV-2 with detailed and comprehensive viral sampling strategy. We believe that these findings will contribute to a better understanding of the natural history of the disease and will contribute to advances in the implementation of more efficient infection control strategies.

Funding

REACTing (Research & Action Emerging Infectious Diseases).

https://doi.org/10.1016/S1473-3099(20)30200-0


Strategy for the practice of digestive and oncological surgery during the Covid-19 epidemic

Journal of Visceral Surgery, 2020

Abstract:

Summary

The Covid-19 pandemic is changing the organization of healthcare and has a direct impact on digestive surgery. Healthcare priorities and circuits are being modified. Emergency surgery is still a priority. Functional surgery is to be deferred. Laparoscopic surgery must follow strict rules so as not to expose healthcare professionals (HCPs) to added risk. The question looms large in cancer surgery—go ahead or defer? There is probably an added risk due to the pandemic that must be balanced against the risk incurred by deferring surgery. For each type of cancer—colon, pancreas, oesogastric, hepatocellular carcinoma—morbidity and mortality rates are stated and compared with the oncological risk incurred by deferring surgery and/or the tumour doubling time. Strategies can be proposed based on this comparison. For colonic cancers T1-2, N0, it is advisable to defer surgery. For advanced colonic lesions, it seems judicious to undertake neoadjuvant chemotherapy and then wait. For rectal cancers T3-4 and/or N+, chemoradiotherapy is indicated, short radiotherapy must be discussed (followed by a waiting period) to reduce time of exposure in the hospital and to prevent
infections. Most complex surgery with high morbidity and mortality–oesogastric, hepatic or pancreatic–is most often best deferred.

https://doi.org/10.1016/j.jviscsurg.2020.03.008

Shrinivas Rathod, Arbind Dubey, Bashir Bashir, Gokulan Sivanathan, Ahmet Leylek, Amitava Chowdhury, Rashmi Koul

**Bracing for impact with new 4R’s in the COVID-19 pandemic- a provincial thoracic radiation oncology consensus**

Radiotherapy and Oncology, 2020

**Abstract:**

As COVID-19 pandemic continues to explode, cancer centers worldwide are trying to adapt and are struggling with this constantly changing scenario. Intending to ensure patient safety and deliver quality care, we sought consensus on the preferred thoracic radiation regimen in a Canadian province with 4 new R’s of COVID era.

https://doi.org/10.1016/j.radonc.2020.03.045

**AMPA Position Statement on COVID-19**

Air Medical Journal, 2020

https://doi.org/10.1016/j.amj.2020.03.006

Luba Sominsky, David W. Walker, Sarah J. Spencer

**One size does not fit all – Patterns of vulnerability and resilience in the COVID-19 pandemic and why heterogeneity of disease matters**

Brain, Behavior, and Immunity, 2020

https://doi.org/10.1016/j.bbi.2020.03.016

Saleem Ahmed, Tan Wei Leong Glenn, Yew-Lam Chong

**Surgical Response to COVID-19 Pandemic: A Singapore Perspective**

Journal of the American College of Surgeons, 2020

**Abstract:**

COVID-19 pandemic continues to spread rapidly and overwhelm health systems around the world. Tan Tock Seng Hospital was the epicentre in the coordination and management of the Severe Acute Respiratory Syndrome outbreak in 2003. Now, together with the National Centre for Infectious Diseases, Tan Tock Seng Hospital is taking the lead in Singapore’s efforts to navigate this pandemic. In dealing with COVID-19, given the scale of the pandemic, surgeons and surgical teams all around
the world face unique challenges to daily operations, having to fulfil alternate non-surgical roles while reducing attrition. We hope to share our experience from the perspective of the Division of Surgery, Tan Tock Seng Hospital on our actions in responding to this challenge, in the hope that it may benefit others during this global crisis.

https://doi.org/10.1016/j.jamcollsurg.2020.04.003

Qiang Chen, Chen Min, Wei Zhang, Ge Wang, Xiaoyue Ma, Richard Evans

**Unpacking the black box: How to promote citizen engagement through government social media during the COVID-19 crisis**

Computers in Human Behavior, 2020

**Abstract:**

During times of public crises, governments must act swiftly to communicate crisis information effectively and efficiently to members of the public; failure to do so will inevitably lead citizens to become fearful, uncertain and anxious in the prevailing conditions. This pioneering study systematically investigates how Chinese central government agencies used social media to promote citizen engagement during the COVID-19 crisis. Using data scraped from ‘Healthy China’, an official Sina Weibo account of the National Health Commission of China, we examine how citizen engagement relates to a series of theoretically relevant factors, including media richness, dialogic loop, content type and emotional valence. Results show that media richness negatively predicts citizen engagement through government social media, but dialogic loop facilitates engagement. Information relating to the latest news about the crisis and the government’s handling of the event positively affects citizen engagement through government social media. Importantly, all relationships were contingent upon the emotional valence of each Weibo post.

https://doi.org/10.1016/j.chb.2020.106380

Michael A. Hill, Christos Mantzoros, James R. Sowers

**Commentary: COVID-19 in patients with diabetes**

Metabolism, Volume 107, 2020

https://doi.org/10.1016/j.metabol.2020.154217

P. Schultz, J.-B. Morvan, N. Fakhry, S. Morinière, S. Vergez, C. Lacroix, S. Bartier, B. Barry, E. Babin, V. Couloigner, I. Atallah

**French consensus regarding precautions during tracheostomy and post-tracheostomy care in the context of COVID-19 pandemic**

European Annals of Otorhinolaryngology, Head and Neck Diseases, 2020

**Abstract:**

Tracheostomy post-tracheostomy care are regarded as at high risk for contamination of health care professionals with the new coronavirus (SARS-CoV-2). Considering the rapid spread of the
infection, all patients in France must be considered as potentially infected by the virus. Nevertheless, patients without clinical or radiological (CT scan) markers of COVID-19, and with negative nasopharyngeal sample within 24h of surgery, are at low risk of being infected. Instructions for personal protection include specific wound dressings and decontamination of all material used. The operating room should be ventilated after each tracheostomy and the pressure of the room should be neutral or negative. Percutaneous tracheostomy is to be preferred over surgical cervicotomy in order to reduce aerosolization and to avoid moving patients from the intensive care unit to the operating room. Ventilation must be optimized during the procedure, to limit patient oxygen desaturation. Drug assisted neuromuscular blockage is advised to reduce coughing during tracheostomy tube insertion. An experienced team is mandatory to secure and accelerate the procedure as well as to reduce risk of contamination.

https://doi.org/10.1016/j.anorl.2020.04.006

Ali Lakhani

**Which Melbourne metropolitan areas are vulnerable to COVID-19 based on age, disability and access to health services? Using spatial analysis to identify service gaps and inform delivery**

Journal of Pain and Symptom Management, 2020

**Abstract:**

Ageing adults (65+) with disability are especially vulnerable to COVID-19 and upon contracting, are a cohort most likely to require palliative care. Therefore, it is very important that health services - particularly health services providing palliative care - are proximately available. Treating the Melbourne metropolitan area as a case-study, a spatial analysis was conducted to clarify priority areas with a significantly high percentage and number of ageing adults (65+) with disability, and high barriers to accessing primary health services. After, travel times from priority areas to (i) palliative medicine, and (ii) hospital services were calculated. The geographic dispersion of areas with people vulnerable to COVID-19 with poor access to palliative care and health services are clarified. Unique methods of health service delivery are required to ensure that vulnerable populations in under-serviced metropolitan areas receive prompt and adequate care. The spatial methodology employed can be implemented in different contexts to support evidence-based COVID-19 and pandemic palliative care service decisions.

https://doi.org/10.1016/j.jpainsymman.2020.03.041

Zahra Sahraei, Minoosh Shabani, Shervin Shokouhi, Ali Saffaei

**Aminoquinolines against coronavirus disease 2019 (COVID-19): chloroquine or hydroxychloroquine**

International Journal of Antimicrobial Agents, 2020

https://doi.org/10.1016/j.ijantimicag.2020.105945

Zaiwei Song, Yang Hu, Siqian Zheng, Li Yang, Rongsheng Zhao
Hospital pharmacists’ pharmaceutical care for hospitalized patients with COVID-19: Recommendations and guidance from clinical experience

Research in Social and Administrative Pharmacy, 2020

Abstract:

Objective

To discuss hospital pharmacists’ role in providing pharmaceutical care for hospitalized patients with COVID-19 to promote patient care and management during the pandemic.

Method

Based on the method of evidence-based pharmacy, clinical evidence of therapeutical drugs for COVID-19 were retrieved and summarized. Based on clinical experience Chinese hospital pharmacists gained from providing pharmaceutical care services during COVID-19 pandemic, taking COVID-19 hospitalized patients’ needs into consideration, the methods and strategies hospital pharmacists shall use to provide pharmaceutical care were analyzed and summarized.

Results

Hospital pharmacists shall support pharmaceutical care services by participating in making evidence-based decisions for medication, monitoring and evaluation of medication safety and efficacy, providing strengthened care for special population and patients with combined underlying diseases, monitoring and management of convalescent plasma therapy, providing emotional counselling and psychological support, and providing scientific information about COVID-19 vaccines.

Conclusion

The need of pharmaceutical care services in COVID-19 hospitalized patients during this pandemic was quite distinguished from the past. Hospital pharmacists shall join the collaborative multidisciplinary team to improve COVID-19 patients’ outcome and reduce mortality, and to facilitate the pandemic control.

https://doi.org/10.1016/j.sapharm.2020.03.027

B. El Boussadani, C. Benajiba, A. Aajal, A. Ait Brik, O. Ammour, J. El Hangouch, O. Oussama, B. Oussama, N. Tahiri, Z. Raissuni

Pandémie COVID-19 : impact sur le système cardiovasculaire. Données disponibles au 1er avril 2020

Annales de Cardiologie et d'Angéiologie, 2020

Abstract:

Le syndrome respiratoire aigu sévère coronavirus 2 (SARS-CoV-2) infecte les cellules hôtres par les récepteurs de l’angiotensine, conduisant à une pneumonie liée au COVID-19. À un niveau cardiaque, le virus a un double impact ; en effet, l’infection sera plus grave si l’hôte possède des comorbidités cardiovasculaires, et le virus peut causer des lésions cardiovasculaires pouvant engager le pronostic vital. Les thérapeutiques associées au COVID-19 peuvent avoir des effets
indésirables cardiovasculaires. Une attention particulière doit être accordée à la protection cardiovasculaire pendant l’infection au COVID-19.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infects host cells with angiotensin receptors, leading to pneumonia linked to COVID-19. The virus has a double impact on the cardiovascular system, the infection will be more intense if the host has cardiovascular co-morbidities and the virus can cause life-threatening cardiovascular lesions. Therapies associated with COVID-19 may have adverse cardiovascular effects. Therefore, special attention should be given to cardiovascular protection during COVID-19 infection.

https://doi.org/10.1016/j.ancard.2020.04.001

Adam J Kucharski, Timothy W Russell, Charlie Diamond, Yang Liu, John Edmunds, Sebastian Funk, Rosalind M Eggo, Fiona Sun, Mark Jit, James D Munday, Nicholas Davies, Amy Gimma, Kevin van Zandvoort, Hamish Gibbs, Joel Hellewell, Christopher I Jarvis, Sam Clifford, Billy J Quilty, Nikos I Bosse, Sam Abbott, Petra Klepac, Stefan Flasche

**Early dynamics of transmission and control of COVID-19: a mathematical modelling study**

The Lancet Infectious Diseases, 2020

**Abstract:**

**Summary**

**Background**

An outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to 95 333 confirmed cases as of March 5, 2020. Understanding the early transmission dynamics of the infection and evaluating the effectiveness of control measures is crucial for assessing the potential for sustained transmission to occur in new areas. Combining a mathematical model of severe SARS-CoV-2 transmission with four datasets from within and outside Wuhan, we estimated how transmission in Wuhan varied between December, 2019, and February, 2020. We used these estimates to assess the potential for sustained human-to-human transmission to occur in locations outside Wuhan if cases were introduced.

