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Présentation :


Ce numéro spécial du Dossier Thématique est structuré selon les quatre bases de données. Le présent document recense 212 articles, en **libre accès**, de revues scientifiques indexées par la base de données bibliographiques **Web Of Science**.

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MEDICINE GENERAL
INTERNAL:
Clinical Course and Outcomes of Patients with Severe Acute Respiratory Syndrome Coronavirus 2 Infection: a Preliminary Report of the First 28 Patients from the Korean Cohort Study on COVID-19

Kim, ES (Kim, Eu Suk); Chin, BS (Chin, Bum Sik); Kang, CK (Kang, Chang Kyung); Kim, NJ (Kim, Nam Joong); Kang, YM (Kang, Yu Min); Choi, JP (Choi, Jae-Phil); Oh, DH (Oh, Dong Hyun); Kim, JH (Kim, Jeong-Han); Koh, B (Koh, Boram); Kim, SE (Kim, Seong Eun); Yun, NR (Yun, Na Ra); Lee, JH (Lee, Jae-Hoon); Kim, JY (Kim, Jin Yong); Kim, Y (Kim, Yeonjae); Bang, JH (Bang, Ji Hwan); Song, KH (Song, Kyoung-Ho); Kim, HB (Kim, Hong Bin); Chung, KH (Chung, Ki-Hyun); Oh, MD (Oh, Myoung-don)

Group Korea Natl Comm Clinical Managemen

JOURNAL OF KOREAN MEDICAL SCIENCE Volume: 35 Issue: 13 Article Number: e142 DOI: 10.3346/jkms.2020.35.e142 Published: APR 6 2020

Abstract:

Background: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)-infected pneumonia emerged in Wuhan, China in December 2019. In this retrospective multicenter study, we investigated the clinical course and outcomes of novel coronavirus disease 2019 (COVID-19) from early cases in Republic of Korea.

Methods: All of the cases confirmed by real time polymerase chain reaction were enrolled from the 1st to the 28th patient nationwide. Clinical data were collected and analyzed for changes in clinical severity including laboratory, radiological, and virologic dynamics during the progression of illness.

Results: The median age was 40 years (range, 20-73 years) and 15 (53.6%) patients were male. The most common symptoms were cough (28.6% /0) and sore throat (28.6%), followed by fever (25.0%). Diarrhea was not common (10.7 0 /0). Two patients had no symptoms. Initial chest X-ray (CXR) showed infiltration in 46.4% of the patients, but computed tomography scan confirmed pneumonia in 88.9% (16/18) of the patients. Six patients (21.4%) required supplemental oxygen therapy, but no one needed mechanical ventilation. Lymphopenia was more common in severe cases. Higher level of C-reactive protein and worsening of chest radiographic score was observed during the 5-7-day period after symptom onset. Viral shedding was high from day 1 of illness, especially from the tipper respiratory tract (URT).

Conclusion: The prodromal symptoms of COVID-19 were mild and most patients did not have limitations of daily activity. Viral shedding from URT was high from the prodromal phase. Radiological pneumonia was common from the early days of illness, but it was frequently not evident in simple CXR. These findings could be plausible explanations for the easy and rapid spread of SARS-CoV-2 in the community.
Article 2 of 39

Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff

Sahu, P (Sahu, Pradeep)

CUREUS Volume: 12 Issue: 4 Article Number: e7541 DOI: 10.7759/cureus.7541 Published: APR 4 2020

Abstract:

The novel coronavirus disease 2019 (COVID-19), originated in Wuhan city of China, has spread rapidly around the world, sending billions of people into lockdown. The World Health Organization (WHO) declared the coronavirus epidemic a pandemic. In light of rising concern about the current COVID-19 pandemic, a growing number of universities across the world have either postponed or canceled all campus events such as workshops, conferences, sports, and other activities. Universities are taking intensive measures to prevent and protect all students and staff members from the highly infectious disease. Faculty members are already in the process of transitioning to online teaching platforms. In this review, the author will highlight the potential impact of the terrible COVID-19 outbreak on the education and mental health of students and academic staff.

Article 3 of 39

First Case of an Infant with COVID-19 in the Middle East

Mansour, A (Mansour, Amani); Atoui, R (Atoui, Rola); Kanso, K (Kanso, Kamal); Mohsen, R (Mohsen, Rami); Fares, Y (Fares, Youssef); Fares, J (Fares, Jawad)

CUREUS Volume: 12 Issue: 4 Article Number: e7520 DOI: 10.7759/cureus.7520 Published: APR 3 2020

Abstract:

The novel coronavirus (COVID-19) has been declared a worldwide pandemic. It was initially thought to spare children and adolescents as significantly smaller number of cases have been reported in the pediatric population in comparison to adults. Here, we report the case of a 16-month-old female infant from Lebanon who presented with fever and severe diarrhea and tested positive for COVID-19. Her symptoms started six days prior to presentation with no cough, rhinorrhea, or other respiratory manifestations reported. Chest radiography showed lobar consolidation and bronchial infiltrates. Blood culture was positive for Streptococcus pneumoniae. Stool and urine cultures were negative. She was treated with ceftriaxone and metronidazole. Her RT-PCR test was negative after five days of treatment, suggesting that children can clear the virus faster than adults. The patient likely contracted the virus from her parents, who because of the fear of social stigma hide recent history of respiratory illness. These findings serve as a practical reference for the clinical diagnosis and medical treatment of children with COVID-19.

Accession Number: WOS:000523462600001
Novel Coronavirus (2019-nCoV) in Disguise

Zhang, Q (Zhang, Qian); Douglas, A (Douglas, Annyella); Abideen, ZU (Abideen, Zain U.); Khanal, S (Khanal, Shristi); Tzarnas, S (Tzarnas, Stephanie)

CUREUS Volume: 12 Issue: 4 Article Number: e7521 DOI: 10.7759/cureus.7521 Published: APR 3 2020

Abstract:

Novel coronavirus (2019-nCoV) pandemic is currently one of the most influential topics as it not only impacts the field of medicine but most importantly, it affects the lives of many individuals throughout the world. We report an interesting 2019-nCoV case in a tertiary community hospital with the initial concern of acute pyelonephritis without respiratory symptoms that ultimately led to the quarantine of a number of healthcare providers. This case emphasizes the importance of radiological evidence in diagnosing 2019-nCoV in the setting of an initial atypical presentation. It also serves as an example of how healthcare providers may need to increase their suspicion for COVID-19 to ensure self-protection and prompt diagnosis in the era of an ongoing pandemic.

Accession Number: WOS:000523462600002

COVID-19 Awareness Among Healthcare Students and Professionals in Mumbai Metropolitan Region: A Questionnaire-Based Survey

Modi, PD (Modi, Pranav D.); Nair, G (Nair, Girija); Uppe, A (Uppe, Abhay); Modi, J (Modi, Janhavi); Tuppekar, B (Tuppekar, Balaji); Gharpure, AS (Gharpure, Amit S.); Langade, D (Langade, Deepak)

CUREUS Volume: 12 Issue: 4 Article Number: e7514 DOI: 10.7759/cureus.7514 Published: APR 2 2020

Abstract:

Background and objectives

The rapid and extensive spread of the COVID-19 pandemic has become a major cause of concern for the healthcare profession. The aim of this study is to assess the awareness of COVID-19 disease and related infection control practices among healthcare professionals and students in the Mumbai Metropolitan Region.

Materials and methods

A total of 1562 responders from the Mumbai Metropolitan Region completed a questionnaire-based survey on the awareness, knowledge, and infection control practices related to COVID-19 infection in the healthcare setting. The questionnaire was adapted from the current interim guidance and information for healthcare workers published by the US Centers for Disease Control and Prevention (CDC). Convenient sampling method was used for data collection and the distribution of responses was presented as frequencies and percentages. Descriptive statistics were performed for all groups.
Results

The overall awareness for all subgroups was adequate with 71.2% reporting correct answers. The highest percentage of correct responses were from undergraduate medical students and the lowest was from non-clinical/administrative staff. Less than half of the total respondents could correctly define "close contact." More than three-fourths of the responders were aware of the various infection control measures like rapid triage, respiratory hygiene, and cough etiquette and having a separate, well ventilated waiting area for suspected COVID-19 patients. However, only 45.4% of the responders were aware of the correct sequence for the application of a mask/respirator, and only 52.5% of the responders were aware of the preferred hand hygiene method for visibly soiled hands.

Conclusion

There is a need for regular educational interventions and training programs on infection control practices for COVID-19 across all healthcare professions. Occupational health and safety are of paramount importance to minimize the risk of transmission to healthcare students and professionals and provide optimal care for patients.

Accession Number: WOS:000523461700009

Article 6 of 39

Coronavirus Disease 2019 (COVID-19) Complicated by Acute Respiratory Distress Syndrome: An Internist's Perspective

Ahmed, T (Ahmed, Taha); Shah, RJ (Shah, Ronak J.); Rahim, SEG (Rahim, Shab E. Gul); Flores, M (Flores, Monica); O'Linn, A (O'Linn, Amy)

CUREUS Volume: 12 Issue: 3 Article Number: e7482 DOI: 10.7759/cureus.7482 Published: MAR 31 2020

Abstract:

A pandemic outbreak of a novel coronavirus disease (COVID-19) that began in Wuhan, China, in December 2019 has spread rapidly to multiple countries. In the United States, the first confirmed case was reported on January 20, 2020, and since then, the number of cases is rising exponentially on a daily basis. We report a case of COVID-19 infection that presented with symptoms suggestive of pneumonia. Due to the major backlog with an immense number of pending tests, it took 48 hours for the result to come back positive, while the patient went into acute respiratory distress syndrome. We provide an internist's perspective of the difficulties encountered in terms of the available management options, as the patient progressively deteriorated on the regular medical floor prompting transfer to the intensive care unit.

Accession Number: WOS:000522638100002
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A Coronavirus Disease 2019 (COVID-19) Patient with Multifocal Pneumonia Treated with Hydroxychloroquine

Mukherjee, A (Mukherjee, Aveek); Ahmad, M (Ahmad, Mudassar); Frenia, D (Frenia, Douglas)

CUREUS Volume: 12 Issue: 3 Article Number: e7473 DOI: 10.7759/cureus.7473 Published: MAR 30 2020

Abstract:

After an outbreak in December 2019 in Wuhan, Hubei Province of China, coronavirus disease 2019 (COVID-19) has rapidly become a pandemic. The 2019 novel coronavirus (2019 nCov), now called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), causes a wide spectrum of illness and patients with underlying comorbidities have a high mortality. Here we present a 49-year-old male patient with comorbid conditions who presented with fever, cough, myalgia and shortness of breath for five days with likely exposure to a COVID-19 contact. A computed tomography scan of the thorax revealed multifocal bilateral ground-glass lung opacities with areas of subpleural sparing. He tested positive for SARS-CoV-2 by nucleic acid amplification. Hydroxychloroquine therapy was started, and the patient responded favorably with improvement of symptoms. Early diagnosis and self-isolation or quarantine remain key to stemming the tide of the contagion as there is a real risk of the healthcare system being overwhelmed.

Accession Number: WOS:000522249000009

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Health security capacities in the context of COVID-19 outbreak: an analysis of International Health Regulations annual report data from 182 countries

Kandel, N (Kandel, Nirmal); Chungong, S (Chungong, Stella); Omaar, A (Omaar, Abbas); Xing, J (Xing, Jun)

LANCET Volume: 395 Issue: 10229 Pages: 1047-1053 DOI: 10.1016/S0140-6736(20)30553-5 Published: MAR 28 2020

Abstract:

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. Copyright (C) 2020. World Health Organization. Published by Elsevier Ltd. All rights reserved.

Accession Number: WOS:000522650100032

Article 9 of 39

Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study

Zhou, F (Zhou, Fei); Yu, T (Yu, Ting); Du, RH (Du, Ronghui); Fan, GH (Fan, Guohui); Liu, Y (Liu, Ying); Liu, ZB (Liu, Zhibo); Xiang, J (Xiang, Jie); Wang, YM (Wang, Yeming); Song, B (Song, Bin); Gu, XY (Gu, Xiaoying); Guan, LL (Guan, Lulu); Wei, Y (Wei, Yuan); Li, H (Li, Hui); Wu, XD (Wu, Xudong); Xu, JY (Xu, Jiuyang); Tu, SJ (Tu, Shengjin); Zhang, Y (Zhang, Yi); Chen, H (Chen, Hua); Cao, B (Cao, Bin)

LANCET Volume: 395 Issue: 10229 Pages: 1054-1062 DOI: 10.1016/S0140-6736(20)30566-3 Published: MAR 28 2020

Abstract:

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). Epidemiological 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 articles 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 mu g/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 mu g/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. Copyright (C) 2020 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000522650100033

**Article 10 of 39**

**Common CT Findings of Novel Coronavirus Disease 2019 (COVID-19): A Case Series**

Torkian, P (Torkian, Pooya); Ramezani, N (Ramezani, Naghi); Kiani, P (Kiani, Pejman); Bax, MR (Bax, Michael R.); Akhlaghpoor, S (Akhlaghpoor, Shahram)

CUREUS Volume: 12 Issue: 3 Article Number: e7434 DOI: 10.7759/cureus.7434 Published: MAR 27 2020

**Abstract:**

Given the highly infectious nature of the coronavirus disease 2019 (COVID-19) virus and the lack of proven specific therapeutic drugs and licensed vaccines effective against it, early diagnosis of the disease is of paramount importance. The common chest CT imaging of confirmed COVID-19 cases is discussed here, which shows ground-glass opacity, crazy paving, and consolidation.

Accession Number: WOS:000522247600005

**Article 11 of 39**

**Application of personal-oriented digital technology in preventing transmission of COVID-19, China**

Pan, XB (Pan, Xiao-Ben)

IRISH JOURNAL OF MEDICAL SCIENCE DOI: 10.1007/s11845-020-02215-5 Early Access Date: MAR 2020

**Abstract:**
We reported several personal-oriented and mobile phone-based information technologies which were recently developed and widely used during the outbreak of COVID-19 in China. These technologies help reduce the transmission of COVID-19 and maintain normal social order.

Article 12 of 39

COVID-19: decision making and palliative care

Domenico, BG (Domenico, Borasio Gian); Claudia, G (Claudia, Gamondi); Monikac, O (Monikac, Obrist); Ralf, J (Ralf, Jox)

Group COVID-19 Task Force Palliative Ch

SWISS MEDICAL WEEKLY Volume: 150 Article Number: w20233 DOI: 10.4414/smw.2020.20233 Published: MAR 24 2020

Accession Number: WOS:000521884600001

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COVID-19 pandemic: palliative care for elderly and frail patients at home and in residential and nursing homes

Roland, K (Roland, Kunz); Markus, M (Markus, Minder)

SWISS MEDICAL WEEKLY Volume: 150 Article Number: w20235 DOI: 10.4414/smw.2020.20235 Published: MAR 24 2020

Accession Number: WOS:000521948800004

Article 14 of 39

COVID-19 pandemic: triage for intensive-care treatment under resource scarcity

Scheidegger, D (Scheidegger, Daniel); Fumeaux, T (Fumeaux, Thierry); Hurst, S (Hurst, Samia)

SWISS MEDICAL WEEKLY Volume: 150 Article Number: w20229 DOI: 10.4414/smw.2020.20229 Published: MAR 24 2020

Accession Number: WOS:000521948800002

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Recommendations for the admission of patients with COVID-19 to intensive care and intermediate care units (ICUs and IMCUs)

Group Swiss Soc Intens Care Med
Article 16 of 39

**COVID-19 may transmit through aerosol**

Wang, J (Wang, Juan); Du, GQ (Du, Guoqiang)

IRISH JOURNAL OF MEDICAL SCIENCE  DOI: 10.1007/s11845-020-02218-2  Early Access Date: MAR 2020

Accession Number: WOS:000521688000001

Article 17 of 39

**Drive-Through Screening Center for COVID-19: a Safe and Efficient Screening System against Massive Community Outbreak**

Kwon, KT (Kwon, Ki Tae); Ko, JH (Ko, Jae-Hoon); Shin, H (Shin, Heejun); Sung, M (Sung, Minki); Kim, JY (Kim, Jin Yong)


**Abstract:**

As the coronavirus disease 2019 (COVID-19) outbreak is ongoing, the number of individuals to be tested for COVID-19 is rapidly increasing. For safe and efficient screening for COVID-19, drive-through (DT) screening centers have been designed and implemented in Korea. Herein, we present the overall concept, advantages, and limitations of the COVID-19 DT screening centers. The steps of the DT centers include registration, examination, specimen collection, and instructions. The entire service takes about 10 minutes for one testee without leaving his or her cars. Increased testing capacity over 100 tests per day and prevention of cross-infection between testees in the waiting space are the major advantages, while protection of staff from the outdoor atmosphere is challenging. It could be implemented in other countries to cope with the global COVID-19 outbreak and transformed according to their own situations.

Accession Number: WOS:000521728300006

Article 18 of 39

**A Bibliometric Analysis of COVID-19 Research Activity: A Call for Increased Output**

Chahrour, M (Chahrour, Mohamad); Assi, S (Assi, Sahar); Bejjani, M (Bejjani, Michael); Nasrallah, AA (Nasrallah, Ali A.); Salhab, H (Salhab, Hamza); Fares, MY (Fares, Mohamad Y.); Khachfe, HH (Khachfe, Hussein H.)
Abstract:

Background: The novel coronavirus disease 2019 (COVID-19) has impacted many countries across all inhabited continents, and is now considered a global pandemic, due to its high rate of infectivity. Research related to this disease is pivotal for assessing pathogenic characteristics and formulating therapeutic strategies. The aim of this paper is to explore the activity and trends of COVID-19 research since its outbreak in December 2019.

Methods: We explored the PubMed database and the World Health Organization (WHO) database for publications pertaining to COVID-19 since December 2019 up until March 18, 2020. Only relevant observational and interventional studies were included in our study. Data on COVID-19 incidence were extracted from the WHO situation reports. Research output was assessed with respect to gross domestic product (GDP) and population of each country.

Results: Only 564 publications met our inclusion criteria. These articles came from 39 different countries, constituting 24% of all affected countries. China produced the greatest number of publications with 377 publications (67%). With respect to continental research activity, Asian countries had the highest research activity with 434 original publications (77%). In terms of publications per million persons (PPMPs), Singapore had the highest number of publications with 1.069 PPMPs. In terms of publications per billion-dollar GDP, Mauritius ranked first with 0.075.

Conclusion: COVID-19 is a major disease that has impacted international public health on a global level. Observational studies and therapeutic trials pertaining to COVID-19 are essential for assessing pathogenic characteristics and developing novel treatment options.

Accession Number: WOS:000521216200010

Neurological Complications of Coronavirus Disease (COVID-19): Encephalopathy

Filatov, A (Filatov, Asia); Sharma, P (Sharma, Pamraj); Hindi, F (Hindi, Fawzi); Espinosa, PS (Espinosa, Patricio S.)

Abstract:

Coronavirus disease 2019 (COVID-19) is a pandemic. Neurological complications of COVID-19 have not been reported. Encephalopathy has not been described as a presenting symptom or complication of COVID-19. We report a case of a 74-year-old patient who traveled from Europe to the United States and presented with encephalopathy and COVID-19.

Accession Number: WOS:000521216200005
**Article 20 of 39**

**COVID-19 epidemic in Switzerland: on the importance of testing, contact tracing and isolation**

Marcel, S (Marcel, Salathe); Christian, LA (Christian, Althaus L.); Richard, N (Richard, Neher); Silvia, S (Silvia, Stringhini); Emma, H (Emma, Hodcroft); Jacques, F (Jacques, Fellay); Marcel, Z (Marcel, Zwahlen); Gabriela, S (Gabriela, Senti); Manuel, B (Manuel, Battegay); Annelies, WS (Annelies, Wilder-Smith); Isabella, E (Isabella, Eckerle); Matthias, E (Matthias, Egger); Nicola, L (Nicola, Low)

SWISS MEDICAL WEEKLY  Volume: 150  Article Number: w202205  DOI: 10.4414/smw.2020.20225  Published: MAR 19 2020

**Abstract:**

Switzerland is among the countries with the highest number of coronavirus disease-2019 (COVID-19) cases per capita in the world. There are likely many people with undetected SARS-CoV-2 infection because testing efforts are currently not detecting all infected people, including some with clinical disease compatible with COVID-19. Testing on its own will not stop the spread of SARS-CoV-2. Testing is part of a strategy. The World Health Organization recommends a combination of measures: rapid diagnosis and immediate isolation of cases, rigorous tracking and precautionary self-isolation of close contacts. In this article, we explain why the testing strategy in Switzerland should be strengthened urgently, as a core component of a combination approach to control COVID-19.

Accession Number: WOS:000521155600001

**Article 21 of 39**

**An Epidemiological Study on COVID-19: A Rapidly Spreading Disease**

Khachfe, HH (Khachfe, Hussein H.); Chahrour, M (Chahrour, Mohamad); Sammouri, J (Sammouri, Julie); Salhab, HA (Salhab, Hamza A.); Makki, BE (Makki, Bassel Eldeen); Fares, MY (Fares, Mohamad Y.)

CUREUS  Volume: 12  Issue: 3  Article Number: e7313  DOI: 10.7759/cureus.7313  Published: MAR 18 2020

**Abstract:**

Background

The outbreak of the novel coronavirus disease in 2019 (COVID-19) caused a major public health crisis worldwide and challenged healthcare systems across the six continents. The high infectivity of the disease led many governments to adopt strict regulations and measures with the aim of containing its spread. The purpose of this study is to assess the incidence, severity, and territorial expansion of COVID-19.

Methods

Data from the World Health Organization was screened, and COVID-19 situation reports were extracted from January 21 up till March 14 (inclusive). Our data included the total number of cases,
The total number of COVID-19 cases reached 156,622, with 5,845 subsequent deaths. China, Italy, and Iran have the highest number of cases worldwide. During the first 22 days, the incidence rate of COVID-19 increased significantly to reach 1.81 cases per million persons ($p<0.001$). That was followed by a significant decrease over the next 11 days ($p<0.001$) to reach 0.071 cases per million persons. A steady rise then followed, which saw a significant increase in incidence rate to 1.429 cases per million persons ($p<0.001$). Percentages of death and cured cases varied across the different countries; nevertheless, death percentages have generally been decreasing since the start of the crisis.

Conclusion

Adopting precautionary regulations such as social isolation, increasing sanitation, and employing strict quarantine measures have proved to be beneficial in containing the virus. Further research needs to be conducted to help discover therapeutic modalities and improve outcomes.

Accession Number: WOS:000520024400012

**Article 22 of 39**


JOURNAL OF KOREAN MEDICAL SCIENCE Volume: 35 Issue: 10 Article Number: e112 DOI: 10.3346/jkms.2020.35.e112 Published: MAR 16 2020

**Abstract:**

Since the first case of coronavirus disease 19 (COVID-19) was reported in Wuhan, China, as of March 2, 2020, the total number of confirmed cases of COVID-19 was 89,069 cases in 67 countries and regions. As of 0 AM, March 2, 2020, the Republic of Korea had the second-largest number of confirmed cases ($n = 4,212$) after China ($n = 80,026$). This report summarizes the epidemiologic features and the snapshots of the outbreak in the Republic of Korea from January 19 and March 2, 2020.

Accession Number: WOS:000520016200008
Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study

Gilbert, M (Gilbert, Marius); Pullano, G (Pullano, Giulia); Pinotti, F (Pinotti, Francesco); Valdano, E (Valdano, Eugenio); Poletto, C (Poletto, Chiara); Boelle, PY (Boelle, Pierre-Yves); D'Ortenzio, E (D'Ortenzio, Eric); Yazdanpanah, Y (Yazdanpanah, Yazdan); Eholie, SP (Eholie, Serge Paul); Altmann, M (Altmann, Mathias); Gutierrez, B (Gutierrez, Bernardo); Kraemer, MUG (Kraemer, Moritz U. G.); Colizza, V (Colizza, Vittoria)

LANCET Volume: 395 Issue: 10227 Pages: 871-877 DOI: 10.1016/S0140-6736(20)30411-6 Published: MAR 14 2020

Abstract:

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. Copyright (C) 2020 Elsevier Ltd. All rights reserved.

Article 24 of 39

What further should be done to control COVID-19 outbreaks in addition to cases isolation and contact tracing measures?

He, ZJ (He, Zhenjian)
Coronavirus Goes Viral: Quantifying the COVID-19 Misinformation Epidemic on Twitter

Kouzy, R (Kouzy, Ramez); Jaoude, JA (Jaoude, Joseph Abi); Kraitem, A (Kraitem, Afif); El Alam, MB (El Alam, Molly B.); Karam, B (Karam, Basil); Adib, E (Adib, Elio); Zarka, J (Zarka, Jabra); Traboulsi, C (Traboulsi, Cindy); Akl, EW (Akl, Elie W.); Baddour, K (Baddour, Khalil)

Abstract:

Background

Since the beginning of the coronavirus disease 2019 (COVID-19) epidemic, misinformation has been spreading uninhibited over traditional and social media at a rapid pace. We sought to analyze the magnitude of misinformation that is being spread on Twitter (Twitter, Inc., San Francisco, CA) regarding the coronavirus epidemic.

Materials and methods

We conducted a search on Twitter using 14 different trending hashtags and keywords related to the COVID-19 epidemic. We then summarized and assessed individual tweets for misinformation in comparison to verified and peer-reviewed resources. Descriptive statistics were used to compare terms and hashtags, and to identify individual tweets and account characteristics.

Results

The study included 673 tweets. Most tweets were posted by informal individuals/groups (66%), and 129 (19.2%) belonged to verified Twitter accounts. The majority of included tweets contained serious content (91.2%); 548 tweets (81.4%) included genuine information pertaining to the COVID-19 epidemic. Around 70% of the tweets tackled medical/public health information, while the others were pertaining to sociopolitical and financial factors. In total, 153 tweets (24.8%) included misinformation, and 107 (17.4%) included unverifiable information regarding the COVID-19 epidemic. The rate of misinformation was higher among informal individual/group accounts (33.8%, p: <0.001). Tweets from unverified Twitter accounts contained more misinformation (31.0% vs 12.6% for verified accounts, p: <0.001). Tweets from healthcare/public health accounts had the lowest rate of unverifiable information (12.3%, p: 0.04). The number of likes and retweets per tweet was not associated with a difference in either false or unverifiable content. The keyword "COVID-19" had the lowest rate of misinformation and unverifiable information, while the keywords "#2019 ncov" and "Corona" were associated with the highest amount of misinformation and unverifiable content respectively.

Conclusions
Medical misinformation and unverifiable content pertaining to the global COVID-19 epidemic are being propagated at an alarming rate on social media. We provide an early quantification of the magnitude of misinformation spread and highlight the importance of early interventions in order to curb this phenomenon that endangers public safety at a time when awareness and appropriate preventive actions are paramount.

Accession Number: WOS:000519625400002

**Article 26 of 39**


Jiang, F (Jiang, Fang); Deng, LH (Deng, Liehua); Zhang, LQ (Zhang, Liangqing); Cai, Y (Cai, Yin); Cheung, CW (Cheung, Chi Wai); Xia, ZY (Xia, Zhengyuan)

JOURNAL OF GENERAL INTERNAL MEDICINE  DOI: 10.1007/s11606-020-05762-w  Early Access Date: MAR 2020

**Abstract:**

In late December 2019, a cluster of cases with 2019 Novel Coronavirus pneumonia (SARS-CoV-2) in Wuhan, China, aroused worldwide concern. Previous studies have reported epidemiological and clinical characteristics of coronavirus disease 2019 (COVID-19). The purpose of this brief review is to summarize those published studies as of late February 2020 on the clinical features, symptoms, complications, and treatments of COVID-19 and help provide guidance for frontline medical staff in the clinical management of this outbreak.

Accession Number: WOS:000520659500001

**Article 27 of 39**

**First case of Coronavirus Disease 2019 (COVID-19) pneumonia in Taiwan**

Cheng, SC (Cheng, Shao-Chung); Chang, YC (Chang, Yuan-Chia); Chiang, YLF (Chiang, Yu-Long Fan); Chien, YC (Chien, Yu-Chan); Cheng, MT (Cheng, Mingte); Yang, CH (Yang, Chin-Hua); Huang, CH (Huang, Chia-Husn); Hsu, YN (Hsu, Yuan-Nian)


**Abstract:**

An outbreak of respiratory illness proved to be infected by a 2019 novel coronavirus, officially named Coronavirus Disease 2019 (COVID-19), was notified first in Wuhan, China, and has spread rapidly in China and to other parts of the world. Herein, we reported the first confirmed case of novel coronavirus pneumonia (NCP) imported from China in Taiwan. This case report revealed a natural course of NCP with self-recovery, which may be a good example in comparison with medical treatments. Copyright (C) 2020, Formosan Medical Association. Published by Elsevier Taiwan LLC.

Accession Number: WOS:000519688100012
Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study

Wu, JT (Wu, Joseph T.); Leung, K (Leung, Kathy); Leung, GM (Leung, Gabriel M.)

LANCET  Volume: 395  Issue: 10225  Pages: 689-697  DOI: 10.1016/S0140-6736(20)30260-9
Published: FEB 29 2020

Abstract:

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. Copyright (C) 2020 Elsevier Ltd. All rights reserved.
Q&A: The novel coronavirus outbreak causing COVID-19

Fisher, D (Fisher, Dale); Heymann, D (Heymann, David)

BMC MEDICINE Volume: 18 Issue: 1 Article Number: 57 DOI: 10.1186/s12916-020-01533-w Published: FEB 28 2020


Lim, J (Lim, Jaegyun); Jeon, S (Jeon, Seunghyun); Shin, HY (Shin, Hyun-Young); Kim, MJ (Kim, Moon Jung); Seong, YM (Seong, Yu Min); Lee, WJ (Lee, Wang Jun); Choe, KW (Choe, Kang-Won); Kang, YM (Kang, Yu Min); Lee, B (Lee, Baekseung); Park, SJ (Park, Sang-Joon)


Abstract:

Since mid-December of 2019, coronavirus disease 2019 (COVID-19) has been spreading from Wuhan, China. The confirmed COVID-19 patients in South Korea are those who came from or visited China. As secondary transmissions have occurred and the speed of transmission is accelerating, there are rising concerns about community infections. The 54-year old male is the third patient diagnosed with COVID-19 in Korea. He is a worker for a clothing business and had mild respiratory symptoms and intermittent fever in the beginning of hospitalization, and pneumonia symptoms on chest computerized tomography scan on day 6 of admission. This patient caused one case of secondary transmission and three cases of tertiary transmission. Hereby, we report the clinical findings of the index patient who was the first to cause tertiary transmission outside China. Interestingly, after lopinavir/ritonavir (Kaletra, AbbVie) was administered, beta-coronavirus viral loads significantly decreased and no or little coronavirus titers were observed.

A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus (2019-nCoV) infected pneumonia (standard version)

Jin, YH (Jin, Ying-Hui); Cai, L (Cai, Lin); Cheng, ZS (Cheng, Zhen-Shun); Cheng, H (Cheng, Hong); Deng, T (Deng, Tong); Fan, YP (Fan, Yi-Pin); Fang, C (Fang, Cheng); Huang, D (Huang, Di); Huang, LQ (Huang, Lu-Qi); Huang, Q (Huang, Qiao); Han, Y (Han, Yong); Hu, B (Hu, Bo);
Hu, F (Hu, Fen); Li, BH (Li, Bing-Hui); Li, YR (Li, Yi-Rong); Liang, K (Liang, Ke); Lin, LK (Lin, Li-Kai); Luo, LS (Luo, Li-Sha); Ma, J (Ma, Jing); Ma, LL (Ma, Lin-Lu); Peng, ZY (Peng, Zhi-Yong); Pan, YB (Pan, Yun-Bao); Pan, ZY (Pan, Zhen-Yu); Ren, XQ (Ren, Xue-Qun); Sun, HM (Sun, Hui-Min); Wang, Y (Wang, Ying); Wang, YY (Wang, Yun-Yun); Weng, H (Weng, Hong); Wei, CJ (Wei, Chao-Jie); Wu, DF (Wu, Dong-Fang); Xia, J (Xia, Jian); Xiong, Y (Xiong, Yong); Xu, HB (Xu, Hai-Bo); Yao, XM (Yao, Xiao-Mei); Yuan, YF (Yuan, Yu-Feng); Ye, TS (Ye, Tai-Sheng); Zhang, XC (Zhang, Xiao-Chun); Zhang, YW (Zhang, Ying-Wen); Zhang, YG (Zhang, Yin-Gao); Zhang, HM (Zhang, Hua-Min); Zhao, Y (Zhao, Yan); Zhao, MJ (Zhao, Ming-Juan); Zi, H (Zi, Hao); Zeng, XT (Zeng, Xian-Tao); Wang, YY (Wang, Yong-Yan); Wang, XH (Wang, Xing-Huan)

MILITARY MEDICAL RESEARCH Volume: 7 Issue: 1 Article Number: 4 DOI: 10.1186/s40779-020-0233-6 Published: FEB 6 2020

Abstract:

In December 2019, a new type viral pneumonia cases occurred in Wuhan, Hubei Province; and then named "2019 novel coronavirus (2019-nCoV)" by the World Health Organization (WHO) on 12 January 2020. For it is a never been experienced respiratory disease before and with infection ability widely and quickly, it attracted the world's attention but without treatment and control manual. For the request from frontline clinicians and public health professionals of 2019-nCoV infected pneumonia management, an evidence-based guideline urgently needs to be developed. Therefore, we drafted this guideline according to the rapid advice guidelines methodology and general rules of WHO guideline development; we also added the first-hand management data of Zhongnan Hospital of Wuhan University. This guideline includes the guideline methodology, epidemiological characteristics, disease screening and population prevention, diagnosis, treatment and control (including traditional Chinese Medicine), nosocomial infection prevention and control, and disease nursing of the 2019-nCoV. Moreover, we also provide a whole process of a successful treatment case of the severe 2019-nCoV infected pneumonia and experience and lessons of hospital rescue for 2019-nCoV infections. This rapid advice guideline is suitable for the first frontline doctors and nurses, managers of hospitals and healthcare sections, community residents, public health persons, relevant researchers, and all person who are interested in the 2019-nCoV.