**Methods**

We combined a stochastic transmission model with data on cases of coronavirus disease 2019 (COVID-19) in Wuhan and international cases that originated in Wuhan to estimate how transmission had varied over time during January, 2020, and February, 2020. Based on these estimates, we then calculated the probability that newly introduced cases might generate outbreaks in other areas. To estimate the early dynamics of transmission in Wuhan, we fitted a stochastic transmission dynamic model to multiple publicly available datasets on cases in Wuhan and internationally exported cases from Wuhan. The four datasets we fitted to were: daily number of new internationally exported cases (or lack thereof), by date of onset, as of Jan 26, 2020; daily number of new cases in Wuhan with no market exposure, by date of onset, between Dec 1, 2019, and Jan 1, 2020; daily number of new cases in China, by date of onset, between Dec 29, 2019, and Jan 23, 2020; and proportion of infected passengers on evacuation flights between Jan 29, 2020, and Feb 4, 2020. We used an additional two datasets for comparison with model outputs: daily number of new exported cases from Wuhan (or lack thereof) in countries with high connectivity to Wuhan
(ie, top 20 most at-risk countries), by date of confirmation, as of Feb 10, 2020; and data on new confirmed cases reported in Wuhan between Jan 16, 2020, and Feb 11, 2020.

**Findings**

We estimated that the median daily reproduction number (Rt) in Wuhan declined from 2·35 (95% CI 1·15–4·77) 1 week before travel restrictions were introduced on Jan 23, 2020, to 1·05 (0·41–2·39) 1 week after. Based on our estimates of Rt, assuming SARS-like variation, we calculated that in locations with similar transmission potential to Wuhan in early January, once there are at least four independently introduced cases, there is a more than 50% chance the infection will establish within that population.

**Interpretation**

Our results show that COVID-19 transmission probably declined in Wuhan during late January, 2020, coinciding with the introduction of travel control measures. As more cases arrive in international locations with similar transmission potential to Wuhan before these control measures, it is likely many chains of transmission will fail to establish initially, but might lead to new outbreaks eventually.

**Funding**

Wellcome Trust, Health Data Research UK, Bill & Melinda Gates Foundation, and National Institute for Health Research.

https://doi.org/10.1016/S1473-3099(20)30144-4

Jessi Humphreys, Laura Schoenherr, Giovanni Elia, Naomi Tzril Saks, Chelsea Brown, Susan Barbour, Steven Z. Pantilat

**Rapid Implementation of Inpatient Telepalliative Medicine Consultations during COVID-19 Pandemic**

Journal of Pain and Symptom Management, 2020

**Abstract:**

As COVID-19 cases increase throughout the country and healthcare systems grapple with the need to decrease provider exposure and minimize personal protective equipment (PPE) use while maintaining high quality patient care, our specialty is called upon to consider new methods of delivering inpatient palliative care. Telepalliative medicine has been used to great effect in outpatient and home-based palliative care, but has had fewer applications in the inpatient setting. As we plan for decreased provider availability due to quarantine and redeployment and seek to reach increasingly isolated hospitalized patients in the face of COVID-19, the need for telepalliative medicine in the inpatient setting is now clear. We describe our rapid and ongoing implementation of telepalliative medicine consultation for our inpatient palliative care teams and discuss lessons learned and recommendations for programs considering similar care models.

https://doi.org/10.1016/j.jpainsymman.2020.04.001

D. Azría, C. Hennequin, P. Giraud
Compensation de la dose totale en cas d’interruption temporaire de radiothérapie externe dans le contexte de la pandémie de COVID-19 : mise au point pratique

Cancer/Radiothérapie, 2020

Abstract:
L’étalement est un facteur important de récidive locale et indirectement d’évolution à distance, notamment, en cas de durée de traitement allongée. La pandémie actuelle a un impact sur les patients en cours de radiothérapie qui doivent interrompre leur traitement de manière parfois prolongée du fait de la nécessité de soins respiratoires induits par le COVID-19. Les modèles utilisés de compensation de la dose totale en cas d’interruption prolongée de la radiothérapie sont connus, mais il nous a semblé important de synthétiser afin que chaque oncologue radiothérapeute puisse proposer un traitement le plus optimal possible tant en termes de risque de récidive locale que de protection des tissus sains. L’objectif de ce type de recommandation est d’homogénéiser les pratiques de l’ensemble de la discipline.

Overall treatment time is an important factor of local recurrence and indirectly of distant evolution, namely in case of protracted treatments. The current pandemic impacts on the duration of radiotherapy if patients under treatments and synchronously suffering from COVID-19. The models used to compensate the total dose in case of temporary treatment interruption are well known but it is of importance in that pandemic context to update and homogenize clinical practice in order to improve local control without increasing normal tissue complications.

https://doi.org/10.1016/j.canrad.2020.04.001

Varalakshmi R., Arunachalam K.

COVID 2019 – ROLE OF FACULTY MEMBERS TO KEEP MENTAL ACTIVENESS OF STUDENTS

Asian Journal of Psychiatry, Volume 51, 2020

https://doi.org/10.1016/j.ajp.2020.102091

Stéphane M. Schneider, Véronique Albert, Nathalie Barbier, Didier Barnoud, Corinne Bouteloup, Cécile Chambrier, Philippe Fayemendy, Nicolas Flori, Olivier Goulet, Dominique Guimber, Adam Jirka, Francisca Joly, Dominique Lescut, Sébastien Neuville, Marie-Astrid Piquet, Florian Poullenot, Didier Quilliot, David Séguy, Jeanick Stocco, Ronan Thibault, Pierre Déchelotte


Nutrition Clinique et Métabolisme, 2020

Abstract:
La nutrition artificielle à domicile, entérale ou parentérale, s’adresse à des malades chroniques fragiles. La situation actuelle de pandémie COVID-19 peut compromettre leur prise en charge à plusieurs niveaux : difficultés d’accès aux établissements de santé largement réorientés vers la prise en charge des malades COVID-19, possible pénurie d’infirmières à domicile, forte réduction des visites des prestataires de service à domicile, tensions sur les solutions hydro-alcooliques, les masques et les régulateurs de débit. Le but de ces recommandations établies par le Comité de Nutrition à Domicile de la Société Francophone de Nutrition Clinique et Métabolisme est, d’une part, de préciser la prise en charge minimale de ces patients, tant en termes de suivi que de matériels, mais surtout de s’adapter aux tensions actuelles relatives aux personnes et aux matériels, afin de poursuivre une prise en charge de qualité et de ne pas compromettre l’état de santé des patients en nutrition artificielle à domicile pendant la crise.

Home artificial nutrition, whether enteral or parenteral, is provided to chronic and fragile patients. The current COVID-19 epidemics may compromise their care at several levels: difficulties to access to hospitals mainly focused on treating COVID-19 patients, possible lack of nurses at home, strong reduction of visits by homecare providers, tended flow or lack of hand sanitizers, surgical masks and pumps. The aim of these recommendations put together by the French-speaking Society for Clinical Nutrition and Metabolism (SFNCM)’s Home Artificial Nutrition Committee is to define in terms of healthcare resources the minimum care to provide to these patients. We also aim to help cope with the possible tensions, in order to secure the care we must provide to home artificial nutrition patients during this crisis.

https://doi.org/10.1016/j.nupar.2020.03.002

Awadhesh Kumar Singh, Ritesh Gupta, Anoop Misra

Comorbidities in COVID-19: Outcomes in hypertensive cohort and controversies with renin angiotensin system blockers

Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Volume 14, Issue 4, 2020, Pages 283-287

Abstract:

Background and aims

COVID-19 is already a pandemic. Emerging data suggest an increased association and a heightened mortality in patients of COVID-19 with comorbidities. We aimed to evaluate the outcome in hypertensive patients with COVID-19 and its relation to the use of renin-angiotensin system blockers (RASB).

Methods

We have systematically searched the medical database up to March 27, 2020 and retrieved all the published articles in English language related to our topic using MeSH key words.

Results

From the pooled data of all ten available Chinese studies (n = 2209) that have reported the characteristics of comorbidities in patients with COVID-19, hypertension was present in nearly 21%, followed by diabetes in nearly 11%, and established cardiovascular disease (CVD) in approximately 7% of patients. Although the emerging data hints to an increase in mortality in
COVID-19 patients with known hypertension, diabetes and CVD, it should be noted that it was not adjusted for multiple confounding factors. Harm or benefit in COVID-19 patients receiving RASB has not been typically assessed in these studies yet, although mechanistically and plausibly both, benefit and harm is possible with these agents, given that COVID-19 expresses to tissues through the receptor of angiotensin converting enzyme-2.

Conclusion

Special attention is definitely required in patients with COVID-19 with associated comorbidities including hypertension, diabetes and established CVD. Although the role of RASB has a mechanistic equipoise, patients with COVID-19 should not stop these drugs at this point of time, as recommended by various world organizations and without the advice of health care provider.

https://doi.org/10.1016/j.dsx.2020.03.016

Nicola Decaro, Vito Martella, Linda J. Saif, Canio Buonavoglia

COVID-19 from veterinary medicine and one health perspectives: What animal coronaviruses have taught us

Research in Veterinary Science, Volume 131, 2020, Pages 21-23

https://doi.org/10.1016/j.rvsc.2020.04.009

Meaghann S. Weaver, Lori Wiener

Applying Palliative Care Principles to Communicate With Children About COVID-19

Journal of Pain and Symptom Management, 2020

Abstract:

Children are seeing rapid changes to their routines and facing an unpredictable future. Palliative care teams may consider expanding their communication training and skill sets to help families consider caring ways to communicate with their children and grandchildren about the coronavirus. Palliative care teams are wise to encourage families to ground their communication with children on key values: honesty and trust, self-compassion, safety, sensitivity, connection, preparedness, community building, recognition of death as a part of the life cycle, and legacy.

https://doi.org/10.1016/j.jpainsymman.2020.03.020

Chunqin Long, Huaxiang Xu, Qinglin Shen, Xianghai Zhang, Bing Fan, Chuanhong Wang, Bingliang Zeng, Zicong Li, Xiaofen Li, Honglu Li

Diagnosis of the Coronavirus disease (COVID-19): rRT-PCR or CT?