Accession Number: WOS:000518992100001

Article 32 of 39

Air Medical Evacuation of Nepalese Citizen During Epidemic of COVID-19 from Wuhan to Nepal

Raibhandari, B (Raibhandari, Bibek); Phuyal, N (Phuyal, Naveen); Shrestha, B (Shrestha, Bikal); Thapa, M (Thapa, Moon)

JOURNAL OF NEPAL MEDICAL ASSOCIATION Volume: 58 Issue: 222 Pages: 125-+ DOI: 10.31729/jnma.4857 Published: FEB 2020

Abstract:

In December 2019, the world was disrupted by the news of a new strain of virus known as Novel Corona virus, taking lives of many in China. Wuhan, the capital of Central China's Hubei province is said to be the place where the outbreak started. The city went on lockdown as the disease spread
rapidly. After the lockdown, most countries like India and Bangladesh airlifted their citizens who were studying in Wuhan. Similarly, Nepal also has many youth studying medicine in Wuhan. Pleas for help from the students reached the government. This was the first encounter of such experience for Nepal government. With the help of Ministry of Health, Ministry of foreign affair, Health Emergency Organizing committee, Epidemiology and Disease Control Division, Nepal Army Hospital, Nepal Police Hospital, Waste Management team, Nepal Ambulance service, Tribhuwan international Airport Authorities and Royal Airlines the government of Nepal planned, organized and successfully brought back all the 175 students on 15th February 2019 from Wuhan, China. The present article aims to share the experience, the challenges faced and recommendations for future similar cases.

Accession Number: WOS:000519193500014

Article 33 of 39

Assessing the Impact of Reduced Travel on Exportation Dynamics of Novel Coronavirus Infection (COVID-19)

Anzai, A (Anzai, Asami); Kobayashi, T (Kobayashi, Tetsuro); Linton, NM (Linton, Natalie M.); Kinoshita, R (Kinoshita, Ryo); Hayashi, K (Hayashi, Katsuma); Suzuki, A (Suzuki, Ayako); Yang, YC (Yang, Yichi); Jung, S (Jung, Sung-mok); Miyama, T (Miyama, Takeshi); Akhmetzhanov, AR (Akhmetzhanov, Andrei R.); Nishiura, H (Nishiura, Hiroshi)

JOURNAL OF CLINICAL MEDICINE Volume: 9 Issue: 2 Article Number: 601 DOI: 10.3390/jcm9020601 Published: FEB 2020

Abstract:

The impact of the drastic reduction in travel volume within mainland China in January and February 2020 was quantified with respect to reports of novel coronavirus (COVID-19) infections outside China. Data on confirmed cases diagnosed outside China were analyzed using statistical models to estimate the impact of travel reduction on three epidemiological outcome measures: (i) the number of exported cases, (ii) the probability of a major epidemic, and (iii) the time delay to a major epidemic. From 28 January to 7 February 2020, we estimated that 226 exported cases (95% confidence interval: 86,449) were prevented, corresponding to a 70.4% reduction in incidence compared to the counterfactual scenario. The reduced probability of a major epidemic ranged from 7% to 20% in Japan, which resulted in a median time delay to a major epidemic of two days. Depending on the scenario, the estimated delay may be less than one day. As the delay is small, the decision to control travel volume through restrictions on freedom of movement should be balanced between the resulting estimated epidemiological impact and predicted economic fallout.

Accession Number: WOS:000518823000313
**Article 34 of 39**

**Risk Assessment of Novel Coronavirus COVID-19 Outbreaks Outside China**

Boldog, P (Boldog, Peter); Tekeli, T (Tekeli, Tamas); Vizi, Z (Vizi, Zsolt); Denes, A (Denes, Attila); Bartha, FA (Bartha, Ferenc A.); Rost, G (Rost, Gergely)

JOURNAL OF CLINICAL MEDICINE Volume: 9 Issue: 2 Article Number: 571 DOI: 10.3390/jcm9020571 Published: FEB 2020

**Abstract:**

We developed a computational tool to assess the risks of novel coronavirus outbreaks outside of China. We estimate the dependence of the risk of a major outbreak in a country from imported cases on key parameters such as: (i) the evolution of the cumulative number of cases in mainland China outside the closed areas; (ii) the connectivity of the destination country with China, including baseline travel frequencies, the effect of travel restrictions, and the efficacy of entry screening at destination; and (iii) the efficacy of control measures in the destination country (expressed by the local reproduction number $R_{loc}$). We found that in countries with low connectivity to China but with relatively high $R_{loc}$, the most beneficial control measure to reduce the risk of outbreaks is a further reduction in their importation number either by entry screening or travel restrictions. Countries with high connectivity but low $R_{loc}$ benefit the most from policies that further reduce $R_{loc}$. Countries in the middle should consider a combination of such policies. Risk assessments were illustrated for selected groups of countries from America, Asia, and Europe. We investigated how their risks depend on those parameters, and how the risk is increasing in time as the number of cases in China is growing.

Accession Number: WOS:000518823000283

**Article 35 of 39**


Jung, SM (Jung, Sung-mok); Akhmetzhanov, AR (Akhmetzhanov, Andrei R.); Hayashi, K (Hayashi, Katsuma); Linton, NM (Linton, Natalie M.); Yang, YC (Yang, Yichi); Yuan, BY (Yuan, Baoyin); Kobayashi, T (Kobayashi, Tetsuro); Kinoshita, R (Kinoshita, Ryo); Nishiura, H (Nishiura, Hiroshi)

JOURNAL OF CLINICAL MEDICINE Volume: 9 Issue: 2 Article Number: 523 DOI: 10.3390/jcm9020523 Published: FEB 2020

**Abstract:**

The exported cases of 2019 novel coronavirus (COVID-19) infection that were confirmed outside China provide an opportunity to estimate the cumulative incidence and confirmed case fatality risk (cCFR) in mainland China. Knowledge of the cCFR is critical to characterize the severity and understand the pandemic potential of COVID-19 in the early stage of the epidemic. Using the exponential growth rate of the incidence, the present study statistically estimated the cCFR and the basic reproduction number—the average number of secondary cases generated by a single primary case in a naive population. We modeled epidemic growth either from a single index case with illness onset on 8 December 2019 (Scenario 1), or using the growth rate fitted along with the other
parameters (Scenario 2) based on data from 20 exported cases reported by 24 January 2020. The cumulative incidence in China by 24 January was estimated at 6924 cases (95% confidence interval [CI]: 4885, 9211) and 19,289 cases (95% CI: 10,901, 30,158), respectively. The latest estimated values of the cCFR were 5.3% (95% CI: 3.5%, 7.5%) for Scenario 1 and 8.4% (95% CI: 5.3%, 12.3%) for Scenario 2. The basic reproduction number was estimated to be 2.1 (95% CI: 2.0, 2.2) and 3.2 (95% CI: 2.7, 3.7) for Scenarios 1 and 2, respectively. Based on these results, we argued that the current COVID-19 epidemic has a substantial potential for causing a pandemic. The proposed approach provides insights in early risk assessment using publicly available data.

Accession Number: WOS:000518823000235

Article 36 of 39

Short-term Forecasts of the COVID-19 Epidemic in Guangdong and Zhejiang, China: February 13-23, 2020

Roosa, K (Roosa, Kimberly); Lee, Y (Lee, Yiseul); Luo, R (Luo, Ruiyan); Kirpich, A (Kirpich, Alexander); Rothenberg, R (Rothenberg, Richard); Hyman, JM (Hyman, James M.); Yan, P (Yan, Ping); Chowell, G (Chowell, Gerardo)

JOURNAL OF CLINICAL MEDICINE Volume: 9 Issue: 2 Article Number: 596 DOI: 10.3390/jcm9020596 Published: FEB 2020

Abstract:

The ongoing COVID-19 epidemic continues to spread within and outside of China, despite several social distancing measures implemented by the Chinese government. Limited epidemiological data are available, and recent changes in case definition and reporting further complicate our understanding of the impact of the epidemic, particularly in the epidemic's epicenter. Here we use previously validated phenomenological models to generate short-term forecasts of cumulative reported cases in Guangdong and Zhejiang, China. Using daily reported cumulative case data up until 13 February 2020 from the National Health Commission of China, we report 5- and 10-day ahead forecasts of cumulative case reports. Specifically, we generate forecasts using a generalized logistic growth model, the Richards growth model, and a sub-epidemic wave model, which have each been previously used to forecast outbreaks due to different infectious diseases. Forecasts from each of the models suggest the outbreaks may be nearing extinction in both Guangdong and Zhejiang; however, the sub-epidemic model predictions also include the potential for further sustained transmission, particularly in Zhejiang. Our 10-day forecasts across the three models predict an additional 65-81 cases (upper bounds: 169-507) in Guangdong and an additional 44-354 (upper bounds: 141-875) cases in Zhejiang by February 23, 2020. In the best-case scenario, current data suggest that transmission in both provinces is slowing down.

Accession Number: WOS:000518823000308
Estimation of the Transmission Risk of the 2019-nCoV and Its Implication for Public Health Interventions

Tang, B (Tang, Biao); Wang, X (Wang, Xia); Li, Q (Li, Qian); Bragazzi, NL (Bragazzi, Nicola Luigi); Tang, SY (Tang, Sanyi); Xiao, YN (Xiao, Yanni); Wu, JH (Wu, Jianhong)

Abstract:
Since the emergence of the first cases in Wuhan, China, the novel coronavirus (2019-nCoV) infection has been quickly spreading out to other provinces and neighboring countries. Estimation of the basic reproduction number by means of mathematical modeling can be helpful for determining the potential and severity of an outbreak and providing critical information for identifying the type of disease interventions and intensity. A deterministic compartmental model was devised based on the clinical progression of the disease, epidemiological status of the individuals, and intervention measures. The estimations based on likelihood and model analysis show that the control reproduction number may be as high as 6.47 (95% CI 5.71-7.23). Sensitivity analyses show that interventions, such as intensive contact tracing followed by quarantine and isolation, can effectively reduce the control reproduction number and transmission risk, with the effect of travel restriction adopted by Wuhan on 2019-nCoV infection in Beijing being almost equivalent to increasing quarantine by a 100 thousand baseline value. It is essential to assess how the expensive, resource-intensive measures implemented by the Chinese authorities can contribute to the prevention and control of the 2019-nCoV infection, and how long they should be maintained. Under the most restrictive measures, the outbreak is expected to peak within two weeks (since 23 January 2020) with a significant low peak value. With travel restriction (no imported exposed individuals to Beijing), the number of infected individuals in seven days will decrease by 91.14% in Beijing, compared with the scenario of no travel restriction.

Accession Number: WOS:000518823000174

Estimating the Unreported Number of Novel Coronavirus (2019-nCoV) Cases in China in the First Half of January 2020: A Data-Driven Modelling Analysis of the Early Outbreak

Zhao, S (Zhao, Shi); Musa, SS (Musa, Salihu S.); Lin, QY (Lin, Qianying); Ran, JJ (Ran, Jinjun); Yang, GP (Yang, Guangpu); Wang, WM (Wang, Weiming); Lou, YJ (Lou, Yijun); Yang, L (Yang, Lin); Gao, DZ (Gao, Daozhou); He, DH (He, Daihai); Wang, MH (Wang, Maggie H.)

Abstract:
Background: In December 2019, an outbreak of respiratory illness caused by a novel coronavirus (2019-nCoV) emerged in Wuhan, China and has swiftly spread to other parts of China and a number of foreign countries. The 2019-nCoV cases might have been under-reported roughly from 1 to 15
January 2020, and thus we estimated the number of unreported cases and the basic reproduction number, R_0, of 2019-nCoV. Methods: We modelled the epidemic curve of 2019-nCoV cases, in mainland China from 1 December 2019 to 24 January 2020 through the exponential growth. The number of unreported cases was determined by the maximum likelihood estimation. We used the serial intervals (SI) of infection caused by two other well-known coronaviruses (CoV), Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) CoVs, as approximations of the unknown SI for 2019-nCoV to estimate R_0. Results: We confirmed that the initial growth phase followed an exponential growth pattern. The under-reporting was likely to have resulted in 469 (95% CI: 403-540) unreported cases from 1 to 15 January 2020. The reporting rate after 17 January 2020 was likely to have increased 21-fold (95% CI: 18-25) in comparison to the situation from 1 to 17 January 2020 on average. We estimated the R_0 of 2019-nCoV at 2.56 (95% CI: 2.49-2.63). Conclusion: The under-reporting was likely to have occurred during the first half of January 2020 and should be considered in future investigation.

**Article 39 of 39**

**The Novel Chinese Coronavirus (2019-nCoV) Infections: challenges for fighting the storm**

Bassetti, M (Bassetti, Matteo); Vena, A (Vena, Antonio); Giacobbe, DR (Giacobbe, Daniele Roberto)

EUROPEAN JOURNAL OF CLINICAL INVESTIGATION Volume: 50 Issue: 3 DOI: 10.1111/eci.13209 Early Access Date: JAN 2020 Published: MAR 2020

Accession Number: WOS:000510768300001
INFECTIOUS DISEASES:
Only strict quarantine measures can curb the coronavirus disease (COVID-19) outbreak in Italy, 2020

Sjodin, H (Sjodin, Henrik); Wilder-Smith, A (Wilder-Smith, Annelies); Osman, S (Osman, Sarah); Farooq, Z (Farooq, Zia); Rocklov, J (Rocklov, Joacim)

EUROSURVEILLANCE Volume: 25 Issue: 13 Pages: 7-12 DOI: 10.2807/1560-7917.ES.2020.25.13.2000280 Published: APR 2 2020

Abstract:

Several Italian towns are under lockdown to contain the COVID-19 outbreak. The level of transmission reduction required for physical distancing interventions to mitigate the epidemic is a crucial question. We show that very high adherence to community quarantine (total stay-home policy) and a small household size is necessary for curbing the outbreak in a locked-down town. The larger the household size and amount of time in the public, the longer the lockdown period needed.

Accession Number: WOS:000523346200002

Indications for healthcare surge capacity in European countries facing an exponential increase in coronavirus disease (COVID-19) cases, March 2020

Verelst, F (Verelst, Frederik); Kuylen, E (Kuylen, Elise); Beutels, P (Beutels, Philippe)


Abstract:

European healthcare systems face extreme pressure from coronavirus disease (COVID-19). We relate country-specific accumulated COVID-19 deaths (intensity approach) and active COVID-19 cases (magnitude approach) to measures of healthcare system capacity: hospital beds, healthcare workers and healthcare expenditure. Modelled by the intensity approach with a composite measure for healthcare capacity, the countries experiencing the highest pressure on 25 March 2020 - relative to Italy on 11 March - were Italy, Spain, the Netherlands and France (www.covid-hcpressure.org).

Accession Number: WOS:000523346200003

Understanding coronavirus disease (COVID-19) risk perceptions among the public to enhance risk communication efforts: a practical approach for outbreaks, Finland, February 2020

Lohiniva, AL (Lohiniva, Anna-Leena); Sane, J (Sane, Jussi); Sibenberg, K (Sibenberg, Katja); Puualainen, T (Puualainen, Taneli); Salminen, M (Salminen, Mika)
Understanding risk perceptions of the public is critical for risk communication. In February 2020, the Finnish Institute for Health and Welfare started collecting weekly qualitative data on coronavirus disease (COVID-19) risk perception that informs risk communication efforts. The process is based on thematic analysis of emails and social media messages from the public and identifies factors linked to appraisal of risk magnitude, which are developed into risk communication recommendations together with health and communication experts.

Accession Number: WOS:000523346200004

Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study

Shi, HS (Shi, Heshui); Han, XY (Han, Xiaoyu); Jiang, NC (Jiang, Nanchuan); Cao, YK (Cao, Yukun); Alwalid, O (Alwalid, Osamah); Gu, J (Gu, Jin); Fan, YQ (Fan, Yanqing); Zheng, CS (Zheng, Chuansheng)

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. Copyright (C) 2020 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000522055100050

Article 5 of 37

Clinical characteristics and imaging manifestations of the 2019 novel coronavirus disease (COVID-19): A multi-center study in Wenzhou city, Zhejiang, China

Yang, WJ (Yang, Wenjie); Cao, QQ (Cao, Qiqi); Qin, L (Qin, Le); Wang, XY (Wang, Xiaoyang); Cheng, ZH (Cheng, Zenghui); Pan, AS (Pan, Ashan); Dai, JY (Dai, Jianyi); Sun, QF (Sun, Qingfeng); Zhao, FQ (Zhao, Fengquan); Qu, JM (Qu, Jieming); Yan, FH (Yan, Fuhua)


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 multi-focal 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. (C) 2020 The British Infection Association. Published by Elsevier Ltd. All rights reserved.

Accession Number: WOS:000521239700003
Article 6 of 37

Characteristics of COVID-19 infection in Beijing

Tian, SJ (Tian, Sijia); Hu, N (Hu, Nan); Lou, J (Lou, Jing); Chen, K (Chen, Kun); Kang, XQ (Kang, Xuqin); Xiang, ZJ (Xiang, Zhenjun); Chen, H (Chen, Hui); Wang, DL (Wang, Dali); Liu, N (Liu, Ning); Liu, D (Liu, Dong); Chen, G (Chen, Gang); Zhang, YL (Zhang, Yongliang); Li, D (Li, Dou); Li, JR (Li, Jianren); Lian, HX (Lian, Huixin); Niu, SM (Niu, Shengmei); Zhang, LX (Zhang, Luxi); Zhang, JJ (Zhang, Jinjun)


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 COVID19 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.

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Accession Number: WOS:000521239700005
Full-genome evolutionary analysis of the novel corona virus (2019-nCoV) rejects the hypothesis of emergence as a result of a recent recombination event

Paraskevis, D (Paraskevis, D.); Kostaki, EG (Kostaki, E. G.); Magiorkinis, G (Magiorkinis, G.); Panayiotakopoulos, G (Panayiotakopoulos, G.); Sourvinos, G (Sourvinos, G.); Tsiodras, S (Tsiodras, S.)

INFECTION GENETICS AND EVOLUTION Volume: 79 Article Number: 104212 DOI: 10.1016/j.meegid.2020.104212 Published: APR 2020

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.

Accession Number: WOS:000510866400018

Potential short-term outcome of an uncontrolled COVID-19 epidemic in Lombardy, Italy, February to March 2020

Guzzetta, G (Guzzetta, Giorgio); Poletti, P (Poletti, Piero); Ajelli, M (Ajelli, Marco); Trentini, F (Trentini, Filippo); Marziano, V (Marziano, Valentina); Cereda, D (Cereda, Danilo); Tirani, M (Tirani, Marcello); Diurno, G (Diurno, Giulio); Bodina, A (Bodina, Annalisa); Barone, A (Barone, Antonio); Crottogini, L (Crottogini, Lucia); Gramegna, M (Gramegna, Maria); Melegaro, A (Melegaro, Alessia); Merler, S (Merler, Stefano)
Abstract:
Sustained coronavirus disease (COVID-19) transmission is ongoing in Italy, with 7,375 reported cases and 366 deaths by 8 March 2020. We provide a model-based evaluation of patient records from Lombardy, predicting the impact of an uncontrolled epidemic on the healthcare system. It has the potential to cause more than 250,039 (95% credible interval (CI): 147,717-459,890) cases within 3 weeks, including 37,194 (95% CI: 22,250-67,63z) patients requiring intensive care. Aggressive containment strategies are required.

Accession Number: WOS:000522148900001

Article 9 of 37
Rapidly increasing cumulative incidence of coronavirus disease (COVID-19) in the European Union/European Economic Area and the United Kingdom, 1 January to 15 March 2020

Kinross, P (Kinross, Pete); Suetens, C (Suetens, Carl); Dias, JG (Dias, Joana Gomes); Alexakis, L (Alexakis, Leonidas); Wijermans, A (Wijermans, Ariana); Colzani, E (Colzani, Edoardo); Monnet, DL (Monnet, Dominique L.)

Group European Ctr Dis Prevention Contr

EUROSURVEILLANCE Volume: 25 Issue: 11 Pages: 2-6 Article Number: 2000285 DOI: 10.2807/1560-7917.ES.2020.25.11.2000285 Published: MAR 19 2020

Abstract:
The cumulative incidence of coronavirus disease (COVID-19) cases is showing similar trends in European Union/European Economic Area countries and the United Kingdom confirming that, while at a different stage depending on the country, the COVID-19 pandemic is progressing rapidly in all countries. Based on the experience from Italy, countries, hospitals and intensive care units should increase their preparedness for a surge of patients with COVID-19 who will require healthcare, and in particular intensive care.

Accession Number: WOS:000521058800001

Article 10 of 37
Influenza-associated pneumonia as reference to assess seriousness of coronavirus disease COVID-19

Tolksdorf, K (Tolksdorf, Kristin); Buda, S (Buda, Silke); Schuler, E (Schuler, Ekkehard); Wieler, LH (Wieler, Lothar H.); Haas, W (Haas, Walter)

EUROSURVEILLANCE Volume: 25 Issue: 11 Pages: 7-11 Article Number: 2000258 DOI: 10.2807/1560-7917.ES.2020.25.11.2000258 Published: MAR 19 2020
Abstract:

Information on severity of coronavirus disease (COVID-19) (transmissibility, disease seriousness, impact) is crucial for preparation of healthcare sectors. We present a simple approach to assess disease seriousness, creating a reference cohort of pneumonia patients from sentinel hospitals. First comparisons exposed a higher rate of COVID-19 patients requiring ventilation. There were more case fatalities among COVID-19 patients without comorbidities than in the reference cohort. Hospitals should prepare for high utilisation of ventilation and intensive care resources.

Accession Number: WOS:000521058800002

Article 11 of 37

Coronavirus disease (COVID-19) in a paucisymptomatic patient: epidemiological and clinical challenge in settings with limited community transmission, Italy, February 2020

Nicastri, E (Nicastri, Emanuele); D’Abramo, A (D’Abramo, Alessandra); Faggioni, G (Faggioni, G.); De Santis, R (De Santis, Riccardo); Mariano, A (Mariano, Andrea); Lepore, L (Lepore, Luciana); Molinari, F (Molinari, Filippo); Petralito, G (Petralito, Giancarlo); Fillo, S (Fillo, Silvia); Munzi, D (Munzi, Diego); Corpolongo, A (Copolongo, Angela); Bordi, L (Bordi, Licia); Carletti, F (Carletti, Fabrizio); Castiletti, C (Castiletti, Concetta); Colavita, F (Colavita, Francesca); Lalle, E (Lalle, Eleonora); Bevilacqua, N (Bevilacqua, Nazario); Giancola, ML (Giancola, Maria Letizia); Scorzolini, L (Scorzolini, Laura); Lanini, S (Lanini, Simone); Palazzolo, C (Palazzolo, Claudia); De Domenico, A (De Domenico, Angelo); Spinelli, MA (Spinelli, Maria Anna); Scognamiglio, P (Scognamiglio, Paola); Piredda, P (Piredda, Paolo); Iacomino, R (Iacomino, Raffaele); Mone, A (Mone, Andrea); Puro, V (Puro, Vincenzo); Petrosillo, N (Petrosillo, Nicola); Battistini, A (Battistini, Antonio); Vairo, F (Vairo, Francesco); Lista, F (Lista, Florigio); Ippolito, G (Ippolito, Giuseppe)

Group INMI COVID-19 Study Grp; Italian Army COVID-19 Study Grp

EUROSURVEILLANCE Volume: 25 Issue: 11 Pages: 12-15 Article Number: 2000230 DOI: 10.2807/1560-7917.ES.2020.25.11.2000230 Published: MAR 19 2020

Abstract:

Data concerning the transmission of the novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) in paucisymptomatic patients are lacking. We report an Italian paucisymptomatic case of coronavirus disease 2019 with multiple biological samples positive for SARS-CoV-2. This case was detected using the World Health Organization protocol on cases and contact investigation. Current discharge criteria and the impact of extra-pulmonary SARS-CoV-2 samples are discussed.

Accession Number: WOS:000521058800003

Article 12 of 37

Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020
Mizumoto, K (Mizumoto, Kenji); Kagaya, K (Kagaya, Katsushi); Zarebski, A (Zarebski, Alexander); Chowell, G (Chowell, Gerardo)

EUROSURVEILLANCE  Volume: 25  Issue: 10  Pages: 2-6  Article Number: 2000180  DOI: 10.2807/1560-7917.ES.2020.25.10.2000180  Published: MAR 12 2020

Abstract:
On 5 February 2020, in Yokohama, Japan, a cruise ship hosting 3,711 people underwent a 2-week quarantine after a former passenger was found with COVID-19 post-disembarking. As at 20 February, 634 persons on board tested positive for the causative virus. We conducted statistical modelling to derive the delay-adjusted asymptomatic proportion of infections, along with the infections' timeline. The estimated asymptomatic proportion was 17.9% (95% credible interval (CrI): 15.5-20.2%). Most infections occurred before the quarantine start.

Accession Number: WOS:000519988300001

Article 13 of 37
Retrospective analysis of the possibility of predicting the COVID-19 outbreak from Internet searches and social media data, China, 2020

Li, CL (Li, Cuilian); Chen, LJ (Chen, Li Jia); Chen, XY (Chen, Xueyu); Zhang, MZ (Zhang, Mingzhi); Pang, CP (Pang, Chi Pui); Chen, HY (Chen, Haoyu)

EUROSURVEILLANCE  Volume: 25  Issue: 10  Pages: 7-11  Article Number: 2000199  DOI: 10.2807/1560-7917.ES.2020.25.10.2000199  Published: MAR 12 2020

Abstract:
The peak of Internet searches and social media data about the coronavirus disease 2019 (COVID-19) outbreak occurred 10-14 days earlier than the peak of daily incidences in China. Internet searches and social media data had high correlation with daily incidences, with the maximum r>0.89 in all correlations. The lag correlations also showed a maximum correlation at 8-12 days for laboratory-confirmed cases and 6-8 days for suspected cases.

Accession Number: WOS:000519988300002

Article 14 of 37
Post-discharge surveillance and positive virus detection in two medical staff recovered from coronavirus disease 2019 (COVID-19), China, January to February 2020

Xing, YY (Xing, Yuanyuan); Mo, PZ (Mo, Pingzheng); Xiao, Y (Xiao, Yu); Zhao, O (Zhao, Oiu); Zhang, YX (Zhang, Yongxi); Wang, F (Wang, Fan)

EUROSURVEILLANCE  Volume: 25  Issue: 10  Pages: 12-15  Article Number: 200191  DOI: 10.2807/1560-7917.ES.2020.25.10.2000191  Published: MAR 12 2020

Abstract:
Since December 2019, 62 medical staff of Zhongnan Hospital in Wuhan, China have been hospitalised with coronavirus disease 2019. During the post-discharge surveillance after clinical recovery, swabs were positive in two asymptomatic cases (3.23%). Case 1 had presented typical clinical and radiological manifestations on admission, while manifestation in Case 2 was very mild. In conclusion, a small proportion of recovered patients may test positive after discharge, and post-discharge surveillance and isolation need to be strengthened.

Accession Number: WOS:000519988300003

**Article 15 of 37**

**First cases of coronavirus disease 2019 (COVID-19) in the WHO European Region, 24 January to 21 February 2020**

Spiteri, G (Spiteri, Gianfranco); Fielding, J (Fielding, James); Diercke, M (Diercke, Michaela); Campese, C (Campese, Christine); Enouf, V (Enouf, Vincent); Gaymard, A (Gaymard, Alexandre); Bella, A (Bella, Antonino); Sognamiglio, P (Sognamiglio, Paola); Moros, MJS (Sierra Moros, Maria Jose); Riutort, AN (Nicolau Riutort, Antonio); Demina, YV (Demina, Yulia, V); Mahieu, R (Mahieu, Romain); Broas, M (Broas, Markku); Bengner, M (Bengner, Malin); Buda, S (Buda, Silke); Schilling, J (Schilling, Julia); Filleul, L (Filleul, Laurent); Leport, A (Leportre, Agnes); Saura, C (Saura, Christine); Mailles, A (Mailles, Alexandra); Levy-Bruhl, D (Levy-Bruhl, Daniel); Coignard, B (Coignard, Bruno); Bernard-Stoecklin, S (Bernard-Stoecklin, Sibylle); Behillil, S (Behillil, Sylvie); van der Werf, S (van der Werf, Sylvie); Valette, M (Valette, Martine); Lina, B (Lina, Bruno); Riccardo, F (Riccardo, Flavia); Nisastri, E (Nisastri, Emanuele); Casas, I (Casas, Inmaculada); Larrauri, A (Larrauri, Amparo); Castell, MS (Salom Castell, Magdalena); Pozo, F (Pozo, Francisco); Maksyutov, RA (Maksyutov, Rinat A.); Martin, C (Martin, Charlotte); Van Ranst, M (Van Ranst, Marc); Bossuyt, N (Bossuyt, Nathalie); Siira, L (Siira, Lotta); Sane, J (Sane, Jussi); Tegmark-Wisell, K (Tegmark-Wisell, Karin); Palmerus, M (Palmerus, Maria); Broberg, EK (Broberg, Eeva K.); Beaute, J (Beaute, Julien); Jorgensen, P (Jorgensen, Pernille); Bundle, N (Bundle, Nick); Pereyaslav, D (Pereyaslav, Dmitriy); Adlhoch, C (Adlhoch, Cornelia); Pukkila, J (Pukkila, Jukka); Pebody, R (Pebody, Richard); Olsen, S (Olsen, Sonja); Ciancio, BC (Ciancio, Bruno Christian)

EUROSURVEILLANCE Volume: 25 Issue: 9 Pages: 2-7 Article Number: 2000178 DOI: 10.2807/1560-7917.ES.2020.25.9.2000178 Published: MAR 5 2020

**Abstract:**

In the WHO European Region, COVID-19 surveillance was implemented 27 January 2020. We detail the first European cases. As at 21 February, nine European countries reported 47 cases. Among 38 cases studied, 21 were linked to two clusters in Germany and France, 14 were infected in China. Median case age was 42 years; 25 were male. Late detection of the clusters’ index cases delayed isolation of further local cases. As at 5 March, there were 4,250 cases.

Accession Number: WOS:000519193900001
Potential scenarios for the progression of a COVID-19 epidemic in the European Union and the European Economic Area, March 2020

Johnson, HC (Johnson, Helen C.); Gossner, CM (Gossner, Celine M.); Colzani, E (Colzani, Edoardo); Kinsman, J (Kinsman, John); Alexakis, L (Alexakis, Leonidas); Beaut, J (Beaut, Julien); Wurz, A (Wurz, Andrea); Tsolova, S (Tsolova, Svetla); Bundle, N (Bundle, Nick); Ekdahl, K (Ekdahl, Karl)

EUROSURVEILLANCE Volume: 25 Issue: 9 Pages: 8-12 Article Number: 2000202 DOI: 10.2807/1560-7917.ES.2020.25.9.2000202 Published: MAR 5 2020

Abstract:

Two months after the emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the possibility of established and widespread community transmission in the European Union and European Economic Area (EU/EEA) is becoming more likely. We provide scenarios for use in preparedness for a possible widespread epidemic. The EU/EEA is moving towards the ‘limited sustained transmission’ phase. We propose actions to prepare for potential mitigation phases and coordinate efforts to protect the health of citizens.

Accession Number: WOS:000519193900002

Spatial-temporal distribution of COVID-19 in China and its prediction: A data-driven modeling analysis

Huang, R (Huang, Rui); Liu, M (Liu, Miao); Ding, YM (Ding, Yongmei)

JOURNAL OF INFECTION IN DEVELOPING COUNTRIES Volume: 14 Issue: 3 Pages: 246-253 DOI: 10.3855/jidc.12585 Published: MAR 2020

Abstract:

Currently, the outbreak of COVID-19 is rapidly spreading especially in Wuhan city, and threatens 14 million people in central China. In the present study we applied the Moran index, a strong statistical tool, to the spatial panel to show that COVID-19 infection is spatially dependent and mainly spread from Hubei Province in Central China to neighbouring areas. Logistic model was employed according to the trend of available data, which shows the difference between Hubei Province and outside of it. We also calculated the reproduction number $R_0$ for the range of $[2.23, 2.51]$ via SEIR model. The measures to reduce or prevent the virus spread should be implemented, and we expect our datadriven modeling analysis providing some insights to identify and prepare for the future virus control.