European Journal of Radiology, Volume 126, 2020

Abstract:
Purpose
To evaluate the diagnostic value of computed tomography (CT) and real-time reverse-transcriptase-polymerase chain reaction (rRT-PCR) for COVID-19 pneumonia.

Methods
This retrospective study included all patients with COVID-19 pneumonia suspicion, who were examined by both CT and rRT-PCR at initial presentation. The sensitivities of both tests were then compared. For patients with a final confirmed diagnosis, clinical and laboratory data, in addition to CT imaging findings were evaluated.

Results
A total of 36 patients were finally diagnosed with COVID-19 pneumonia. Thirty-five patients had abnormal CT findings at presentation, whereas one patient had a normal CT. Using rRT-PCR, 30 patients were tested positive, with 6 cases initially missed. Amongst these 6 patients, 3 became positive in the second rRT-PCR assay (after 2 days, 2 days and 3 days respectively), and the other 3 became positive only in the third round of rRT-PCR tests (after 5 days, 6 days and 8 days respectively). At presentation, CT sensitivity was therefore 97.2%, whereas the sensitivity of initial rRT-PCR was only 83.3%.

Conclusion
rRT-PCR may produce initial false negative results. We suggest that patients with typical CT findings but negative rRT-PCR results should be isolated, and rRT-PCR should be repeated to avoid misdiagnosis.

https://doi.org/10.1016/j.ejrad.2020.108961

Amol Agarwal, Alan Chen, Nishal Ravindran, Chau To, Paul J. Thuluvath

Gastrointestinal and Liver Manifestations of COVID-19

Journal of Clinical and Experimental Hepatology, 2020

Abstract:
The worldwide pandemic of COVID-19, caused by the virus SARS-CoV-2 has continued to progress, and increasing information is becoming available about the incidence of digestive symptoms as well as abnormal liver-associated enzymes in patients who are infected. These are postulated to be related to the virus's use of ACE-2 receptors located on certain intestinal cells, cholangiocytes, and hepatocytes. This brief review summarizes the available limited data on digestive manifestations of COVID-19. A significant proportion of COVID-19 patients can present initially with only digestive complaints. The most common digestive symptoms are anorexia, nausea, vomiting, and diarrhea. Liver-related transaminases are elevated in a substantial proportion of patients, although generally only mildly elevated. Currently there is no firm evidence to suggest that severity of digestive symptoms corresponds to severity of COVID-19 clinical course, however, more severe alterations in liver enzymes may correlate with worse clinical course. Given use of antiviral and antibacterial agents in sicker patients, drug-induced liver injury cannot be ruled out either in these cases. Although viral RNA can be detected in stool, it is unclear whether fecal-oral transmission can be achieved by the virus. As further data becomes available, our understanding of the digestive manifestations of COVID-19 will continue to evolve.
K. Wang, S. Kang, R. Tian, X. Zhang, X. Zhang, Y. Wang

Imaging manifestations and diagnostic value of chest CT of coronavirus disease 2019 (COVID-19) in the Xiaogan area

Clinical Radiology, Volume 75, Issue 5, 2020, Pages 341-347

Abstract:

AIM

To report the epidemiological, clinical, and radiological characteristics of patients with COVID-19 in Xiaogan, Hubei, China.

MATERIALS AND METHODS

The complete clinical and imaging data of 114 confirmed COVID-19 patients treated in Xiaogan Hospital were analysed retrospectively. Data were gathered regarding the presence of chest computed tomography (CT) abnormalities; the distribution, morphology, density, location, and stage of abnormal shadows on chest CT; and observing the correlation between the severity of chest infection and lymphocyte ratio and blood oxygen saturation (SPO2) in patients.

RESULTS

Chest CT revealed abnormal lung shadows in 110 patients. Regarding lesion distribution, multi-lobe lesions in both lungs were present in most patients (80 cases; 72.7%). Lesions most frequently involved both the peripheral zone and the central zone (62 cases; 56.4%). Regarding lesion morphology, 56 cases (50.1%) demonstrated patchy shadows that were partially fused into large areas. Thirty cases showed ground-glass opacity (27.3%), 30 cases showed the consolidation change (27.3%), and the remaining 50 cases showed both types of changes (45.4%). The progressing stage was the most common stage (54 cases; 49.1%). CT results showed a negative correlation with SPO2 and lymphocyte numbers (p<0.05), with r-values of −0.446 and −0.780, respectively.

CONCLUSION

Spiral CT is a sensitive examination method, which can be applied to make an early diagnosis and for evaluation of progression, with a diagnostic sensitivity and accuracy better than that of nucleic acid detection.
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The Lancet, 2020
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Annals of Emergency Medicine, 2020
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**Social media and telemedicine for oral diagnosis and counselling in the COVID-19**
Oral Oncology, 2020
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Clinical Radiology, 2020
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European Urology, 2020
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From the insight of glucose metabolism disorder: Oxygen therapy and blood glucose monitoring are crucial for quarantined COVID-19 patients

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High flow nasal cannula is a good treatment option for COVID-19

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Clinical considerations for patients with diabetes in times of COVID-19 epidemic

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International Journal of Obstetric Anesthesia, 2020

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Annals of Physical and Rehabilitation Medicine, 2020

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Chloroquine or hydroxychloroquine for prophylaxis of COVID-19
The Lancet Infectious Diseases, 2020
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COVID-19 may induce Guillain-Barré syndrome

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Psychiatry Research, Volume 288, 2020
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Schizophrenia Research, 2020
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**Innovative technologies for hand hygiene monitoring are urgently needed in the fight against COVID-19**
Journal of Hospital Infection, 2020
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**iPad deployment for virtual evaluation in the emergency department during the COVID-19 pandemic**
The recent outbreak of the novel COVID-19 is posing a severe public health risk across the globe. The Kingdom of Saudi Arabia (KSA) is one of the greatest destinations of religious congregations.
of Muslims. One of the largest religious gatherings is the Hajj that is anticipated to produce serious challenges of mass level exposures and spread to every corner of the world. Therefore, it is highly recommended that the Ministry of Hajj and Umrah (KSA), must regularly analyze the prevailing situation of COVID-19, and involve the religious scholars to make appropriate decisions about Hajj 2020. Although the Saudi government has been continuously taking all possible measures to contain the pandemic, people's cooperation is crucial in the fight against COVID-19.

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Letter to the Editor in Response to article: “Clinical considerations for patients with diabetes in times of COVID-19 epidemic (Gupta et al.)
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Travel Medicine and Infectious Disease, 2020
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Oral Oncology, 2020
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Brain, Behavior, and Immunity, 2020
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Dr Debanjan Banerjee

Psychological preparedness for the COVID-19 pandemic, perspectives from India
Sijia Tian, Nan Hu, Jing Lou, Kun Chen, Xuqin Kang, Zhenjun Xiang, Hui Chen, Dali Wang, Ning Liu, Dong Liu, Gang Chen, Yongliang Zhang, Dou Li, Jianren Li, Huixin Li, Sijia Tian, Nan Hu, Jing Lou, Kun Chen, Xuqin Kang, Zhenjun Xiang, Hui Chen, Dali Wang, Ning Liu, Dong Liu, Gang Chen, Yongliang Zhang, Dou Li, Jianren Li, Huixin Li

**Characteristics of COVID-19 infection in Beijing**

Journal of Infection, Volume 80, Issue 4, 2020, Pages 401-406

**Abstract:**

**Background**

Since the first case of a novel coronavirus (COVID-19) infection pneumonia was detected in Wuhan, China, a series of confirmed cases of the COVID-19 were found in Beijing. We analyzed the data of 262 confirmed cases to determine the clinical and epidemiological characteristics of COVID-19 in Beijing.

**Methods**

We collected patients who were transferred by Beijing Emergency Medical Service to the designated hospitals. The information on demographic, epidemiological, clinical, laboratory test for the COVID-19 virus, diagnostic classification, cluster case and outcome were obtained. Furthermore we compared the characteristics between severe and common confirmed cases which including mild cases, no-pneumonia cases and asymptomatic cases, and we also compared the features between COVID-19 and 2003 SARS.

**Findings**

By Feb 10, 2020, 262 patients were transferred from the hospitals across Beijing to the designated hospitals for special treatment of the COVID-19 infected by Beijing emergency medical service. Among of 262 patients, 46 (17.6%) were severe cases, 216 (82.4%) were common cases, which including 192 (73.3%) mild cases, 11(4.2%) non-pneumonia cases and 13 (5.0%) asymptomatic cases respectively. The median age of patients was 47.5 years old and 48.5% were male. 192 (73.3%) patients were residents of Beijing, 50 (26.0%) of which had been to Wuhan, 116 (60.4%) had close contact with confirmed cases, 21 (10.9%) had no contact history. The most common symptoms at the onset of illness were fever (82.1%), cough (45.8%), fatigue (26.3%), dyspnea (6.9%) and headache (6.5%). The median incubation period was 6.7 days, the interval time from between illness onset and seeing a doctor was 4.5 days. As of Feb 10, 17.2% patients have discharged and 81.7% patients remain in hospital in our study, the fatality of COVID-19 infection in Beijing was 0.9%.