Accession Number: WOS:000523249000003
The novel zoonotic COVID-19 pandemic: An expected global health concern

Contini, C (Contini, Carlo); Di Nuzzo, M (Di Nuzzo, Mariachiara); Barp, N (Barp, Nicole); Bonazza, A (Bonazza, Aurora); De Giorgio, R (De Giorgio, Roberto); Tognon, M (Tognon, Mauro); Rubino, S (Rubino, Salvatore)

JOURNAL OF INFECTION IN DEVELOPING COUNTRIES Volume: 14 Issue: 3 Pages: 254-264 DOI: 10.3855/jidc.12671 Published: MAR 2020

Abstract:

18 years ago, in 2002, the world was astonished by the appearance of Severe Acute Respiratory Syndrome (SARS), supported by a zoonotic coronavirus, called SARS-CoV, from the Guangdong Province of southern China. After about 10 years, in 2012, another similar coronavirus triggered the Middle East Respiratory Syndrome (MERS-CoV) in Saudi Arabia. Both caused severe pneumonia killing 774 and 858 people with 8700 cases of confirmed infection for the former, and 2494 for the latter, causing significant economic losses. 8 years later, despite the MERS outbreak remaining in certain parts of the world, at the end of 2019, a new zoonotic coronavirus (SARS-CoV-2) and responsible of coronavirus Disease (COVID-19), arose from Wuhan, Hubei Province, China. It spread rapidly and to date has killed 3,242 persons with more than 81,000 cases of infection in China and causing over 126,000 global cases and 5,414 deaths in 166 other countries around the world, especially Italy. SARS-CoV-2 would seem to have come from a bat, but the intermediate reservoir continues to be unknown. Nonetheless, as for SARS-CoV and MERS CoV, the Spillover effect linked to animal-human promiscuity, human activities including deforestation, illegal bush-trafficking and bushmeat, cannot be excluded. Recently, however, evidence of inter-human only transmission of SARS-CoV-2 has been accumulated and thus, the outbreak seems to be spreading by human-to-human transmission throughout a large part of the world. Herein we will provide with an update on the main features of COVID-19 and suggest possible solutions how to halt the expansion of this novel pandemic.

Accession Number: WOS:000523249000004

As COVID-19 cases, deaths and fatality rates surge in Italy, underlying causes require investigation

Rubino, S (Rubino, Salvatore); Kelvin, N (Kelvin, Nikki); Bermejo-Martin, JF (Bermejo-Martin, Jesus F.); Kelvin, DJ (Kelvin, David J.)

JOURNAL OF INFECTION IN DEVELOPING COUNTRIES Volume: 14 Issue: 3 Pages: 265-267 DOI: 10.3855/jidc.12734 Published: MAR 2020

Abstract:

COVID-19 case fatalities surged during the month of March 2020 in Italy, reaching over 10,000 by 28 March 2020. This number exceeds the number of fatalities in China (3,301)
Recorded from January to March, even though the number of diagnosed cases was similar (85,000 Italy vs. 80,000 China). Case Fatality Rates (CFR) could be somewhat unreliable because the estimation of total case numbers is limited by several factors, including insufficient testing and limitations in test kits and materials, such as NP swabs and PPE for testers. Sero prevalence of SARS-CoV-2 antibodies may help in more accurate estimations of the total number of cases. Nevertheless, the disparity in the differences in the total number of fatalities between Italy and China suggests that investigation into several factors, such as demographics, sociological interactions, availability of medical equipment (ICU beds and PPE), variants in immune proteins (e.g., HLA, IFNs), past immunity to related CoVs, and mutations in SARS-CoV-2, could impact survival of severe COVID-19 illness survival and the number of case fatalities.

Accession Number: WOS:000523249000005

Article 20 of 37

Preliminary estimation of the basic reproduction number of novel coronavirus (2019-nCoV) in China, from 2019 to 2020: A data-driven analysis in the early phase of the outbreak

Zhao, S (Zhao, Shi); Lin, QY (Lin, Qianyin); Ran, JJ (Ran, Jinjun); Musa, SS (Musa, Salihu S.); Yang, GP (Yang, Guangpu); Wang, WM (Wang, Weiming); Lou, YJ (Lou, Yijun); Gao, DZ (Gao, Daozhou); Yang, L (Yang, Lin); He, DH (He, Daihai); Wang, MH (Wang, Maggie H.)

INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES Volume: 92 Pages: 214-217 DOI: 10.1016/j.ijid.2020.01.050 Published: MAR 2020

Abstract:

Backgrounds: An ongoing outbreak of a novel coronavirus (2019-nCoV) pneumonia hit a major city in China, Wuhan, December 2019 and subsequently reached other provinces/regions of China and other countries. We present estimates of the basic reproduction number, R-0, of 2019-nCoV in the early phase of the outbreak.

Methods: Accounting for the impact of the variations in disease reporting rate, we modelled the epidemic curve of 2019-nCoV cases time series, in mainland China from January 10 to January 24, 2020, through the exponential growth. With the estimated intrinsic growth rate (gamma), we estimated R-0 by using the serial intervals (SI) of two other well-known coronavirus diseases, MERS and SARS, as approximations for the true unknown SI.

Findings: The early outbreak data largely follows the exponential growth. We estimated that the mean R-0 ranges from 2.24 (95%CI: 1.96-2.55) to 3.58 (95%CI: 2.89-4.39) associated with 8-fold to 2-fold increase in the reporting rate. We demonstrated that changes in reporting rate substantially affect estimates of R-0.

Conclusion: The mean estimate of R-0 for the 2019-nCoV ranges from 2.24 to 3.58, and is significantly larger than 1. Our findings indicate the potential of 2019-nCoV to cause outbreaks. (C) 2020 The Author(s). Published by Elsevier Ltd on behalf of International Society for Infectious Diseases.

Accession Number: WOS:000519191900034
**Pathogenicity and transmissibility of 2019-nCoV-A quick overview and comparison with other emerging viruses**

Chen, JL (Chen, Jieliang)

MICROBES AND INFECTION  Volume: 22  Issue: 2  Special Issue: SI  Pages: 69-71  DOI: 10.1016/j.micinf.2020.01.004  Published: MAR 2020

**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. (C) 2020 The Author(s). Published by Elsevier Masson SAS on behalf of Institut Pasteur.

Accession Number: WOS:000519987000001

**Is COVID-19 receiving ADE from other coronaviruses?**

Tetro, JA (Tetro, Jason A.)

MICROBES AND INFECTION  Volume: 22  Issue: 2  Special Issue: SI  Pages: 72-73  DOI: 10.1016/j.micinf.2020.02.006  Published: MAR 2020

**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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000002
**Article 23 of 37**


Li, JY (Li, Jin-Yan); You, Z (You, Zhi); Wang, Q (Wang, Qiong); Zhou, ZJ (Zhou, Zhi-Jian); Qiu, Y (Qiu, Ye); Luo, R (Luo, Rui); Ge, XY (Ge, Xing-Yi)

MICROBES AND INFECTION  Volume: 22  Issue: 2  Special Issue: SI  Pages: 80-85  DOI: 10.1016/j.micinf.2020.02.002  Published: MAR 2020

**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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000004

**Article 24 of 37**

**Lessons learned from the 2019-nCoV epidemic on prevention of future infectious diseases**

Pan, XC (Pan, Xingchen); Ojcius, DM (Ojcius, David M.); Gao, TY (Gao, Tianyue); Li, ZS (Li, Zhongsheng); Pan, CH (Pan, Chunhua); Pan, CG (Pan, Chungen)

MICROBES AND INFECTION  Volume: 22  Issue: 2  Special Issue: SI  Pages: 86-91  DOI: 10.1016/j.micinf.2020.02.004  Published: MAR 2020

**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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000005

Article 25 of 37

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

Lai, CC (Lai, Chih-Cheng); Shih, TP (Shih, Tzu-Ping); Ko, WC (Ko, Wen-Chien); Tang, HJ (Tang, Hung-Jen); Hsueh, PR (Hsueh, Po-Ren)

INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS Volume: 55 Issue: 3 Article Number: UNSP 105924 DOI: 10.1016/j.ijantimicag.2020.105924 Published: MAR 2020

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. (C) 2020 Elsevier B.V. and International Society of Chemotherapy. All rights reserved.

Accession Number: WOS:000518855500030

Article 26 of 37

Early transmission patterns of coronavirus disease 2019 (COVID-19) in travellers from Wuhan to Thailand, January 2020

Okada, P (Okada, Pilailuk); Buathong, R (Buathong, Rome); Phuygun, S (Phuygun, Siriporn); Thanadachakul, T (Thanadachakul, Thanutsapa); Parnmen, S (Parnmen, Sittiporn); Wongboot, W (Wongboot, Warawan); Waicharoen, S (Waicharoen, Sunthareeya); Wacharapluesadee, S
Abstract:
We report two cases of coronavirus disease 2019 (COVID-19) in travellers from Wuhan, China to Thailand. Both were independent introductions on separate flights, discovered with thermoscanners and confirmed with RT-PCR and genome sequencing. Both cases do not seem directly linked to the Huanan Seafood Market in Hubei but the viral genomes are identical to four other sequences from Wuhan, suggesting early spread within the city already in the first week of January.

Accession Number: WOS:000518026900002

Article 27 of 37

Laboratory readiness and response for novel coronavirus (2019-nCoV) in expert laboratories in 30 EU/EEA countries, January 2020

Reusken, CBEM (Reusken, Chantal B. E. M.); Broberg, EK (Broberg, Eeva K.); Haagmans, B (Haagmans, Bart); Meijer, A (Meijer, Adam); Corman, VM (Corman, Victor M.); Papa, A (Papa, Anna); Charrel, R (Charrel, Remi); Drosten, C (Drosten, Christian); Koopmans, M (Koopmans, Marion); Leitmeyer, K (Leitmeyer, Katrin)

Group EVD-LabNet; ERLI-Net

EUROSURVEILLANCE Volume: 25 Issue: 6 Pages: 7-12 Article Number: 2000082 DOI: 10.2807/1560-7917.ES.2020.25.6.2000082 Published: FEB 13 2020

Abstract:
Timely detection of novel coronavirus (2019-nCoV) infection cases is crucial to interrupt the spread of this virus. We assessed the required expertise and capacity for molecular detection of 2019-nCoV in specialised laboratories in 30 European Union/European Economic Area (EU/EEA) countries. Thirty-eight laboratories in 24 EU/EEA countries had diagnostic tests available by 29 January 2020. A coverage of all EU/EEA countries was expected by mid-February. Availability of primers/probes, positive controls and personnel were main implementation barriers.

Accession Number: WOS:000514439600002

Article 28 of 37

First cases of coronavirus disease 2019 (COVID-19) in France: surveillance, investigations and control measures, January 2020

Stoecklin, SB (Stoecklin, Sibylle Bernard); Rolland, P (Rolland, Patrick); Silue, Y (Silue, Yassoungo); Mailles, A (Mailles, Alexandra); Campese, C (Campese, Christine); Simondon, A (Simondon, Anne); Mechain, M (Mechain, Matthieu); Meurice, L (Meurice, Laure); Nguyen, M
Abstract:

A novel coronavirus (severe acute respiratory syndrome coronavirus 2, SARS-CoV-2) causing a cluster of respiratory infections (coronavirus disease 2019, COVID-19) in Wuhan, China, was identified on 7 January 2020. The epidemic quickly disseminated from Wuhan and as at 12 February 2020, 45,179 cases have been confirmed in 25 countries, including 1,116 deaths. Strengthened surveillance was implemented in France on 10 January 2020 in order to identify imported cases early and prevent secondary transmission. Three categories of risk exposure and follow-up procedure were defined for contacts. Three cases of COVID-19 were confirmed on 24 January, the first cases in Europe. Contact tracing was immediately initiated. Five contacts were evaluated as at low risk of exposure and 18 at moderate/high risk. As at 12 February 2020, two cases have been discharged and the third one remains symptomatic with a persistent cough, and no secondary transmission has been identified. Effective collaboration between all parties involved in the surveillance and response to emerging threats is required to detect imported cases early and to implement adequate control measures.

Accession Number: WOS:000514439600004
Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV)

Quilty, BJ (Quilty, Billy J.); Clifford, S (Clifford, Sam); Flasche, S (Flasche, Stefan); Eggo, RM (Eggo, Rosalind M.); Liu, Y (Liu, Yang); Diamond, C (Diamond, Charlie); Edmunds, WJ (Edmunds, W. John); Funk, S (Funk, Sebastian); Gimma, A (Gimma, Amy); Munday, JD (Munday, James D.); Gibbs, H (Gibbs, Hamish); Bosse, NI (Bosse, Nikos, I); Abbott, S (Abbott, Sam); Russell, TW (Russell, Timothy W.); Klepac, P (Klepac, Petra); Jit, M (Jit, Mark); Hellewell, J (Hellewell, Joel)

Group CMMID NCoV Working Grp

EUROSURVEILLANCE Volume: 25 Issue: 5 Pages: 4-9 Article Number: 2000080 DOI: 10.2807/1560-7917.ES.2020.25.5.2000080 Published: FEB 6 2020

Abstract:

We evaluated effectiveness of thermal passenger screening for 2019-nCoV infection at airport exit and entry to inform public health decision-making. In our baseline scenario, we estimated that 46% (95% confidence interval: 36 to 58) of infected travellers would not be detected, depending on incubation period, sensitivity of exit and entry screening, and proportion of asymptomatic cases. Airport screening is unlikely to detect a sufficient proportion of 2019-nCoV infected travellers to avoid entry of infected travellers.


Backer, JA (Backer, Jantien A.); Klinkenberg, D (Klinkenberg, Don); Wallinga, J (Wallinga, Jacco)

EUROSURVEILLANCE Volume: 25 Issue: 5 Pages: 10-15 Article Number: 2000062 DOI: 10.2807/1560-7917.ES.2020.25.5.2000062 Published: FEB 6 2020

Abstract:

A novel coronavirus (2019-nCoV) is causing an outbreak of viral pneumonia that started in Wuhan, China. Using the travel history and symptom onset of 88 confirmed cases that were detected outside Wuhan in the early outbreak phase, we estimate the mean incubation period to be 6.4 days (95% credible interval: 5.6-7.7), ranging from 2.1 to 11.1 days (2.5th to 97.5th percentile). These values should help inform 2019-nCoV case definitions and appropriate quarantine durations.
Article 31 of 37

Similarity in Case Fatality Rates (CFR) of COVID-19/SARS-COV-2 in Italy and China

Porcheddu, R (Porcheddu, Rossella); Serra, C (Serra, Caterina); Kelvin, D (Kelvin, David); Kelvin, N (Kelvin, Nikki); Rubino, S (Rubino, Salvatore)

JOURNAL OF INFECTION IN DEVELOPING COUNTRIES Volume: 14 Issue: 2 Pages: 125-128 DOI: 10.3855/jidc.12600 Published: FEB 2020

Abstract:

As of 28 February 2020, Italy had 888 cases of SARS-CoV-2 infections, with most cases in Northern Italy in the Lombardia and Veneto regions. Travel-related cases were the main source of COVID-19 cases during the early stages of the current epidemic in Italy. The month of February, however, has been dominated by two large clusters of outbreaks in Northern Italy, south of Milan, with mainly local transmission the source of infections. Contact tracing has failed to identify patient zero in one of the outbreaks. As of 28 February 2020, twenty-one cases of COVID-19 have died. Comparison between case fatality rates in China and Italy are identical at 2.3. Additionally, deaths are similar in both countries with fatalities in mostly the elderly with known comorbidities. It will be important to develop point-of-care devices to aid clinicians in stratifying elderly patients as early as possible to determine the potential level of care they will require to improve their chances of survival from COVID-19 disease.

Accession Number: WOS:000519550500002

Article 32 of 37

Seroprevalence of Middle East Respiratory Syndrome Corona Virus in dromedaries and their traders in upper Egypt

Sayed, ASM (Sayed, Amal S. M.); Malek, SS (Malek, Safaa S.); Abushahba, MFN (Abushahba, Mostafa F. N.)

JOURNAL OF INFECTION IN DEVELOPING COUNTRIES Volume: 14 Issue: 2 Pages: 191-198 DOI: 10.3855/jidc.10862 Published: FEB 2020

Abstract:

Introduction: Camel trade in Egypt depends mainly on importation. Seemingly healthy imported camels are responsible for the ingress of serious diseases into Egypt. A striking example of this concerning public health globally is the Middle East respiratory coronavirus (MERS-CoV) which causes case fatalities of over 34%. Here, we determined the seroepidemiological situation of the MERS-CoV in imported camels and their traders in Upper Egypt.