**Interpretation**

On the basis of this study, we provided the ratio of the COVID-19 infection on the severe cases to the mild, asymptomatic and non-pneumonia cases in Beijing. Population was generally susceptible, and with a relatively low fatality rate. The measures to prevent transmission was very successful at early stage, the next steps on the COVID-19 infection should be focused on early isolation of patients and quarantine for close contacts in families and communities in Beijing.
Funding
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Areas of academic research with the impact of COVID-19
The American Journal of Emergency Medicine, 2020
Abstract:
Coronavirus (COVID-19) endemic is growing exponentially in the whole world. Researchers, technologists, doctors and other healthcare workers are working day and night on the development of vaccine and medicine to control and treat this virus. SARS-CoV-2 is the name of the virus responsible for causing COVID-19 disease, which is highly infectious and lethal. With exponentially increasing infections, proportionate fatalities are being reported both from developed and underdeveloped countries. As of today, more than one million people across the world have been reported infected with this virus, and more than 65,000 people have died of this disease. Hence, there is an urgent requirement for conducting academic research on several aspects of this highly contagious disease, to find effective means of containment and treatment of the disease, for now, and in future. We have identified some opportunities for academic research related to COVID-19 and have also provided suggestions to contain, prevent and treat this viral infection.
https://doi.org/10.1016/j.ajem.2020.04.022

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The Lancet Infectious Diseases, 2020
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Journal of Infection, 2020

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**Psychological status of parents of hospitalized children during the COVID-19 epidemic in China**

Psychiatry Research, Volume 288, 2020

**Abstract:**

A series of unexplained pneumonia appeared in Wuhan, Hubei Province, China, which is highly contagious. The virus is prone to nervous and anxious psychological reactions. In the objective environment of complex and densely populated hospitals, it is a high-risk area for virus-transmitted infections and children generally have lower immunity who are more likely to develop infections. The results showed that the mental health problems of parents of hospitalized children during the epidemic were more serious, and the anxiety and depression were more obvious.

https://doi.org/10.1016/j.psychres.2020.112953

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**Boosting the arsenal against COVID-19 through computational drug repurposing**

Drug Discovery Today, 2020

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The Second Worldwide Wave of Interest in Coronavirus since the COVID-19 Outbreaks in South Korea, Italy and Iran: A Google Trends Study
Brain, Behavior, and Immunity, 2020
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Fabio Ferreli, Francesca Gaino, Maurizio Cecconi, Elena Costantini, Giuseppe Spriano, Giuseppe Mercante
CORONA-steps for tracheotomy in COVID-19 patients: a staff-safe method for airway management
Oral Oncology, 2020
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Chloroquine Paradox May Cause More Damage Than Help Fight COVID-19
Microbes and Infection, 2020
Abstract:
Coronavirus disease 2019 (COVID-19) pandemic is the most recent health care crisis without specific prophylactic or therapeutic drugs. Chloroquine (CHL) and its safer derivative hydroxychloroquine (HCHL), antimalarial drugs, have been proposed to be repurposed to treat SARS coronavirus-2 (SARS-CoV-2), the causative agent of COVID-19. CHL/HCHL have anti-inflammatory activity and are used to treat rheumatoid arthritis, osteoarthritis and lupus. Although, CHL/HCHL have an anti-viral activity against several viruses in cell-cultures, the anti-viral activity in-vivo is questionable. Repurposing of CHL/HCHL to treat SARS-CoV-2 infection is appealing. However, there is empirical evidence from animal studies with other viruses suggesting that CHL/HCHL may have an untoward paradoxical effect. One thus cannot exclude the possibility that CHL may increase the severity of the disease and prove deleterious both for the patients and public health efforts to contain the highly contagious and explosive spread of SARS-CoV-2.
https://doi.org/10.1016/j.micinf.2020.04.004

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Lymphocyte subset (CD4+, CD8+) counts reflect the severity of infection and predict the clinical outcomes in patients with COVID-19
Journal of Infection, 2020
https://doi.org/10.1016/j.jinf.2020.03.054
Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records

The Lancet, Volume 395, Issue 10226, 2020, Pages 809-815

Abstract:

Summary

Background

Previous studies on the pneumonia outbreak caused by the 2019 novel coronavirus disease (COVID-19) were based on information from the general population. Limited data are available for pregnant women with COVID-19 pneumonia. This study aimed to evaluate the clinical characteristics of COVID-19 in pregnancy and the intrauterine vertical transmission potential of COVID-19 infection.

Methods

Clinical records, laboratory results, and chest CT scans were retrospectively reviewed for nine pregnant women with laboratory-confirmed COVID-19 pneumonia (ie, with maternal throat swab samples that were positive for severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]) who were admitted to Zhongnan Hospital of Wuhan University, Wuhan, China, from Jan 20 to Jan 31, 2020. Evidence of intrauterine vertical transmission was assessed by testing for the presence of SARS-CoV-2 in amniotic fluid, cord blood, and neonatal throat swab samples. Breastmilk samples were also collected and tested from patients after the first lactation.

Findings

All nine patients had a caesarean section in their third trimester. Seven patients presented with a fever. Other symptoms, including cough (in four of nine patients), myalgia (in three), sore throat (in two), and malaise (in two), were also observed. Fetal distress was monitored in two cases. Five of nine patients had lymphopenia (<1·0 × 10⁹ cells per L). Three patients had increased aminotransferase concentrations. None of the patients developed severe COVID-19 pneumonia or died, as of Feb 4, 2020. Nine livebirths were recorded. No neonatal asphyxia was observed in newborn babies. All nine livebirths had a 1-min Apgar score of 8–9 and a 5-min Apgar score of 9–10. Amniotic fluid, cord blood, neonatal throat swab, and breastmilk samples from six patients were tested for SARS-CoV-2, and all samples tested negative for the virus.

Interpretation

The clinical characteristics of COVID-19 pneumonia in pregnant women were similar to those reported for non-pregnant adult patients who developed COVID-19 pneumonia. Findings from this small group of cases suggest that there is currently no evidence for intrauterine infection caused by vertical transmission in women who develop COVID-19 pneumonia in late pregnancy.

Funding

Hubei Science and Technology Plan, Wuhan University Medical Development Plan.

**Global Threat of SARS-CoV-2/COVID-19 and the Need for More and Better Diagnostic Tools**

Archives of Medical Research, 2020

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**A Dermatologic Manifestation of COVID-19: Transient Livedo Reticularis**

Journal of the American Academy of Dermatology, 2020

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Brain, Behavior, and Immunity, 2020

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**Covid-19, the pandemic war: Implication for neurologists**

Revue Neurologique, Volume 176, Issue 4, 2020, Pages 223-224

[https://doi.org/10.1016/j.neurol.2020.03.002](https://doi.org/10.1016/j.neurol.2020.03.002)

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Journal of Hospital Infection, 2020

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Geographical Distance to the Epicenter of Covid-19 Predicts the Burnout of the Working Population: Ripple Effect or Typhoon Eye Effect?

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Abstract:

Covid-19 originated in Wuhan and rippled across China. We investigate how the geographical distance of working adults to the epicenter of Wuhan predicts their burnout - emotional, physical and mental exhaustion due to excessive and prolonged stress. Preliminary results of a survey of 308 working adults in 53 cities showed working adults’ distance to the epicenter of Wuhan had an inverted U-shaped relationship with their burnout. Such results help to identify regions where people may need more psychiatric assistance, with direct implications for healthcare practitioners and policymakers.

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**Addressing collegiate mental health amid COVID-19 pandemic**
Psychiatry Research, Volume 288, 2020

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College students encounter unique challenges leading to poor mental health in the wake of the COVID-19 outbreak. Before the pandemic started, one in five college students experienced one or more diagnosable mental disorders worldwide. The fact that the COVID-19 pandemic affects collegiate mental health underscores the urgent need to understand these challenges and concerns in order to inform the development of courses of action and public health messaging that can better support college students in this crisis. This article provides recommendations that prepare higher education institutions and health professionals for addressing collegiate mental health needs and challenges posed by COVID-19.

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Clinical characteristics and imaging manifestations of the 2019 novel coronavirus disease (COVID-19): A multi-center study in Wenzhou city, Zhejiang, China

Journal of Infection, Volume 80, Issue 4, 2020, Pages 388-393

Abstract:

Background

Little is known about COVID-19 outside Hubei. The aim of this paper was to describe the clinical characteristics and imaging manifestations of hospitalized patients with confirmed COVID-19 infection in Wenzhou, Zhejiang, China.

Methods

In this retrospective cohort study, 149 RT-PCR confirmed positive patients were consecutively enrolled from January 17th to February 10th, 2020 in three tertiary hospitals of Wenzhou. Outcomes were followed up until Feb 15th, 2020.

Findings

A total of 85 patients had Hubei travel/residence history, while another 49 had contact with people from Hubei and 15 had no traceable exposure history to Hubei. Fever, cough and expectoration were
the most common symptoms, 14 patients had decreased oxygen saturation, 33 had leukopenia, 53 had lymphopenia, and 82 had elevated C-reactive protein. On chest computed tomography (CT), lung segments 6 and 10 were mostly involved. A total of 287 segments presented ground glass opacity, 637 presented mixed opacity and 170 presented consolidation. Lesions were more localized in the peripheral lung with a patchy form. No significant difference was found between patients with or without Hubei exposure history. Seventeen patients had normal CT on admission of these, 12 had negative findings even 10 days later.

Interpretation

Most patients presented with a mild infection in our study. The imaging pattern of multifocal peripheral ground glass or mixed opacity with predominance in the lower lung is highly suspicious of COVID-19 in the first week of disease onset. Nevertheless, some patients can present with a normal chest finding despite testing positive for COVID-19. Funding: We did not receive any fundings.

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Abstract:
Objectives

At the end of 2019, the COVID-19 epidemic broke out in Wuhan, China. On January 20, 2020, Chinese expert group confirmed that the spread of the virus is characterized by human-to-human transmission.

Study Design

It is difficult for the public to prevent the spread of COVID-19 by only wearing masks, and the most important measure to take is to cut off the route of transmission; otherwise, there is no way to control the disease.

Methods

The Wuhan Municipal Government announced the control of the migration of the population in Wuhan, and population migration in Hubei Province also continues to be monitored after the confirmation of human-to-human transmission. Unfortunately, some problems remain.

Results

At the beginning of the epidemic breakout, there were not enough hospital beds for the patients in Wuhan, and a large number of patients were required to self-isolate at home. Therefore, home isolation poses significant risks.

Conclusions

The patient will transmit the virus to other people in the house if a patient has been confirmed to have the virus and is under home isolation. This can lead to the infection of the patient's entire family.

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COV-19 (corona virus disease 2019) is a kind of acute severe pneumonia caused by 2019-nCoV (2019-nCoV) infection. Since December 2019, it has been found in Wuhan, Hubei Province, and then spread to the whole country. Some parts of the world also showed an outbreak trend [1–3]. Real-time fluorescence quantitative reverse transcriptase polymerase chain reaction (reverse transcriptase-polymerase chain reaction, RT-PCR) and viral gene sequencing are the gold standard for the diagnosis of COVID-19. At present, upper respiratory tract nasopharyngeal swabs are mostly used as nucleic acid detection samples in China, but the positive rate is low. However, there are few reports on clinical application of 2019-nCoV nucleic acid detection in other biological samples.

Methods
The East Section of Renmin Hospital of Wuhan University is a designated COVID-19 hospital in Wuhan City, Hubei Province, China. This observation study included 132 patients diagnosed with COVID-19 in the infectious disease areas of the East Section of Renmin Hospital of Wuhan University from 2020.1.31 to 2020.2.29. COVID-19 diagnostic criteria: according to China’s 《 pneumonia diagnosis and treatment Program of novel coronavirus infection (trial version 7) 》, in accordance with the relevant epidemiological and clinical manifestations, nasopharyngeal swabs real-time fluorescence RT-PCR detection of 2019-nCoV nucleic acid positive, COVID-19 cases were divided into mild, ordinary, severe and severe [4]. The nasopharyngeal swabs of 132 cases of COVID-19 were positive for 2019-nCoV nucleic acid on admission, including 72 males and 60 females, with an average age of 66.7 ± 9.1 years, including 80 cases of common type, 44 cases of severe type and 8 cases of critical type. During the period of admission, under the condition of tertiary protection, nasopharyngeal swabs, sputum, blood, feces and anal swabs of COVID-19 cases were collected many times in the isolation ward for 2019-nCoV nucleic acid detection. All biological samples are sealed and transferred to the laboratory in strict accordance with the standard process. The RT-PCR test kits (BioGerm) were recommended by the Chinese Center for Disease Control and Prevention. The same technician and brand of test kit was used for all RT-PCR testing reported; both internal controls and negative controls were routinely performed with each batch of tests.

Results
| 132 the results of 2019-nCoV nucleic acid test of various biological samples during the treatment of confirmed COVID-19 cases are as follows: the positive rate of 2019-nCoV nucleic acid test of nasopharyngeal swab is 38.13% (180/472 times), the positive rate of 2019-nCoV nucleic acid test of sputum is 48.68% (148/304 times), the positive rate of blood 2019-nCoV nucleic acid test is 3.03% (4/132 times), and the positive rate of 2019-nCoV nucleic acid test of feces is 9.83% (24/244 times). The positive rate of 2019-nCoV nucleic acid detection in anal swabs is 10.00% (12/120 times).
In this study, it was found that the positive rate of 2019-nCoV nucleic acid in sputum of 132 patients with COVID-19 was higher than that of nasopharyngeal swabs, and viral nucleic acids were also detected in blood and digestive tract (fecal/anal swabs). Simple detection of nasopharyngeal swab 2019-nCoV nucleic acid detection positive rate is not high, multi-sample 2019-nCoV nucleic acid detection can improve the accuracy, reduce the false negative rate, better guide clinical treatment and evaluate the therapeutic effect.

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**The economic impact of the Coronavirus 2019 (Covid-2019): Implications for the mining industry**

The Extractive Industries and Society, 2020

**Abstract:**

The Coronavirus 2019 (Covid-19) global pandemic has not only caused infections and deaths, but it has also wreaked havoc with the global economy on a scale not seen since at least the Great Depression. Covid-19 has the potential to destroy individual livelihoods, businesses, industries and entire economies. The mining sector is not immune to these impacts, and the crisis has the potential to have severe consequences in the short, medium and long-term for the industry. Understanding these impacts, and analysing their significance for the industry, and the role it plays in wider economic development is a crucial task for academic research.

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**Pandémie de covid-19 : un grand défi nutritionnel, une réponse massive et coordonnée**
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Diabetes Research and Clinical Practice, 2020
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Microbes and Infection, 2020

**Abstract:**
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European Urology, 2020
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The Lancet Infectious Diseases, 2020

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**COVID-19 and ART: the view of the Italian Society of Fertility and Sterility and Reproductive Medicine**

Reproductive BioMedicine Online, 2020

**Abstract:**

The COVID-19 pandemic is an unprecedented global situation. As ART specialists we should be cautious, carefully monitoring the situation whilst contributing by sharing novel evidence to counsel our patients, both pregnant women and would-be mothers. Time to egg collection and drop-out rates are parameters critical to scheduling treatments once the curve of infections has peaked and plateaued in each country. In order to reduce both parameters, infertile patients now require even more support from their IVF team: urgent oocyte collection for oncologic patients must be guaranteed, and oocyte retrievals for women of advanced maternal age and/or reduced ovarian reserve cannot be postponed indefinitely. This document represents the position of the Italian Society of Fertility and Sterility and Reproductive Medicine (SIFES-MR) in outlining ART priorities during and after this emergency.

[https://doi.org/10.1016/j.rbmo.2020.04.003](https://doi.org/10.1016/j.rbmo.2020.04.003)

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**COVID-19: immense necessity and challenges in meeting the needs of minorities, especially asylum seekers and undocumented migrants**

Public Health, 2020

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Journal of Emergency Nursing, 2020
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The Lancet, Volume 395, Issue 10228, 2020, Page 945
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**A HIGH-VOLUME THORACIC SURGERY DIVISION INTO THE STORM OF THE COVID-19 PANDEMIC**

The Annals of Thoracic Surgery, 2020
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**Coronavirus (COVID-19), First Indication of Efficacy of Gene-Eden-VIR/Novirin in SARS-CoV-2 Infections**

International Journal of Antimicrobial Agents, 2020
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**Protecting our healthcare workers during the COVID-19 pandemic**

The American Journal of Emergency Medicine, 2020
Kristian D. Stensland, Todd M. Morgan, Alireza Moinzadeh, Cheryl T. Lee, Alberto Briganti, James W.F. Catto, David Canes

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European Urology, 2020

https://doi.org/10.1016/j.eururo.2020.03.027

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**Treating the Mental Health Effects of COVID-19: The Need for At-Home Neurotherapeutics Is Now**

Brain Stimulation, 2020

https://doi.org/10.1016/j.brs.2020.04.005

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**AGA Clinical Practice Update on Management of Inflammatory Bowel Disease During the COVID-19 Pandemic: Expert Commentary**

Gastroenterology, 2020

**Abstract:**

**Description**

The purpose of this AGA Institute Clinical Practice Update is to rapidly review the emerging evidence and provide timely expert recommendations regarding the management of patients with inflammatory bowel disease during the COVID-19 pandemic.

**Methods**

This expert commentary was commissioned and approved by the AGA Institute Clinical Practice Updates Committee (CPUC) and the AGA Governing Board to provide timely perspective on a topic of high clinical importance to the AGA membership, and underwent internal peer review by the CPUC and external peer review through standard procedures of Gastroenterology.

https://doi.org/10.1053/j.gastro.2020.04.012

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**Taking the right measures to control COVID-19**

The Lancet Infectious Diseases, 2020
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Reproductive BioMedicine Online, 2020
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Clinical Radiology, 2020

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Journal of Molecular and Cellular Cardiology, 2020

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COVID-19 in Latin America

The Lancet Infectious Diseases, 2020

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Pharmacy Emergency Preparedness and Response (PEPR) framework for expanding pharmacy professionals’ roles and contributions to emergency preparedness and response during the COVID-19 pandemic and beyond

Research in Social and Administrative Pharmacy, 2020

Abstract:

Background

Pharmacists have long been involved in public health and emergency preparedness and response (EP&R), including through preventive measures such as screening, vaccinations, testing and pharmaceutical countermeasures, as well as ensuring medication safety and access during natural disasters and pandemics. Pharmacy professionals are considered essential partners in response to the ongoing COVID-19 pandemic. Community and hospital pharmacies are expanding services and hours to provide essential services, putting pharmacists and their co-workers at the frontlines for patient care and safety to improve public health. In addition, pharmacy professionals are increasingly integrating into global, national, state and local EP&R efforts, including into
interprofessional teams, such as Medical Reserve Corps (MRCs). However, lacunae exist for further integration of pharmacists into public health and safety initiatives. There are increasing opportunities and recommendations that should be expanded upon to provide improved patient care and population health intervention, and to ensure healthcare worker and public health safety.

Objective

Develop a Pharmacy Emergency Preparedness and Response (PEPR) Framework and recommendations for pharmacy professional pathways towards full integration within public health EP&R efforts (such as the COVID-19 pandemic), and enhanced recognition of pharmacists’ skills, roles and contributions as integral members of the interprofessional healthcare team.

Methods

This paper draws on the American Society of Health-System Pharmacists (ASHP) 2003 Statement on the Role of Health-System Pharmacists in Emergency Preparedness and lessons learned from previous and current public health emergencies, such as the 2009 H1N1 pandemic and the current COVID-19 pandemic, to provide expanded guidance for pharmacists and pharmacy professionals across all practice settings in EP&R. The PEPR framework also incorporates information and recommendations from The Pharmacy Organizations’ Joint Policy Recommendations to Combat the COVID-19 Pandemic (March 2020), CDC-NIOSH, Health Departments and Emergency Preparedness guidance and resources, Boards of Pharmacy, and other pharmacy professional organizations and educational institutions.

Results

Based on the methods and resources utilized in developing this PEPR framework, five key focus areas were identified as follow: 1) Emergency preparedness and response 2) Operations management 3) Patient care and population health interventions 4) Public health pharmacy education and continuing professional education 5) Evaluation, research and dissemination for impact and outcomes.

Conclusion and Recommendations: Pharmacists and pharmacy professionals have been at the frontlines in responding to the COVID-19 pandemic. Yet, challenges remain, such as limited availability of personal protection equipment, high risk of infectious exposures inherent in healthcare professions, and legislative hurdles resulting in lack of provider status and related reimbursements. Recommendations to enhance pharmacy's scope as public health professionals involved in EP&R include targeted training and education on key framework areas and policymaking. Pharmacy professionals should further integrate with interdisciplinary public health teams. Additional research and dissemination on impacts and outcomes of EP&R can enhance recognition of pharmacy professionals' contribution and value during public health emergencies. The PEPR Framework can be utilized to develop, implement, evaluate, and disseminate results in order to strengthen existing efforts and to establish new initiatives in EP&R.


Rosineide Marques Ribas
Coronavirus Disease 2019 (COVID-19) and healthcare-associated infections: Emerging and future challenges for public health in Brazil

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101675

Aaron van Dorn, Rebecca E Cooney, Miriam L Sabin

COVID-19 exacerbating inequalities in the US

The Lancet, Volume 395, Issue 10232, 2020, Pages 1243-1244

https://doi.org/10.1016/S0140-6736(20)30893-X

Toshiaki Kikuchi

COVID-19 outbreak: an elusive enemy

Respiratory Investigation, 2020

Abstract:

A novel coronavirus, officially termed as severe acute respiratory syndrome (SARS)-CoV-2, emerged in Wuhan, China, toward the end of 2019. Just four months later, more than 100,000 people were diagnosed with COVID-19, the resulting disease. The genetic analysis of SARS-CoV-2 revealed that this virus is a new Betacoronavirus, closely related to bat-derived SARS-like coronaviruses. Clinical data from hospitals in China have revealed that approximately 10% of the infected patients have severe disease requiring intensive care. Since containment of the outbreak may have partially failed due to asymptomatic transmission, it is imperative to accelerate the development of rapid point-of-care diagnostic tests, vaccines, and therapeutics for the COVID-19 epidemic. A novel coronavirus — officially named as severe acute respiratory syndrome (SARS)-CoV-2 by the authorities — emerged in Wuhan, China, toward the end of 2019 [1, 2]. Just four months later, more than 100,000 cases have been diagnosed with the resulting disease, COVID-19, in more than 100 countries at the time of writing this paper [3]. Not only does mainland China have the most number of reported cases (94.4%), but its case-fatality rate is also relatively higher than that of other countries as of February 28, 2020 (China: 3.5%, 2,791 deaths among 78,961 confirmed cases; other countries: 1.4%, 67 deaths among 4,691 confirmed cases) [4]. In an attempt to restrict the outbreak, China quickly implemented an unprecedented measure of quarantining 35 million people in Wuhan and several other cities, but its impact on slowing the global spread of the virus now seems inadequate. In fact, the number of cases in local human-to-human transmission kept soaring in several countries as of March 25, 2020: Italy 63,927 cases, United States of America 42,164 cases, and Spain 33,089 cases [3]. In Japan, 1,128 cases were confirmed based on positive viral nucleic acid test results, and the overall case-fatality rate was 3.7% (i.e., 42 deaths) [3].