Methodology: Sera of sixty-three dromedaries and twenty-eight camel traders were recruited (January 2015-December 2016). The age, gender, and sampling locality of each sampled camel and human were obtained. Semi-quantitative anti-MERS-CoV IgG ELISAs which utilize the purified spike protein domain S1 antigen of MERS coronavirus (MERS-CoV S1) were used to detect specific IgG antibodies against the virus.
Results: The data showed that 58.73% of imported camels and 25% of traders had antibodies specific to MERS-CoV. Interestingly, like seroreactive camels, all seropositive humans were apparently healthy without any history of developing severe respiratory disease in the 14 days prior to sampling. Having specific antibodies among the examined camel sera was significantly different (P < 0.0001) in relation to various sampling localities, gender and age groups. In contrast, the seropositivity rate of MERS-CoV IgG in humans did not differ significantly by any of the studied factors.

Conclusions: The current study provides the first serological evidence of occupational exposure of humans to MERS-CoV in Africa. Additionally, it reports that imported camels could be implicated in introducing MERS-CoV into Egypt. Accordingly, application of strict control measures to camel importation is a priority.

Accession Number: WOS:000519550500011

Article 33 of 37

**Novel coronavirus (2019-nCoV) early-stage importation risk to Europe, January 2020**

Pullano, G (Pullano, Giulia); Pinotti, F (Pinotti, Francesco); Valdano, E (Valdano, Eugenio); Boelle, PY (Boelle, Pierre-Yves); Poletto, C (Poletto, Chiara); Colizza, V (Colizza, Vittoria)

EUROSURVEILLANCE Volume: 25 Issue: 4 Pages: 2-6 DOI: 10.2807/1560-7917.ES.2020.25.4.2000057 Published: JAN 30 2020

Abstract:

As at 27 January 2020, 42 novel coronavirus (2019-nCoV) cases were confirmed outside China. We estimate the risk of case importation to Europe from affected areas in China via air travel. We consider travel restrictions in place, three reported cases in France, one in Germany. Estimated risk in Europe remains high. The United Kingdom, Germany and France are at highest risk. Importation from Beijing and Shanghai would lead to higher and widespread risk for Europe.

Accession Number: WOS:000510607800001

Article 34 of 37


Riou, J (Riou, Julien); Althaus, CL (Althaus, Christian L.)

EUROSURVEILLANCE Volume: 25 Issue: 4 Pages: 7-11 DOI: 10.2807/1560-7917.ES.2020.25.4.2000058 Published: JAN 30 2020

Abstract:

Since December 2019, China has been experiencing a large outbreak of a novel coronavirus (2019-nCoV) which can cause respiratory disease and severe pneumonia. We estimated the basic reproduction number Ro of 2019-nCoV to be around 2.2 (90% high density interval: 1.4-3.8), indicating the potential for sustained human-to-human transmission. Transmission characteristics
appear to be of similar magnitude to severe acute respiratory syndrome-related coronavirus (SARS-CoV) and pandemic influenza, indicating a risk of global spread.

Accession Number: WOS:000510607800002

**Article 35 of 37**

**Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR**

Corman, VM (Corman, Victor M.); Landt, O (Landt, Olfert); Kaiser, M (Kaiser, Marco); Molenkamp, R (Molenkamp, Richard); Meijer, A (Meijer, Adam); Chu, DKW (Chu, Daniel K. W.); Bleidt, T (Bleicker, Tobias); Brunink, S (Brunink, Sebastian); Schneider, J (Schneider, Julia); Schmidt, ML (Schmidt, Marie Luisa); Mulders, DGJC (Mulders, Daphne G. J. C.); Haagmans, BL (Haagmans, Bart L.); van der Veer, B (van der Veer, Bas); van den Brink, S (van den Brink, Sharon); Wijsman, L (Wijsman, Lisa); Goderski, G (Goderski, Gabriel); Romette, JL (Romette, Jean-Louis); Ellis, J (Ellis, Joanna); Zambon, M (Zambon, Maria); Peiris, M (Peiris, Malik); Goossens, H (Goossens, Herman); Reusken, C (Reusken, Chantal); Koopmans, MPG (Koopmans, Marion P. G.); Drosten, C (Drosten, Christian)

EUROSURVEILLANCE Volume: 25 Issue: 3 Pages: 23-30 DOI: 10.2807/1560-7917.ES.2020.25.3.2000045 Published: JAN 23 2020

**Abstract:**

Background: The ongoing outbreak of the recently emerged novel coronavirus (2019-nCoV) poses a challenge for public health laboratories as virus isolates are unavailable while there is growing evidence that the outbreak is more widespread than initially thought, and international spread through travellers does already occur. Aim: We aimed to develop and deploy robust diagnostic methodology for use in public health laboratory settings without having virus material available. Methods: Here we present a validated diagnostic workflow for 2019-nCoV, its design relying on close genetic relatedness of 2019-nCoV with SARS coronavirus, making use of synthetic nucleic acid technology. Results: The workflow reliably detects 2019-nCoV, and further discriminates 2019-nCoV from SARS-CoV. Through coordination between academic and public laboratories, we confirmed assay exclusivity based on 297 original clinical specimens containing a full spectrum of human respiratory viruses. Control material is made available through European Virus Archive - Global (EVAg), a European Union infrastructure project. Conclusion: The present study demonstrates the enormous response capacity achieved through coordination of academic and public laboratories in national and European research networks.

Accession Number: WOS:000509360400005
Passengers' destinations from China: low risk of Novel Coronavirus (2019-nCoV) transmission into Africa and South America

Haider, N (Haider, Najmul); Yavlinsky, A (Yavlinsky, Alexei); Simons, D (Simons, David); Osman, AY (Osman, Abdinasir Yusuf); Ntoumi, F (Ntoumi, Francine); Zumla, A (Zumla, Alimuddin); Kock, R (Kock, Richard)

EPIDEMIOLOGY AND INFECTION Volume: 148 Article Number: e41 DOI: 10.1017/S0950268820000424 Published: 2020

Abstract:

Novel Coronavirus (2019-nCoV [SARS-COV-2]) was detected in humans during the last week of December 2019 at Wuhan city in China, and caused 24 554 cases in 27 countries and territories as of 5 February 2020. The objective of this study was to estimate the risk of transmission of 2019-nCoV through human passenger air flight from four major cities of China (Wuhan, Beijing, Shanghai and Guangzhou) to the passengers' destination countries. We extracted the weekly simulated passengers' end destination data for the period of 1-31 January 2020 from FLIRT, an online air travel dataset that uses information from 800 airlines to show the direct flight and passengers' end destination. We estimated a risk index of 2019-nCoV transmission based on the number of travellers to destination countries, weighted by the number of confirmed cases of the departed city reported by the World Health Organization (WHO). We ranked each country based on the risk index in four quantiles (4(th) quantile being the highest risk and 1(st) quantile being the lowest risk). During the period, 388 287 passengers were destined for 1297 airports in 168 countries or territories across the world. The risk index of 2019-nCoV among the countries had a very high correlation with the WHO-reported confirmed cases (0.97). According to our risk score classification, of the countries that reported at least one Coronavirus-infected pneumonia (COVID-19) case as of 5 February 2020, 24 countries were in the 4(th) quantile of the risk index, two in the 3(rd) quantile, one in the 2(nd) quantile and none in the 1(st) quantile. Outside China, countries with a higher risk of 2019-nCoV transmission are Thailand, Cambodia, Malaysia, Canada and the USA, all of which reported at least one case. In pan-Europe, UK, France, Russia, Germany and Italy; in North America, USA and Canada; in Oceania, Australia had high risk, all of them reported at least one case. In Africa and South America, the risk of transmission is very low with Ethiopia, South Africa, Egypt, Mauritius and Brazil showing a similar risk of transmission compared to the risk of any of the countries where at least one case is detected. The risk of transmission on 31 January 2020 was very high in neighbouring Asian countries, followed by Europe (UK, France, Russia and Germany), Oceania (Australia) and North America (USA and Canada). Increased public health response including early case recognition, isolation of identified case, contract tracing and targeted airport screening, public awareness and vigilance of health workers will help mitigate the force of further spread to naive countries.

Accession Number: WOS:000518130400001
2019-nCoV (Wuhan virus), a novel Coronavirus: human-to-human transmission, travel-related cases, and vaccine readiness

Ralph, R (Ralph, Robyn); Lew, J (Lew, Jocelyne); Zeng, TS (Zeng, Tiansheng); Francis, M (Francis, Magie); Xue, B (Xue, Bei); Roux, M (Roux, Melissa); Ostadgavahi, AT (Ostadgavahi, Ali Toloue); Rubino, S (Rubino, Salvatore); Dawe, NJ (Dawe, Nicholas J.); Al-Ahdal, MN (Al-Ahdal, Mohammed N.); Kelvin, DJ (Kelvin, David J.); Richardson, CD (Richardson, Christopher D.); Kindrachuk, J (Kindrachuk, Jason); Falzarano, D (Falzarano, Darryl); Kelvin, AA (Kelvin, Alyson A.)

JOURNAL OF INFECTION IN DEVELOPING COUNTRIES Volume: 14 Issue: 1 Pages: 3-+ DOI: 10.3855/jidc.12425 Published: JAN 2020

Abstract:

On 31 December 2019 the Wuhan Health Commission reported a cluster of atypical pneumonia cases that was linked to a wet market in the city of Wuhan, China. The first patients began experiencing symptoms of illness in mid-December 2019. Clinical isolates were found to contain a novel coronavirus with similarity to bat coronaviruses. As of 28 January 2020, there are in excess of 4,500 laboratory-confirmed cases, with > 100 known deaths. As with the SARS-CoV, infections in children appear to be rare. Travel-related cases have been confirmed in multiple countries and regions outside mainland China including Germany, France, Thailand, Japan, South Korea, Vietnam, Canada, and the United States, as well as Hong Kong and Taiwan. Domestically in China, the virus has also been noted in several cities and provinces with cases in all but one provinence. While zoonotic transmission appears to be the original source of infections, the most alarming development is that human-to-human transmission is now prevalent. Of particular concern is that many healthcare workers have been infected in the current epidemic. There are several critical clinical questions that need to be resolved, including how efficient is human-to-human transmission? What is the animal reservoir? Is there an intermediate animal reservoir? Do the vaccines generated to the SARS-CoV or MERS-CoV or their proteins offer protection against 2019-nCoV? We offer a research perspective on the next steps for the generation of vaccines. We also present data on the use of in silico docking in gaining insight into 2019-nCoV Spike-receptor binding to aid in therapeutic development Diagnostic PCR protocols can be found at https://www.who.int/health-topics/coronaviruslaboratory-diagnostics-for-novel-coronavirus.

Accession Number: WOS:000512957400002
RADIOLOGY NUCLEAR MEDICINE MEDICAL IMAGING:
Imaging manifestations and diagnostic value of chest CT of coronavirus disease 2019 (COVID-19) in the Xiaogan area

Wang, K (Wang, K.); Kang, S (Kang, S.); Tian, R (Tian, R.); Zhang, X (Zhang, X.); Wang, Y (Wang, Y.)

CLINICAL RADIOLOGY Volume: 75 Issue: 5 Pages: 341-347 DOI: 10.1016/j.crad.2020.03.004 Published: MAY 2020

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. (C) 2020 The Royal College of Radiologists. Published by Elsevier Ltd. All rights reserved.

Accession Number: WOS:000523562300005
The definite diagnosis of corona virus disease 2019 (COVID-19) is based on the viral isolation or positive result of polymerase chain reaction (PCR) from sputum, or nasal swab, or throat swab. However, the sensitivity to detect COVID-19 of real time (RT)-PCR is reported to be lower than that of chest CT. We report a case of 34-year-old man who was diagnosed as negative for COVID-19 based on the four sequential RT-PCR tests of his pharyngeal swab. Chest CT showed patchy ground-glass opacity on admission, and it rapidly progressed to segmental mixed consolidation and ground-glass opacity 3 days after admission, and it resolved in left upper lobe, but showed multifocal ground-glass opacities 7 days after admission, and they resolved within 2 weeks. The fifth RT-PCR test finally revealed positive results at the fifth day after admission. It is difficult to distinguish COVID-19 pneumonia from other viral pneumonia on CT findings alone; however, we emphasize the utility of chest CT to detect early change of COVID-19 in cases which RT-PCR tests show negative results.

Accession Number: WOS:000524395200001

**Article 3 of 15**

**Chest Radiographic and CT Findings of the 2019 Novel Coronavirus Disease (COVID-19): Analysis of Nine Patients Treated in Korea**

Yoon, SH (Yoon, Soon Ho); Lee, KH (Lee, Kyung Hee); Kim, JY (Kim, Jin Yong); Lee, YK (Lee, Young Kyung); Ko, H (Ko, Hongseok); Kim, KH (Kim, Ki Hwan); Park, CM (Park, Chang Min); Kim, YH (Kim, Yun Hyeon)


**Abstract:**

Objective: This study presents a preliminary report on the chest radiographic and computed tomography (CT) findings of the 2019 novel coronavirus disease (COVID-19) pneumonia in Korea.

Materials and Methods: As part of a multi-institutional collaboration coordinated by the Korean Society of Thoracic Radiology, we collected nine patients with COVID-19 infections who had undergone chest radiography and CT scans. We analyzed the radiographic and CT findings of COVID-19 pneumonia at baseline. Fisher's exact test was used to compare CT findings depending on the shape of pulmonary lesions.

Results: Three of the nine patients (33.3%) had parenchymal abnormalities detected by chest radiography, and most of the abnormalities were peripheral consolidations. Chest CT images showed bilateral involvement in eight of the nine patients, and a unilobar reversed halo sign in the other patient. In total, 77 pulmonary lesions were found, including patchy lesions (39%), large confluent lesions (13%), and small nodular lesions (48%). The peripheral and posterior lung fields were involved in 78% and 67% of the lesions, respectively. The lesions were typically ill-defined and were composed of mixed ground-glass opacities and consolidation or pure ground-glass opacities. Patchy to confluent lesions were primarily distributed in the lower lobes (p = 0.040) and along the pleura (p < 0.001), whereas nodular lesions were primarily distributed along the bronchovascular bundles (p = 0.006).
Conclusion: COVID-19 pneumonia in Korea primarily manifested as pure to mixed ground-glass opacities with a patchy to confluent or nodular shape in the bilateral peripheral posterior lungs. A considerable proportion of patients with COVID-19 pneumonia had normal chest radiographs.

Accession Number: WOS:000523560800011

Article 4 of 15

2019 Novel Coronavirus (COVID-19) Pneumonia: Serial Computed Tomography Findings

Wei, JP (Wei, Jiangping); Xu, HX (Xu, Huaxiang); Xiong, JL (Xiong, Jingliang); Shen, QL (Shen, Qinglin); Fan, B (Fan, Bing); Ye, CL (Ye, Chenglong); Dong, WT (Dong, Wentao); Hu, FF (Hu, Fangfang)


Abstract:

From December 2019, Coronavirus disease 2019 (COVID-19) pneumonia (formerly known as the 2019 novel Coronavirus [2019nCoV]) broke out in Wuhan, China. In this study, we present serial CT findings in a 40-year-old female patient with COVID-19 pneumonia who presented with the symptoms of fever, chest tightness, and fatigue. She was diagnosed with COVID-19 infection confirmed by real-time reverse-transcriptase-polymerase chain reaction. CT showed rapidly progressing peripheral consolidations and ground-glass opacities in both lungs. After treatment, the lesions were shown to be almost absorbed leaving the fibrous lesions.

Article 5 of 15

Proposal of a low-dose, long-pitch, dual-source chest CT protocol on third-generation dual-source CT using a tin filter for spectral shaping at 100 kVp for Coronavirus Disease 2019 (COVID-19) patients: a feasibility study

Agostini, A (Agostini, Andrea); Floridi, C (Floridi, Chiara); Borgheresi, A (Borgheresi, Alessandra); Badaloni, M (Badaloni, Myriam); Pirani, PE (Pirani, Paolo Esposto); Terilli, F (Terilli, Filippo); Ottaviani, L (Ottaviani, Letizia); Giovagnoni, A (Giovagnoni, Andrea)

RADIOLOGIA MEDICA  DOI: 10.1007/s11547-020-01179-x  Early Access Date: APR 2020

Abstract:

Aim To subjectively and objectively evaluate the feasibility and diagnostic reliability of a low-dose, long-pitch dual-source chest CT protocol on third-generation dual-source CT (DSCT) with spectral shaping at 100Sn kVp for COVID-19 patients. Materials and methods Patients with COVID-19 and positive swab-test undergoing to a chest CT on third-generation DSCT were included. The imaging protocol included a dual-energy acquisition (HD-DECT, 90/150Sn kVp) and fast, low-dose, long-pitch CT, dual-source scan at 100Sn kVp (LDCT). Subjective (Likert Scales) and objective (signal-to-noise and contrast-to-noise ratios, SNR and CNR) analyses were performed; radiation dose and acquisition times were
Recorded. Nonparametric tests were used. Results The median radiation dose was lower for LDCT than HD-DECT (Effective dose, ED: 0.28 mSv vs. 3.28 mSv, p = 0.016). LDCT had median acquisition time of 0.62 s (vs 2.02 s, p = 0.016). SNR and CNR were significantly different in several thoracic structures between HD-DECT and LDCT, with exception of lung parenchyma. Qualitative analysis demonstrated significant reduction in motion artifacts (p = 0.031) with comparable diagnostic reliability between HD-DECT and LDCT. Conclusions Ultra-low-dose, dual-source, fast CT protocol provides highly diagnostic images for COVID-19 with potential for reduction in dose and motion artifacts.