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The coronavirus disease-19 (COVID-19) is caused by the novel severe acute respiratory syndrome coronavirus that was first detected at the end of December 2019. The epidemic has affected various regions of China in different degrees. As the situations evolve, the COVID-19 had been confirmed in many countries, and made a assessment that it can be characterized as a pandemic by the World Health Organization on March 11, 2020. Drugs are the main treatment of COVID-19 patients. Pharmaceutical service offers drug safety ensurance for COVID-19 patients. According to COVID-19 prevention and control policy and requirements, combined with series of diagnosis and treatment plans, pharmacists in the first provincial-level COVID-19 diagnosis and treatment unit in Jilin Province in Northeast China have established the management practices of drug supply and pharmaceutical care from four aspects: personnel, drugs supply management, off-label drug use
management and pharmaceutical care. During the outbreak, the pharmaceutical department of THJU completed its assigned workload to ensure drug supply. So far, no nosocomial infections and medication errors have occurred, which has stabilized the mood of the staff and boosted the pharmacists' confidence in fighting the epidemic. For the treatment of COVID-19, pharmacists conducted adverse reaction monitoring and participated in the multidisciplinary consultation of COVID-19. Up to now, the COVID-19 patients admitted to THJU have not shown any new serious adverse reactions and been cured finally. The hospital pharmacy department timely adjusted the work mode, and the formed management practices is a powerful guarantee for the prevention and control of the COVID-19 epidemic. This paper summarized the details and practices of drug supply and pharmaceutical services management to provide experience for the people who involving in COVID-19 prevention and contain in other abroad epidemic areas.

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Psychosomatics, 2020

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Schizophrenia Research, 2020

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Schizophrenia researchers may ask themselves—or be asked by others—whether their research is relevant in the face of the COVID-19 pandemic. This commentary argues that schizophrenia research is more relevant than ever during this public health crisis, because of the likelihood that the COVID-19 pandemic may lead to increased incidence of psychotic disorders.


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**Novel coronavirus disease (Covid-19): The first two patients in the UK with person to person transmission**

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“2019-NCoV”
B. Robson

Computers and viral diseases. Preliminary bioinformatics studies on the design of a synthetic vaccine and a preventative peptidomimetic antagonist against the SARS-CoV-2 (2019-nCoV, COVID-19) coronavirus

Abstract:
This paper concerns study of the genome of the Wuhan Seafood Market isolate believed to represent the causative agent of the disease COVID-19. This is to find a short section or sections of viral protein sequence suitable for preliminary design proposal for a peptide synthetic vaccine and a peptidomimetic therapeutic, and to explore some design possibilities. The project was originally directed towards a use case for the Q-UEL language and its implementation in a knowledge management and automated inference system for medicine called the BioIngine, but focus here remains mostly on the virus itself. However, using Q-UEL systems to access relevant and emerging literature, and to interact with standard publically available bioinformatics tools on the Internet, did help quickly identify sequences of amino acids that are well conserved across many coronaviruses including 2019-nCoV. KRSFIEDLLFNKV was found to be particularly well conserved in this study and corresponds to the region around one of the known cleavage sites of the SARS virus that are believed to be required for virus activation for cell entry. This sequence motif and surrounding variations formed the basis for proposing a specific synthetic vaccine epitope and peptidomimetic agent. The work can, nonetheless, be described in traditional bioinformatics terms, and readily reproduced by others, albeit with the caveat that new data and research into 2019-nCoV is emerging and evolving at an explosive pace. Preliminary studies using molecular modeling and docking, and in that context the potential value of certain known herbal extracts, are also described.

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A data driven time-dependent transmission rate for tracking an epidemic: a case study of 2019-nCoV


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Nonstructural proteins NS7b and NS8 are likely to be phylogenetically associated with evolution of 2019-nCoV

Infection, Genetics and Evolution, Volume 81, 2020

Abstract:
The seventh novel human infecting Betacoronavirus that causes pneumonia (2019 novel coronavirus, 2019-nCoV) originated in Wuhan, China. The evolutionary relationship between 2019-nCoV and the other human respiratory illness-causing coronavirus is not closely related. We sought
to characterize the relationship of the translated proteins of 2019-nCoV with other species of Orthocoronavirinae. A phylogenetic tree was constructed from the genome sequences. A cluster tree was developed from the profiles retrieved from the presence and absence of homologs of ten 2019-nCoV proteins. The combined data were used to characterize the relationship of the translated proteins of 2019-nCoV to other species of Orthocoronavirinae. Our analysis reliably suggests that 2019-nCoV is most closely related to BatCoV RaTG13 and belongs to subgenus Sarbecovirus of Betacoronavirus, together with SARS coronavirus and Bat-SARS-like coronavirus. The phylogenetic profiling cluster of homolog proteins of one annotated 2019-nCoV protein against other genome sequences revealed two clades of ten 2019-nCoV proteins. Clade 1 consisted of a group of conserved proteins in Orthocoronavirinae comprising Orf1ab polyprotein, Nucleocapsid protein, Spike glycoprotein, and Membrane protein. Clade 2 comprised six proteins exclusive to Sarbecovirus and Hibecovirus. Two of six Clade 2 nonstructural proteins, NS7b and NS8, were exclusively conserved among 2019-nCoV, BetaCoV_RaTG, and BatSARS-like Cov. NS7b and NS8 have previously been shown to affect immune response signaling in the SARS-CoV experimental model. Thus, we speculated that knowledge of the functional changes in the NS7b and NS8 proteins during evolution may provide important information to explore the human infective property of 2019-nCoV.

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Travel Medicine and Infectious Disease, 2020
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The importance of designing and implementing participatory surveillance system: An approach as early detection and prevention of novel coronavirus (2019-nCov)
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**2019-nCoV pandemic: A disruptive and stressful atmosphere for Indian academic fraternity**
Brain, Behavior, and Immunity, 2020
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Carolina Oi Lam Ung

**Community pharmacist in public health emergencies: Quick to action against the coronavirus 2019-nCoV outbreak**
Research in Social and Administrative Pharmacy, Volume 16, Issue 4, 2020, Pages 583-586

**Abstract:**
The 2019-nCoV infection that is caused by a novel strain of coronavirus was first detected in China in the end of December 2019 and declared a public health emergency of international concern by the World Health Organization on January 30, 2020. Community pharmacists in one of the first areas that had confirmed cases of the viral infection, Macau, joined the collaborative force in supporting the local health emergency preparedness and response arrangements. This paper aimed to improve the understanding of community pharmacists’ role in case of 2019-CoV outbreak based on the practical experiences in consultation with the recommendations made by the International Pharmaceutical Federation on the Coronavirus 2019-nCoV outbreak.

https://doi.org/10.1016/j.sapharm.2020.02.003

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The novel coronavirus (2019-nCoV) in pregnancy: What we need to know
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The spike glycoprotein of the new coronavirus 2019-nCoV contains a furin-like cleavage site absent in CoV of the same clade
Antiviral Research, Volume 176, 2020

Abstract:
In 2019, a new coronavirus (2019-nCoV) infecting Humans has emerged in Wuhan, China. Its genome has been sequenced and the genomic information promptly released. Despite a high similarity with the genome sequence of SARS-CoV and SARS-like CoVs, we identified a peculiar furin-like cleavage site in the Spike protein of the 2019-nCoV, lacking in the other SARS-like CoVs. In this article, we discuss the possible functional consequences of this cleavage site in the viral cycle, pathogenicity and its potential implication in the development of antivirals.
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Potential inhibitors against 2019-nCoV coronavirus M protease from clinically approved medicines
Journal of Genetics and Genomics, Volume 47, Issue 2, 2020, Pages 119-121
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Structure analysis of the receptor binding of 2019-nCoV
Biochemical and Biophysical Research Communications, Volume 525, Issue 1, 2020, Pages 135-140

Abstract:
2019-nCoV is a newly identified coronavirus with high similarity to SARS-CoV. We performed a structural analysis of the receptor binding domain (RBD) of spike glycoprotein responsible for entry of coronaviruses into host cells. The RBDs from the two viruses share 72% identity in amino acid sequences, and molecular simulation reveals highly similar ternary structures. However, 2019-nCoV has a distinct loop with flexible glycyl residues replacing rigid prolyl residues in SARS-CoV. Molecular modeling revealed that 2019-nCoV RBD has a stronger interaction with angiotensin converting enzyme 2 (ACE2). A unique phenylalanine F486 in the flexible loop likely plays a major role because its penetration into a deep hydrophobic pocket in ACE2. ACE2 is widely expressed with conserved primary structures throughout the animal kingdom from fish, amphibians, reptiles,
birds, to mammals. Structural analysis suggests that ACE2 from these animals can potentially bind RBD of 2019-nCoV, making them all possible natural hosts for the virus. 2019-nCoV is thought to be transmitted through respiratory droplets. However, since ACE2 is predominantly expressed in intestines, testis, and kidney, fecal-oral and other routes of transmission are also possible. Finally, antibodies and small molecular inhibitors that can block the interaction of ACE2 with RBD should be developed to combat the virus.

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**Association between 2019-nCoV transmission and N95 respirator use**

Journal of Hospital Infection, 2020

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Xingchen Pan, David M. Ojcius, Tianyue Gao, Zhongsheng Li, Chunhua Pan, Chungen Pan

**Lessons learned from the 2019-nCoV epidemic on prevention of future infectious diseases**

Microbes and Infection, Volume 22, Issue 2, 2020, Pages 86-91

**Abstract:**

Only a month after the outbreak of pneumonia caused by 2019-nCoV, more than forty-thousand people were infected. This put enormous pressure on the Chinese government, medical healthcare provider, and the general public, but also made the international community deeply nervous. On the 25th day after the outbreak, the Chinese government implemented strict traffic restrictions on the area where the 2019-nCoV had originated—Hubei province, whose capital city is Wuhan. Ten days later, the rate of increase of cases in Hubei showed a significant difference ($p = 0.0001$) compared with the total rate of increase in other provinces of China. These preliminary data suggest the effectiveness of a traffic restriction policy for this pandemic thus far. At the same time, solid financial support and improved research ability, along with network communication technology, also greatly facilitated the application of epidemic prevention measures. These measures were motivated by the need to provide effective treatment of patients, and involved consultation with three major groups in policy formulation—public health experts, the government, and the general public. It was also aided by media and information technology, as well as international cooperation. This experience will provide China and other countries with valuable lessons for quickly coordinating and coping with future public health emergencies.

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Fu-Sheng Wang, Chao Zhang

**What to do next to control the 2019-nCoV epidemic?**
Emerging understandings of 2019-nCoV

Mohammad Ammad Ud Din, Leela Krishna Teja Boppana

An update on the 2019-nCoV outbreak

American Journal of Infection Control, 2020

Abstract:

Cases of 2019-nCoV are now being reported in different regions around the globe, concerning for a possible SARS like epidemic that infected for than 8000 people in 2002-03. Though, major health authorities are still working on understanding the virus and its transmission, here we present a brief report regarding the 2019-nCoV outbreak and what is known so far.

Offline: 2019-nCoV—“A desperate plea”

Richard Horton

Baricitinib as potential treatment for 2019-nCoV acute respiratory disease

Peter Richardson, Ivan Griffin, Catherine Tucker, Dan Smith, Olly Oechsle, Anne Phelan, Justin Stebbing

Early lessons from the frontline of the 2019-nCoV outbreak

Hong Zhang
Full-genome evolutionary analysis of the novel coronavirus (2019-nCoV) rejects the hypothesis of emergence as a result of a recent recombination event

Abstract:

Background

A novel coronavirus (2019-nCoV) associated with human to human transmission and severe human infection has been recently reported from the city of Wuhan in China. Our objectives were to characterize the genetic relationships of the 2019-nCoV and to search for putative recombination within the subgenus of sarbecovirus.

Methods

Putative recombination was investigated by RDP4 and Simplot v3.5.1 and discordant phylogenetic clustering in individual genomic fragments was confirmed by phylogenetic analysis using maximum likelihood and Bayesian methods.

Results

Our analysis suggests that the 2019-nCoV although closely related to BatCoV RaTG13 sequence throughout the genome (sequence similarity 96.3%), shows discordant clustering with the Bat_SARS-like coronavirus sequences. Specifically, in the 5′-part spanning the first 11,498 nucleotides and the last 3′-part spanning 24,341–30,696 positions, 2019-nCoV and RaTG13 formed a single cluster with Bat_SARS-like coronavirus sequences, whereas in the middle region spanning the 3′-end of ORF1a, the ORF1b and almost half of the spike regions, 2019-nCoV and RaTG13 grouped in a separate distant lineage within the sarbecovirus branch.

Conclusions

The levels of genetic similarity between the 2019-nCoV and RaTG13 suggest that the latter does not provide the exact variant that caused the outbreak in humans, but the hypothesis that 2019-nCoV has originated from bats is very likely. We show evidence that the novel coronavirus (2019-nCov) is not-mosaic consisting in almost half of its genome of a distinct lineage within the betacoronavirus. These genomic features and their potential association with virus characteristics and virulence in humans need further attention.

Maps, masks and media – Traveller and practitioner resources for 2019 novel coronavirus (2019-nCoV) acute respiratory virus

Travel Medicine and Infectious Disease, Volume 33, 2020
Yifei Xu

**Unveiling the Origin and Transmission of 2019-nCoV**

Trends in Microbiology, Volume 28, Issue 4, 2020, Pages 239-240

**Abstract:**

A novel coronavirus has caused thousands of human infections in China since December 2019, raising a global public health concern. Recent studies (Huang et al., Chan et al., and Zhou et al.) have provided timely insights into its origin and ability to spread among humans, informing infection prevention and control practices.

https://doi.org/10.1016/j.tim.2020.02.001

Donald R.J. Singer

**A new pandemic out of China: the Wuhan 2019-nCoV coronavirus syndrome**

Health Policy and Technology, Volume 9, Issue 1, 2020, Pages 1-2

https://doi.org/10.1016/j.hlpt.2020.02.001

Wei Zheng

**Mental health and a novel coronavirus (2019-nCoV) in China**

Journal of Affective Disorders, 2020

https://doi.org/10.1016/j.jad.2020.03.041

Zhan-hui Feng, Yong-ran Cheng, Juan Chen, Lan Ye, Meng-Yun Zhou, Ming-Wei Wang

**Chinese medical personnel against the 2019-nCoV**

Journal of Infection, Volume 80, Issue 5, 2020, Pages 578-606

https://doi.org/10.1016/j.jinf.2020.02.011

Joseph T Wu, Kathy Leung, Gabriel M Leung

**Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study**

The Lancet, Volume 395, Issue 10225, 2020, Pages 689-697

**Abstract:**

Summary
Background

Since Dec 31, 2019, the Chinese city of Wuhan has reported an outbreak of atypical pneumonia caused by the 2019 novel coronavirus (2019-nCoV). Cases have been exported to other Chinese cities, as well as internationally, threatening to trigger a global outbreak. Here, we provide an estimate of the size of the epidemic in Wuhan on the basis of the number of cases exported from Wuhan to cities outside mainland China and forecast the extent of the domestic and global public health risks of epidemics, accounting for social and non-pharmaceutical prevention interventions.

Methods

We used data from Dec 31, 2019, to Jan 28, 2020, on the number of cases exported from Wuhan internationally (known days of symptom onset from Dec 25, 2019, to Jan 19, 2020) to infer the number of infections in Wuhan from Dec 1, 2019, to Jan 25, 2020. Cases exported domestically were then estimated. We forecasted the national and global spread of 2019-nCoV, accounting for the effect of the metropolitan-wide quarantine of Wuhan and surrounding cities, which began Jan 23–24, 2020. We used data on monthly flight bookings from the Official Aviation Guide and data on human mobility across more than 300 prefecture-level cities in mainland China from the Tencent database. Data on confirmed cases were obtained from the reports published by the Chinese Center for Disease Control and Prevention. Serial interval estimates were based on previous studies of severe acute respiratory syndrome coronavirus (SARS-CoV). A susceptible-exposed-infectious-recovered metapopulation model was used to simulate the epidemics across all major cities in China. The basic reproductive number was estimated using Markov Chain Monte Carlo methods and presented using the resulting posterior mean and 95% credible interval (CrI).

Findings

In our baseline scenario, we estimated that the basic reproductive number for 2019-nCoV was 2·68 (95% CrI 2·47–2·86) and that 75 815 individuals (95% CrI 37 304–130 330) have been infected in Wuhan as of Jan 25, 2020. The epidemic doubling time was 6·4 days (95% CrI 5·8–7·1). We estimated that in the baseline scenario, Chongqing, Beijing, Shanghai, Guangzhou, and Shenzhen had imported 461 (95% CrI 227–805), 113 (57–193), 98 (49–168), 111 (56–191), and 80 (40–139) infections from Wuhan, respectively. If the transmissibility of 2019-nCoV were similar everywhere domestically and over time, we inferred that epidemics are already growing exponentially in multiple major cities of China with a lag time behind the Wuhan outbreak of about 1–2 weeks.

Interpretation

Given that 2019-nCoV is no longer contained within Wuhan, other major Chinese cities are probably sustaining localised outbreaks. Large cities overseas with close transport links to China could also become outbreak epicentres, unless substantial public health interventions at both the population and personal levels are implemented immediately. Independent self-sustaining outbreaks in major cities globally could become inevitable because of substantial exportation of presymptomatic cases and in the absence of large-scale public health interventions. Preparedness plans and mitigation interventions should be readied for quick deployment globally.

Funding

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https://doi.org/10.1016/S0140-6736(20)30260-9
On the use of corticosteroids for 2019-nCoV pneumonia

Lianhan Shang, Jianping Zhao, Yi Hu, Ronghui Du, Bin Cao


https://doi.org/10.1016/S0140-6736(20)30361-5

Offline: 2019-nCoV outbreak—early lessons

Richard Horton

The Lancet, Volume 395, Issue 10221, 2020, Page 322

https://doi.org/10.1016/S0140-6736(20)30212-9


Tommaso Lupia, Silvia Scabini, Simone Mornese Pinna, Giovanni Di Perri, Francesco Giuseppe De Rosa, Silvia Corcione


Abstract:

Objectives

Following the public-health emergency of international concern (PHEIC) declared by the World Health Organization (WHO) on 30 January 2020 and the recent outbreak caused by 2019 novel coronavirus (2019-nCoV) [officially renamed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)] in China and 29 other countries, we aimed to summarise the clinical aspects of the novel Betacoronavirus disease (COVID-19) and its possible clinical presentations together with suggested therapeutic algorithms for patients who may require antimicrobial treatment.

Methods

The currently available literature was reviewed for microbiologically confirmed infections by 2019-nCoV or COVID-19 at the time of writing (13 February 2020). A literature search was performed using the PubMed database and Cochrane Library. Search terms included ‘novel coronavirus’ or ‘2019-nCoV’ or ‘COVID-19’.

Results

Published cases occurred mostly in males (age range, 8–92 years). Cardiovascular, digestive and endocrine system diseases were commonly reported, except previous chronic pulmonary diseases [e.g. chronic obstructive pulmonary disease (COPD), asthma, bronchiectasis] that were surprisingly underreported. Fever was present in all of the case series available, flanked by cough, dyspnoea, myalgia and fatigue. Multiple bilateral lobular and subsegmental areas of consolidation or bilateral ground-glass opacities were the main reported radiological features of 2019-nCoV infection, at least in the early phases of the disease.