Accession Number: WOS:000522906000001

**Article 6 of 15**

**Corona Virus International Public Health Emergencies: Implications for Radiology Management**

Zhang, HW (Zhang, Han-Wen); Yu, J (Yu, Juan); Xu, HJ (Xu, Hua-Jian); Lei, Y (Lei, Yi); Pu, ZH (Pu, Zu-Hui); Dai, WC (Dai, Wei-Cai); Lin, F (Lin, Fan); Wang, YL (Wang, Yu-Li); Wu, XL (Wu, Xiao-Liu); Liu, LH (Liu, Li-Hong); Li, M (Li, Min); Mo, YQ (Mo, Yong-Qian); Zhang, H (Zhang, Hong); Luo, SP (Luo, Si-Ping); Chen, H (Chen, Huan); Lyu, GW (Lyu, Gui-Wen); Zhou, ZG (Zhou, Zhao-Guang); Liu, WM (Liu, Wei-Min); Liu, XL (Liu, Xiao-Lei); Song, HY (Song, Hai-Yan); Chen, FZ (Chen, Fu-Zhen); Zeng, L (Zeng, Liang); Zhong, H (Zhong, Hua); Guo, TT (Guo, Ting-Ting); Hu, YQ (Hu, Ya-Qiong); Yang, XX (Yang, Xin-Xin); Liu, PN (Liu, Pin-Ni); Li, DF (Li, Ding-Fu)

ACADEMIC RADIOLOGY Volume: 27 Issue: 4 Pages: 463-467 DOI: 10.1016/j.acra.2020.02.003 Published: APR 2020

**Abstract:**

The outbreak of 2019 novel coronavirus (2019-nCoV) pneumonia was reported in Wuhan, Hubei Province, China in December 2019 and has spread internationally. This article discusses how radiology departments can most effectively respond to this public health emergency.

Accession Number: WOS:000520893600004

**Article 7 of 15**

**CT Imaging Features of 2019 Novel Coronavirus (2019-nCoV)**

Chung, M (Chung, Michael); Bernheim, A (Bernheim, Adam); Mei, XY (Mei, Xueyan); Zhang, N (Zhang, Ning); Huang, MQ (Huang, Mingqian); Zeng, XJ (Zeng, Xianjun); Cui, JF (Cui, Jiufa); Xu, WJ (Xu, Wenjian); Yang, Y (Yang, Yang); Fayad, ZA (Fayad, Zahi A.); Jacobi, A (Jacobi, Adam); Li, KW (Li, Kunwei); Li, SL (Li, Shaolin); Shan, H (Shan, Hong)

RADIOLOGY Volume: 295 Issue: 1 Pages: 202-207 DOI: 10.1148/radiol.2020200230 Published: APR 2020

**Abstract:**
In this retrospective case series, chest CT scans of 21 symptomatic patients from China infected with the 2019 novel coronavirus (2019-nCoV) were reviewed, with emphasis on identifying and characterizing the most common findings. Typical CT findings included bilateral pulmonary parenchymal ground-glass and consolidative pulmonary opacities, sometimes with a rounded morphology and a peripheral lung distribution. Notably, lung cavitation, discrete pulmonary nodules, pleural effusions, and lymphadenopathy were absent. Follow-up imaging in a subset of patients during the study time window often demonstrated mild or moderate progression of disease, as manifested by increasing extent and density of lung opacities. (C) RSNA, 2020

Accession Number: WOS:000520166000034

Article 8 of 15

Emerging 2019 Novel Coronavirus (2019-nCoV) Pneumonia

Song, FX (Song, Fengxiang); Shi, NN (Shi, Nannan); Shan, F (Shan, Fei); Zhang, ZY (Zhang, Zhiyong); Shen, J (Shen, Jie); Lu, HZ (Lu, Hongzhou); Ling, Y (Ling, Yun); Jiang, YB (Jiang, Yebin); Shi, YX (Shi, Yuxin)

RADIOLOGY Volume: 295 Issue: 1 Pages: 210-217 DOI: 10.1148/radiol.2020200274 Published: APR 2020

Abstract:

Background: The chest CT findings of patients with 2019 Novel Coronavirus (2019-nCoV) pneumonia have not previously been described in detail.

Purpose: To investigate the clinical, laboratory, and imaging findings of emerging 2019-nCoV pneumonia in humans.

Materials and Methods: Fifty-one patients (25 men and 26 women; age range 16-76 years) with laboratory-confirmed 2019-nCoV infection by using real-time reverse transcription polymerase chain reaction underwent thin-section CT. The imaging findings, clinical data, and laboratory data were evaluated.

Results: Fifty of 51 patients (98%) had a history of contact with individuals from the endemic center in Wuhan, China. Fever (49 of 51, 96%) and cough (24 of 51, 47%) were the most common symptoms. Most patients had a normal white blood cell count (37 of 51, 73%), neutrophil count (44 of 51, 86%), and either normal (17 of 51, 35%) or reduced (33 of 51, 65%) lymphocyte count. CT images showed pure ground-glass opacity (GGO) in 39 of 51 (77%) patients and GGO with reticular and/or interlobular septal thickening in 38 of 51 (75%) patients. GGO with consolidation was present in 30 of 51 (59%) patients, and pure consolidation was present in 28 of 51 (55%) patients. Forty-four of 51 (86%) patients had bilateral lung involvement, while 41 of 51 (80%) involved the posterior part of the lungs and 44 of 51 (86%) were peripheral. There were more consolidated lung lesions in patients 5 days or more from disease onset to CT scan versus 4 days or fewer (431 of 712 lesions vs 129 of 612 lesions; P < .001). Patients older than 50 years had more consolidated lung lesions than did those aged 50 years or younger (212 of 470 vs 198 of 854; P < .001). Follow-up CT in 13 patients showed improvement in seven (54%) patients and progression in four (31%) patients.

Conclusion: Patients with fever and/or cough and with conspicuous ground-glass opacity lesions in the peripheral and posterior lung on CT images, combined with normal or decreased white blood
cells and a history of epidemic exposure, are highly suspected of having 2019 Novel Coronavirus (2019-nCoV) pneumonia. (C) RSNA, 2020

Accession Number: WOS:000520166000036

Article 9 of 15

Ultra-high-resolution computed tomography can demonstrate alveolar collapse in novel coronavirus (COVID-19) pneumonia

Iwasawa, T (Iwasawa, Tae); Sato, M (Sato, Midori); Yamaya, T (Yamaya, Takafumi); Sato, Y (Sato, Yozo); Uchida, Y (Uchida, Yoshinori); Kitamura, H (Kitamura, Hideya); Hagiwara, E (Hagiwara, Eri); Komatsu, S (Komatsu, Shigeru); Utsunomiya, D (Utsunomiya, Daisuke); Ogura, T (Ogura, Takashi)

JAPANESE JOURNAL OF RADIOLOGY DOI: 10.1007/s11604-020-00956-y Early Access Date: MAR 2020

Abstract:

Purpose To review the chest computed tomography (CT) findings on the ultra-high-resolution CT (U-HRCT) in patients with the Novel coronavirus disease 2019 (COVID-19). Materials and Methods In February 2020, six consecutive patients with COVID-19 pneumonia (median age, 69 years) underwent U-HR CT imaging. U-HR-CT has a larger matrix size of 1024 x 1024 thinner slice thickness of 0.25 mm and can demonstrate terminal bronchioles in the normal lungs; as a result, Reid's secondary lobules and their abnormalities can be identified. The distribution and hallmarks (ground-glass opacity, consolidation with or without architectural distortion, linear opacity, crazy paving) of the lung opacities on U-HRCT were visually evaluated on a 1 K monitor by two experienced reviewers. The CT lung volume was measured, and the ratio of the measured lung volume to the predicted total lung capacity (predTLC) based on sex, age and height was calculated. Results All cases showed crazy paving pattern in U-HRCT. In these lesions, the secondary lobules were smaller than those in the un-affected lungs. CT lung volume decreased in two cases comparing predTLC. Conclusion U-HRCT can evaluate not only the distribution and hallmarks of COVID-19 pneumonia but also visualize local lung volume loss.

Accession Number: WOS:000522693200002

Article 10 of 15

Diagnostic performance of chest CT to differentiate COVID-19 pneumonia in non-high-epidemic area in Japan

Himoto, Y (Himoto, Yuki); Sakata, A (Sakata, Akihiko); Kirita, M (Kirita, Mitsuhiro); Hiroi, T (Hiroi, Takashi); Kobayashi, K (Kobayashi, Ken-ichiro); Kubo, K (Kubo, Kenji); Kim, H (Kim, Hyunjin); Nishimoto, A (Nishimoto, Azusa); Maeda, C (Maeda, Chikara); Kawamura, A (Kawamura, Akira); Komiya, N (Komiya, Nobuhiro); Umeoka, S (Umeoka, Shigeaki)

JAPANESE JOURNAL OF RADIOLOGY DOI: 10.1007/s11604-020-00958-w Early Access Date: MAR 2020

Abstract:
Purpose To evaluate the diagnostic performance of chest CT to differentiate coronavirus disease 2019 (COVID-19) pneumonia in non-high-epidemic area in Japan. Materials and methods This retrospective study included 21 patients clinically suspected COVID-19 pneumonia and underwent chest CT more than 3 days after the symptom onset: six patients confirmed COVID-19 pneumonia by real-time reverse-transcription polymerase chain reaction (RT-PCR) and 15 patients proved uninfected. Using a Likert scale and its receiver operating characteristic curve analysis, two radiologists (R1/R2) evaluated the diagnostic performance of the five CT criteria: (1) ground glass opacity (GGO)-predominant lesions, (2) GGO- and peripheral-predominant lesions, (3) bilateral GGO-predominant lesions; (4) bilateral GGO- and peripheral-predominant lesions, and (5) bilateral GGO- and peripheral-predominant lesions without nodules, airway abnormalities, pleural effusion, and mediastinal lymphadenopathy. Results All patients confirmed COVID-19 pneumonia had bilateral GGO- and peripheral-predominant lesions without airway abnormalities, mediastinal lymphadenopathy, and pleural effusion. The five CT criteria showed moderate to excellent diagnostic performance with area under the curves (AUCs) ranging 0.77-0.88 for R1 and 0.78-0.92 for R2. The criterion (e) showed the highest AUC. Conclusion Chest CT would play a supplemental role to differentiate COVID-19 pneumonia from other respiratory diseases presenting with similar symptoms in a clinical setting.

Accession Number: WOS:000522587400001

Article 11 of 15

CT image visual quantitative evaluation and clinical classification of coronavirus disease (COVID-19)

Li, KW (Li, Kunwei); Fang, YJ (Fang, Yijie); Li, WJ (Li, Wenjuan); Pan, CX (Pan, Cunxue); Qin, PX (Qin, Peixin); Zhong, YH (Zhong, Yinghua); Liu, XG (Liu, Xueguo); Huang, MQ (Huang, Mingqian); Liao, YT (Liao, Yuting); Li, SL (Li, Shaolin)

EUROPEAN RADIOLOGY DOI: 10.1007/s00330-020-06817-6 Early Access Date: MAR 2020

Abstract:

Objectives To explore the relationship between the imaging manifestations and clinical classification of COVID-19. Methods We conducted a retrospective single-center study on patients with COVID-19 from Jan. 18, 2020 to Feb. 7, 2020 in Zhuhai, China. Patients were divided into 3 types based on Chinese guideline: mild (patients with minimal symptoms and negative CT findings), common, and severe-critical (patients with positive CT findings and different extent of clinical manifestations). CT visual quantitative evaluation was based on summing up the acute lung inflammatory lesions involving each lobe, which was scored as 0 (0%), 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%), respectively. The total severity score (TSS) was reached by summing the five lobe scores. The consistency of two observers was evaluated. The TSS was compared with the clinical classification. ROC was used to test the diagnosis ability of TSS for severe-critical type. Results This study included 78 patients, 38 males and 40 females. There were 24 mild (30.8%), 46 common (59.0%), and 8 severe-critical (10.2%) cases, respectively. The median TSS of severe-critical-type group was significantly higher than common type (p < 0.001). The ICC value of the two observers was 0.976 (95% CI 0.962-0.985). ROC analysis showed the area under the curve (AUC) of TSS for diagnosing severe-critical type was 0.918. The TSS cutoff of 7.5 had 82.6% sensitivity and 100% specificity. Conclusions The proportion of clinical mild-type patients with
COVID-19 was relatively high; CT was not suitable for independent screening tool. The CT visual quantitative analysis has high consistency and can reflect the clinical classification of COVID-19.

Accession Number: WOS:000521779400001

Article 12 of 15

COVID-19 pneumonia: infection control protocol inside computed tomography suites

Nakajima, K (Nakajima, Kento); Kato, H (Kato, Hideaki); Yamashiro, T (Yamashiro, Tsuneo); Izumi, T (Izumi, Toshiharu); Takeuchi, I (Takeuchi, Ichiro); Nakajima, H (Nakajima, Hideaki); Utsunomiya, D (Utsunomiya, Daisuke)

JAPANESE JOURNAL OF RADIOLOGY DOI: 10.1007/s11604-020-00948-y Early Access Date: MAR 2020

Abstract:

A novel coronavirus (severe acute respiratory syndrome coronavirus 2) causes a cluster of pneumonia cases in Wuhan, China. It spread rapidly and globally. CT imaging is helpful for the evaluation of the novel coronavirus disease 2019 (COVID-19) pneumonia. Infection control inside the CT suites is also important to prevent hospital-related transmission of COVID-19. We present our experience with infection control protocol for COVID-19 inside the CT suites.

Accession Number: WOS:000520700700002

Article 13 of 15

Chest computed tomography in children with COVID-19 respiratory infection

Li, W (Li, Wei); Cui, HQ (Cui, Huaqian); Li, KW (Li, Kunwei); Fang, YJ (Fang, Yijie); Li, SL (Li, Shaolin)

PEDIATRIC RADIOLOGY DOI: 10.1007/s00247-020-04656-7 Early Access Date: MAR 2020

Abstract:

Background Infection with COVID-19 is currently rare in children. Objective To describe chest CT findings in children with COVID-19. Materials and methods We studied children at a large tertiary-care hospital in China, during the period from 28 January 2019 to 8 February 2020, who had positive reverse transcriptase polymerase chain reaction (RT-PCR) for COVID-19. We recorded findings at any chest CT performed in the included children, along with core clinical observations. Results We included five children from 10 months to 6 years of age (mean 3.4 years). All had had at least one CT scan after admission. Three of these five had CT abnormality on the first CT scan (at 2 days, 4 days and 9 days, respectively, after onset of symptoms) in the form of patchy ground-glass opacities; all normalised during treatment. Conclusion Compared to reports in adults, we found similar but more modest lung abnormalities at CT in our small paediatric cohort.

Accession Number: WOS:000520698300001
Article 14 of 15

**F-18-FDG PET/CT findings of COVID-19: a series of four highly suspected cases**

Qin, CX (Qin, Chunxia); Liu, F (Liu, Fang); Yen, TC (Yen, Tzu-Chen); Lan, XL (Lan, Xiaoli)

EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING Volume: 47 Issue: 5 Pages: 1281-1286 DOI: 10.1007/s00259-020-04734-w Early Access Date: FEB 2020 Published: MAY 2020

**Abstract:**

Purpose The aim of this case series is to illustrate the F-18-FDG PET/CT findings of patients with acute respiratory disease caused by COVID-19 in Wuhan, Hubei province of China. Methods We describe the F-18-FDG PET/CT results from four patients who were admitted to the hospital with respiratory symptoms and fever between January 13 and January 20, 2020, when the COVID-19 outbreak was still unrecognized and the virus infectivity was unknown. A retrospective review of the patients’ medical history, clinical and laboratory data, as well as imaging findings strongly suggested a diagnosis of COVID-19. Results All patients had peripheral ground-glass opacities and/or lung consolidations in more than two pulmonary lobes. Lung lesions were characterized by a high F-18-FDG uptake and there was evidence of lymph node involvement. Conversely, disseminated disease was absent, a finding suggesting that COVID-19 has pulmonary tropism. Conclusions Although F-18-FDG PET/CT cannot be routinely used in an emergency setting and is generally not recommended for infectious diseases, our pilot data shed light on the potential clinical utility of this imaging technique in the differential diagnosis of complex cases.