Conclusion
The new 2019-nCoV epidemic is mainly associated with respiratory disease and few extrapulmonary signs. However, there is a low rate of associated pre-existing respiratory co-morbidities.

https://doi.org/10.1016/j.jgar.2020.02.021

Gordon J.G. Asmundson, Steven Taylor

**Coronaphobia: Fear and the 2019-nCoV outbreak**

Journal of Anxiety Disorders, Volume 70, 2020

https://doi.org/10.1016/j.janxdis.2020.102196

Rui Li, Songlin Qiao, Gaiping Zhang

**Analysis of angiotensin-converting enzyme 2 (ACE2) from different species sheds some light on cross-species receptor usage of a novel coronavirus 2019-nCoV**

Journal of Infection, Volume 80, Issue 4, 2020, Pages 469-496

https://doi.org/10.1016/j.jinf.2020.02.013

Cheng-wei Lu, Xiu-fen Liu, Zhi-fang Jia

**2019-nCoV transmission through the ocular surface must not be ignored**

The Lancet, Volume 395, Issue 10224, 2020, Page e39

https://doi.org/10.1016/S0140-6736(20)30313-5

Jingzhong Wang, Yi Liao, Xiaoyang Wang, Yichong Li, Dan Jiang, Jianfan He, Shunxiang Zhang, Junjie Xia

**Incidence of novel coronavirus (2019-nCoV) infection among people under home quarantine in Shenzhen, China**

Travel Medicine and Infectious Disease, 2020

**Abstract:**

**Background**

Since the outbreak of 2019-nCoV in December, Chinese government has implemented various measures including travel bans, centralized treatments, and home quarantines to slowing the transmission across the country. In this study, we aimed to estimate the incidence of 2019-nCoV infection among people under home quarantine in Shenzhen, China. **Methods:** We used a stratified multistage random sampling method to recruit participants and collected demographic information and laboratory results of people under home quarantine. We conducted descriptive analysis to
estimate the basic characteristics and to calculate the incidence in our study population. Results: A total of 2004 people under home quarantine participated in this study, of which 1637 participants finished the questionnaire with a response rate of 81.7%. Mean age of the participants was 33.7 years, ranging from 0.3 to 80.2 years. Of people who provided clear travel history, 129 people have traveled to Wuhan city and 1,046 people have traveled to other cities in Hubei province within 14 days before the home quarantine. Few (less than 1%) participants reported contact history with confirmed or suspected cases during their trip and most of these arrived at Shenzhen between Jan 24, 2020 to Jan 27, 2020. The incidence of COVID-19 in the sample was 1.5‰ (95% CI: 0.31‰–4.37‰). Conclusion: Home quarantine has been effective in preventing the early transmission of COVID-19, but that more needs to be done to improve early detection of COVID-19 infection.

https://doi.org/10.1016/j.tmaid.2020.101660

Alimuddin Zumla, David S Hui, Esam I Azhar, Ziad A Memish, Markus Maeurer

Reducing mortality from 2019-nCoV: host-directed therapies should be an option

The Lancet, Volume 395, Issue 10224, 2020, Pages e35-e36

https://doi.org/10.1016/S0140-6736(20)30305-6

Kazuki Shimizu

2019-nCoV, fake news, and racism


https://doi.org/10.1016/S0140-6736(20)30357-3

Clark D Russell, Jonathan E Millar, J Kenneth Baillie

Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury

The Lancet, Volume 395, Issue 10223, 2020, Pages 473-475

https://doi.org/10.1016/S0140-6736(20)30317-2

Yanping Bao, Yankun Sun, Shiqiu Meng, Jie Shi, Lin Lu

2019-nCoV epidemic: address mental health care to empower society

The Lancet, Volume 395, Issue 10224, 2020, Pages e37-e38

https://doi.org/10.1016/S0140-6736(20)30309-3
Anne K. Cordes, Albert Heim

**Rapid random access detection of the novel SARS-coronavirus-2 (SARS-CoV-2, previously 2019-nCoV) using an open access protocol for the Panther Fusion**

Journal of Clinical Virology, Volume 125, 2020

https://doi.org/10.1016/j.jcv.2020.104305

Thomas Hanscheid, Emília Valadas, Martin P. Grobusch

**Coronavirus 2019-nCoV: Is the genie already out of the bottle?**

Travel Medicine and Infectious Disease, 2020

https://doi.org/10.1016/j.tmaid.2020.101577

Jin-Yan Li, Zhi You, Qiong Wang, Zhi-Jian Zhou, Ye Qiu, Rui Luo, Xing-Yi Ge


Microbes and Infection, Volume 22, Issue 2, 2020, Pages 80-85

Abstract:

At the end of December 2019, a novel coronavirus, 2019-nCoV, caused an outbreak of pneumonia spreading from Wuhan, Hubei province, to the whole country of China, which has posed great threats to public health and attracted enormous attention around the world. To date, there are no clinically approved vaccines or antiviral drugs available for these human coronavirus infections. Intensive research on the novel emerging human infectious coronaviruses is urgently needed to elucidate their route of transmission and pathogenic mechanisms, and to identify potential drug targets, which would promote the development of effective preventive and therapeutic countermeasures. Herein, we describe the epidemic and etiological characteristics of 2019-nCoV, discuss its essential biological features, including tropism and receptor usage, summarize approaches for disease prevention and treatment, and speculate on the transmission route of 2019-nCoV.

https://doi.org/10.1016/j.micinf.2020.02.002

Jucier Gonçalves Júnior, Jair Paulino de Sales, Marcial Moreno Moreira, Woneska Rodrigues Pinheiro, Carlos Kennedy Tavares Lima, Modesto Leite Rolim Neto


Psychiatry Research, 2020

Abstract:
Background

68.5 million people around the world have been forced to leave their houses. Refugees have mainly to face their adaption in a host country, which involves bureaucracy, different culture, poverty, and racism. The already fragile situation of refugees becomes worrying and challenged in the face of the new coronavirus (COVID-19) epidemic. Therefore, we aimed to describe the factors that can worsen the mental health of refugees.

Method

The studies were identified in well-known international journals found in three electronic databases: PubMed, Scopus, and Embase. The data were cross-checked with information from the main international newspapers.

Results

According to the literature, the difficulties faced by refugees with the COVID-19 pandemic are potentiated by the pandemic state. There are several risk factors common to coronavirus and psychiatric illnesses as overcrowding, disruption of sewage disposal, poor standards of hygiene, poor nutrition, negligible sanitation, lack of access to shelter, health care, public services, and safety. These associated with fear and uncertainty create a closed ground for psychological sickness and COVID-19 infection.

Conclusions

There should be not only a social mobilization to contain the virus, but also a collective effort on behalf of the most vulnerable populations.

https://doi.org/10.1016/j.psychres.2020.113000

Juan M. Saavedra

Angiotensin Receptor Blockers and 2019-nCoV
Abstract:

Angiotensin Receptor Blockers (ARBs) exhibit major pleiotropic protecting effects beyond their antihypertensive properties, including reduction of inflammation. ARBs directly protect the lung from the severe acute respiratory syndrome as a result of viral infections, including those from coronavirus. The protective effect of ACE2 is enhanced by ARB administration. For these reasons ARB therapy must be continued for patients affected by hypertension, diabetes and renal disease, comorbidities of the current 2019-nCoV pandemic. Controlled clinical studies should be conducted to determine whether ARBs may be included as additional therapy for 2019-nCoV patients.

https://doi.org/10.1016/j.phrs.2020.104832

Tianyi Qiu, Tiantian Mao, Yuan Wang, Mengdi Zhou, Jingxuan Qiu, Jianwei Wang, Jianqing Xu, Zhiwei Cao

Identification of potential cross-protective epitope between a new type of coronavirus (2019-nCoV) and severe acute respiratory syndrome virus

Journal of Genetics and Genomics, Volume 47, Issue 2, 2020, Pages 115-117

https://doi.org/10.1016/j.jgg.2020.01.003

Jieliang Chen

Pathogenicity and transmissibility of 2019-nCoV—A quick overview and comparison with other emerging viruses

Microbes and Infection, Volume 22, Issue 2, 2020, Pages 69-71

Abstract:

A zoonotic coronavirus, tentatively labeled as 2019-nCoV by the World Health Organization (WHO), has been identified as the causative agent of the viral pneumonia outbreak in Wuhan, China, at the end of 2019. Although 2019-nCoV can cause a severe respiratory illness like SARS and MERS, evidence from clinics suggested that 2019-nCoV is generally less pathogenic than SARS-CoV, and much less than MERS-CoV. The transmissibility of 2019-nCoV is still debated and needs to be further assessed. To avoid the 2019-nCoV outbreak turning into an epidemic or even a pandemic and to minimize the mortality rate, China activated emergency response procedures, but much remains to be learned about the features of the virus to refine the risk assessment and response. Here, the current knowledge in 2019-nCoV pathogenicity and transmissibility is summarized in comparison with several commonly known emerging viruses, and information urgently needed for a better control of the disease is highlighted.

https://doi.org/10.1016/j.micinf.2020.01.004

Carlos Kennedy Tavares Lima, Poliana Moreira de Medeiros Carvalho, Igor de Araújo Ararunga Silva Lima, José Víctor Alexandre de Oliveira Nunes, Jeferson Steves Saraiva, Ricardo Inácio de Souza, Cláudio Gleidiston Lima da Silva, Modesto Leite Rolim Neto
The emotional impact of Coronavirus 2019-nCoV (new Coronavirus disease)
Psychiatry Research, Volume 287, 2020

Abstract:

Background: A novel form of Coronavirus (2019-nCoV) in Wuhan has created a confused and rapidly evolving situation. In this situational framework, patients and front-line healthcare workers are vulnerable.

Method: Studies were identified using large-circulation international journals found in two electronic databases: Scopus and Embase.

Results: Populations of patients that may require tailored interventions are older adults and international migrant workers. Older adults with psychiatric conditions may be experiencing further distress. The COVID-19 epidemic has underscored potential gaps in mental health services during emergencies.

Conclusions: Most health professionals working in isolation units and hospitals do not receive any training for providing mental health care. Fear seems more certainly a consequence of mass quarantine.

https://doi.org/10.1016/j.psychres.2020.112915

Samriti Sharma, Manik Sharma, Gurvinder Singh

A chaotic and stressed environment for 2019-nCoV suspected, infected and other people in India: Fear of mass destruction and causality
Asian Journal of Psychiatry, Volume 51, 2020

https://doi.org/10.1016/j.ajp.2020.102049

Cristian Biscayart, Patricia Angeleri, Susana Lloveras, Tânia do Socorro Souza Chaves, Patricia Schlagenhauf, Alfonso J. Rodríguez-Morales

Travel Medicine and Infectious Disease, Volume 33, 2020

https://doi.org/10.1016/j.tmaid.2020.101567

Roger Yat-Nork Chung, Minnie Ming Li
Anti-Chinese sentiment during the 2019-nCoV outbreak
The Lancet, Volume 395, Issue 10225, 2020, Pages 686-687
https://doi.org/10.1016/S0140-6736(20)30358-5

Mary E. Wilson

What goes on board aircraft? Passengers include Aedes, Anopheles, 2019-nCoV, dengue, Salmonella, Zika, et al
Travel Medicine and Infectious Disease, Volume 33, 2020
https://doi.org/10.1016/j.tmaid.2020.101572

Shi Zhao, Zian Zhuang, Jinjun Ran, Jiaer Lin, Guangpu Yang, Lin Yang, Daihai He
Travel Medicine and Infectious Disease, Volume 33, 2020
https://doi.org/10.1016/j.tmaid.2020.101568

Robin Thompson

Pandemic potential of 2019-nCoV
The Lancet Infectious Diseases, Volume 20, Issue 3, 2020, Page 280
https://doi.org/10.1016/S1473-3099(20)30068-2.