Accession Number: WOS:000517419500001

Article 15 of 15

**Initial CT findings and temporal changes in patients with the novel coronavirus pneumonia (2019-nCoV): a study of 63 patients in Wuhan, China**

Pan, YY (Pan, Yueying); Guan, HX (Guan, Hanxiong); Zhou, SC (Zhou, Shuchang); Wang, YJ (Wang, Yuji); Li, Q (Li, Qian); Zhu, TT (Zhu, Tingting); Hu, QJ (Hu, Qiongjie); Xia, LM (Xia, Liming)

EUROPEAN RADIOLOGY DOI: 10.1007/s00330-020-06731-x Early Access Date: FEB 2020

**Abstract:**

Objectives The purpose of this study was to observe the imaging characteristics of the novel coronavirus pneumonia. Methods Sixty-three confirmed patients were enrolled from December 30, 2019 to January 31, 2020. High-resolution CT (HRCT) of the chest was performed. The number of affected lobes, ground glass nodules (GGO), patchy/punctate ground glass opacities, patchy consolidation, fibrous stripes and irregular solid nodules in each patient’s chest CT image were recorded. Additionally, we performed imaging follow-up of these patients. Results CT images of 63 confirmed patients were collected. M/F ratio: 33/30. The mean age was 44.9 +/- 15.2 years. The mean number of affected lobes was 3.3 +/- 1.8. Nineteen (30.2%) patients had one affected lobe, five (7.9%) patients had two affected lobes, four (6.3%) patients had three affected lobes, seven
(11.1%) patients had four affected lobes while 28 (44.4%) patients had 5 affected lobes. Fifty-four (85.7%) patients had patchy/punctate ground glass opacities, 14 (22.2%) patients had GGO, 12 (19.0%) patients had patchy consolidation, 11 (17.5%) patients had fibrous stripes and 8 (12.7%) patients had irregular solid nodules. Fifty-four (85.7%) patients progressed, including single GGO increased, enlarged and consolidated; fibrous stripe enlarged, while solid nodules increased and enlarged. Conclusions Imaging changes in novel viral pneumonia are rapid. The manifestations of the novel coronavirus pneumonia are diverse. Imaging changes of typical viral pneumonia and some specific imaging features were observed. Therefore, we need to strengthen the recognition of image changes to help clinicians to diagnose quickly and accurately.

Accession Number: WOS:000516098100004
MULTIDISCIPLINARY SCIENCES:
Article 1 of 2

Epidemiological data from the COVID-19 outbreak, real-time case information

Xu, B (Xu, Bo); Gutierrez, B (Gutierrez, Bernardo); Mekaru, S (Mekaru, Sumiko); Sewalk, K (Sewalk, Kara); Goodwin, L (Goodwin, Lauren); Loskill, A (Loskill, Alyssa); Cohn, EL (Cohn, Emily L.); Hswen, Y (Hswen, Yulin); Hill, SC (Hill, Sarah C.); Cobo, MM (Cobo, Maria M.); Zarebski, AE (Zarebski, Alexander E.); Li, SR (Li, Sabrina); Wu, CH (Wu, Chieh-Hsi); Hulland, E (Hulland, Erin); Morgan, JD (Morgan, Julia D.); Wang, L (Wang, Lin); O'Brien, K (O'Brien, Katelynn); Scarpino, SV (Scarpino, Samuel V.); Brownstein, JS (Brownstein, John S.); Pybus, OG (Pybus, Oliver G.); Pigott, DM (Pigott, David M.); Kraemer, MUG (Kraemer, Moritz U. G.)

SCIENTIFIC DATA Volume: 7 Issue: 1 Article Number: 106 DOI: 10.1038/s41597-020-0448-0 Published: MAR 24 2020

Abstract:

Cases of a novel coronavirus were first reported in Wuhan, Hubei province, China, in December 2019 and have since spread across the world. Epidemiological studies have indicated human-to-human transmission in China and elsewhere. To aid the analysis and tracking of the COVID-19 epidemic we collected and curated individual-level data from national, provincial, and municipal health reports, as well as additional information from online reports. All data are geo-coded and, where available, include symptoms, key dates (date of onset, admission, and confirmation), and travel history. The generation of detailed, real-time, and robust data for emerging disease outbreaks is important and can help to generate robust evidence that will support and inform public health decision making.

Accession Number: WOS:000521517200001

Article 2 of 2

Cryo-EM structure of the 2019-nCoV spike in the prefusion conformation

Wrapp, D (Wrapp, Daniel); Wang, NS (Wang, Nianshuang); Corbett, KS (Corbett, Kizzmekia S.); Goldsmith, JA (Goldsmith, Jory A.); Hsieh, CL (Hsieh, Ching-Lin); Abiona, O (Abiona, Olubukola); Graham, BS (Graham, Barney S.); McLellan, JS (McLellan, Jason S.)

SCIENCE Volume: 367 Issue: 6483 Pages: 1260-+ DOI: 10.1126/science.abb2507 Published: MAR 13 2020

Abstract:

The outbreak of a novel coronavirus (2019-nCoV) represents a pandemic threat that has been declared a public health emergency of international concern. The CoV spike (S) glycoprotein is a key target for vaccines, therapeutic antibodies, and diagnostics. To facilitate medical countermeasure development, we determined a 3.5-angstrom-resolution cryo-electron microscopy structure of the 2019-nCoV S trimer in the prefusion conformation. The predominant state of the trimer has one of the three receptor-binding domains (RBDs) rotated up in a receptor-accessible conformation. We also provide biophysical and structural evidence that the 2019-nCoV S protein binds angiotensin-converting enzyme 2 (ACE2) with higher affinity than does severe acute respiratory syndrome (SARS)-CoV S. Additionally, we tested several published SARS-CoV RBD-specific monoclonal antibodies and found that they do not have appreciable binding to 2019-nCoV
S, suggesting that antibody cross-reactivity may be limited between the two RBDs. The structure of 2019-nCoV S should enable the rapid development and evaluation of medical countermeasures to address the ongoing public health crisis.

Accession Number: WOS:000520023800044
MEDICINE RESEARCH
EXPERIMENTAL :
Article 1 of 12

Significance of clinical phenomes of patients with COVID-19 infection: A learning from 3795 patients in 80 reports

Zhang, LL (Zhang, Linlin); Wang, DNC (Wang, Diane C.); Huang, QH (Huang, Qihong); Wang, XD (Wang, Xiangdong)

CLINICAL AND TRANSLATIONAL MEDICINE DOI: 10.1002/ctm2.17 Early Access Date: APR 2020

Abstract:

A new coronavirus SARS-CoV-2 has caused outbreaks in multiple countries and the number of cases is rapidly increasing through human-to-human transmission. Clinical phenomes of patients with SARS-CoV-2 infection are critical in distinguishing it from other respiratory infections. The extent and characteristics of those phenomes varied depending on the severities of the infection, for example, beginning with fever or a mild cough, progressed with signs of pneumonia, and worsened with severe or even fatal respiratory difficulty in acute respiratory distress syndrome. We summarized clinical phenomes of 3795 patients with COVID-19 based on 80 published reports from the onset of outbreak to March 2020 to emphasize the importance and specificity of those phenomes in diagnosis and treatment of infection, and evaluate the impact on medical services. The data show that the incidence of male patients was higher than that of females and the level of C-reactive protein was increased as well as most patients’ imaging included ground-glass opacity. Clinical phenomes of SARS-CoV-2 infection were compared with those of SARS-CoV and MERS-CoV infections. There is an urgent need to develop an artificial intelligence-based machine learning capacity to analyze and integrate radiomics- or imaging-based, patient-based, clinician-based, and molecular measurements-based data to fight the outbreak of COVID-19 and enable more efficient responses to unknown infections in future.

Accession Number: WOS:000523201500001

Article 2 of 12

Acute lung injury in patients with COVID-19 infection

Li, L (Li, Liyang); Huang, QH (Huang, Qihong); Wang, DC (Wang, Diane C.); Ingbar, DH (Ingbar, David H.); Wang, XD (Wang, Xiangdong)

CLINICAL AND TRANSLATIONAL MEDICINE DOI: 10.1002/ctm2.16 Early Access Date: MAR 2020

Abstract:

During the 2020 Spring Festival in China, the outbreak of a novel coronavirus, named COVID-19 by WHO, brought on a worldwide panic. According to the clinical data of infected patients, radiologic evidence of lung edema is common and deserves clinical attention. Lung edema is a manifestation of acute lung injury (ALI) and may progress to hypoxemia and potentially acute respiratory distress syndrome (ARDS). Patients diagnosed with ARDS have poorer prognosis and potentially higher mortality. Although no effective treatment is formally approved for COVID-19 infection, support of ventilation with oxygen therapy and sometimes mechanical ventilation is often required. Treatment with systemic and/or local glucocorticoids might be helpful to alleviate the
pulmonary inflammation and edema, which may decrease the development and/or consequences of ARDS. In this article, we focus on the lung edema and ALI of patients with this widely transmitted COVID-19 infection in order to provide clinical indications and potential therapeutic targets for clinicians and researchers.

Accession Number: WOS:000522506100001

Article 3 of 12


Li, YK (Li, Yang-Kai); Peng, S (Peng, Shu); Li, LQ (Li, Le-Qun); Wang, Q (Wang, Qi); Ping, W (Ping, Wei); Zhang, N (Zhang, Ni); Fu, XN (Fu, Xiang-Ning)

CURRENT MEDICAL SCIENCE DOI: 10.1007/s11596-020-2176-2 Early Access Date: MAR 2020

Abstract:
The outbreak of corona virus disease 2019 (Covid-19) imposes a major challenge in managing patients undergoing surgical operation. In this study, we analyzed clinical and transmission features of 25 cases of Covid-19 from a single thoracic department, including 13 patients and 12 health care staff. There were 13 males and 12 females. The median age of the patients was 61 (range: 51 to 69) years. The median age of the health care staff was 35 (range: 22 to 51) years. By the end of follow-up date (Mar. 3, 2020), there were 16 non-severe cases (64%) and 9 severe cases (36%), 5 cases were dead (20%). Nineteen (76%) of the infected cases were confirmed by SARS-CoV-2 nucleic acid test, the rest were clinically diagnosed as suspected Covid-19 cases, and 19 (76%) of the infected cases had positive exposure history. We found that COPD was significantly associated with severity and death (P=0.040, and P=0.038, respectively), and chest operation was significantly associated with death for Covid-19 patients (P=0.039). A potential "super spreader" may be the source of the transmission before the implementation of quarantine and comprehensive protection. It was concluded that Covid-19 is associated with poor prognosis for patients undergoing thoracic operation, especially for those with COPD. Implementation of comprehensive protective measures is important to control nosocomial infection.

Accession Number: WOS:000522568800001

Article 4 of 12

COVID-19 containment: China provides important lessons for global response

Zhang, SX (Zhang, Shuxian); Wang, ZZ (Wang, Zezhou); Chang, RJ (Chang, Ruijie); Wang, HW (Wang, Huwen); Xu, C (Xu, Chen); Yu, XY (Yu, Xiaoyue); Tsamlag, L (Tsamlag, Lhakpa); Dong, YQ (Dong, Yinqiao); Wang, H (Wang, Hui); Cai, Y (Cai, Yong)

FRONTIERS OF MEDICINE DOI: 10.1007/s11684-020-0766-9 Early Access Date: MAR 2020

Abstract:
The world must act fast to contain wider international spread of the epidemic of COVID-19 now. The unprecedented public health efforts in China have contained the spread of this new virus. Measures taken in China are currently proven to reduce human-to-human transmission successfully. We summarized the effective intervention and prevention measures in the fields of public health response, clinical management, and research development in China, which may provide vital lessons for the global response. It is really important to take collaborative actions now to save more lives from the pandemic of COVID-19.

Accession Number: WOS:000521713100001

Article 5 of 12

Protecting healthcare personnel from 2019-nCoV infection risks: lessons and suggestions

Zhang, ZR (Zhang, Zhiruo); Liu, SL (Liu, Shelan); Xiang, M (Xiang, Mi); Li, SJ (Li, Shijian); Zhao, DH (Zhao, Dahai); Huang, CL (Huang, Chaolin); Chen, SJ (Chen, Saijuan)

FRONTIERS OF MEDICINE DOI: 10.1007/s11684-020-0765-x Early Access Date: MAR 2020

Abstract:

The outbreak of a novel Coronavirus disease (COVID-19, caused by the 2019-nCoV infection) in December 2019 is one of the most severe public health emergencies since the founding of People's Republic of China in 1949. Healthcare personnel (HCP) nationwide are facing heavy workloads and high risk of infection, especially those who care for patients at the epicenter of the outbreak, Hubei Province. Sadly, as of February 20, 2020, over two thousand COVID-19 cases are confirmed among HCP from 476 hospitals nationwide, with nearly 90% of them from Hubei Province. Based on literature search and interviews with some HCP working at Wuhan, capital city of Hubei, we have summarized some of the effective measures taken to reduce infection among HCP, and also made suggestions for improving occupational safety during an infectious disease outbreak. The experience and lessons learned should be a valuable asset for international health community to contain the ongoing COVID-19 epidemic around the world.

Accession Number: WOS:000521713500001

Article 6 of 12

Social Capital and Sleep Quality in Individuals Who Self-Isolated for 14 Days During the Coronavirus Disease 2019 (COVID-19) Outbreak in January 2020 in China

Xiao, H (Xiao, Han); Zhang, Y (Zhang, Yan); Kong, DS (Kong, Desheng); Li, SY (Li, Shiyue); Yang, NX (Yang, Ningxi)

MEDICAL SCIENCE MONITOR Volume: 26 Article Number: e923921 DOI: 10.12659/MSM.923921 Published: MAR 20 2020

Abstract:
Background: From the end of December 2019, coronavirus disease 2019 (COVID-19) began to spread in central China. Social capital is a measure of social trust, belonging, and participation. This study aimed to investigate the effects of social capital on sleep quality and the mechanisms involved in people who self-isolated at home for 14 days in January 2020 during the COVID-19 epidemic in central China.

Methods: Individuals (n=170) who self-isolated at home for 14 days in central China, completed self-reported questionnaires on the third day of isolation. Individual social capital was assessed using the Personal Social Capital Scale 16 (PSCI-16) questionnaire. Anxiety was assessed using the Self-Rating Anxiety Scale (SAS) questionnaire, stress was assessed using the Stanford Acute Stress Reaction (SASR) questionnaire, and sleep was assessed using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. Path analysis was performed to evaluate the relationships between a dependent variable (social capital) and two or more independent variables, using Pearson's correlation analysis and structural equation modeling (SEM).

Results: Low levels of social capital were associated with increased levels of anxiety and stress, but increased levels of social capital were positively associated with increased quality of sleep. Anxiety was associated with stress and reduced sleep quality, and the combination of anxiety and stress reduced the positive effects of social capital on sleep quality.

Conclusion: During a period of individual self-isolation during the COVID-19 virus epidemic in central China, increased social capital improved sleep quality by reducing anxiety and stress.

Accession Number: WOS:000521144800001

Article 7 of 12

Estimating clinical severity of COVID-19 from the transmission dynamics in Wuhan, China

Wu, JT (Wu, Joseph T.); Leung, K (Leung, Kathy); Bushman, M (Bushman, Mary); Kishore, N (Kishore, Nishant); Niehus, R (Niehus, Rene); de Salazar, PM (de Salazar, Pablo M.); Cowling, BJ (Cowling, Benjamin J.); Lipsitch, M (Lipsitch, Marc); Leung, GM (Leung, Gabriel M.)

NATURE MEDICINE DOI: 10.1038/s41591-020-0822-7 Early Access Date: MAR 2020

Abstract:

As of 29 February 2020 there were 79,394 confirmed cases and 2,838 deaths from COVID-19 in mainland China. Of these, 48,557 cases and 2,169 deaths occurred in the epicenter, Wuhan. A key public health priority during the emergence of a novel pathogen is estimating clinical severity, which requires properly adjusting for the case ascertainment rate and the delay between symptoms onset and death. Using public and published information, we estimate that the overall symptomatic case fatality risk (the probability of dying after developing symptoms) of COVID-19 in Wuhan was 1.4% (0.9-2.1%), which is substantially lower than both the corresponding crude or naive confirmed case fatality risk (2,169/48,557 = 4.5%) and the approximator(1) of deaths/deaths + recoveries (2,169/2,169 + 17,572 = 11%) as of 29 February 2020. Compared to those aged 30-59 years, those aged below 30 and above 59 years were 0.6 (0.3-1.1) and 5.1 (4.2-6.1) times more likely to die after developing symptoms. The risk of symptomatic infection increased with age (for example, at similar to 4% per year among adults aged 30-60 years).

Accession Number: WOS:000520612200001
Article 8 of 12

Combination of western medicine and Chinese traditional patent medicine in treating a family case of COVID-19 in Wuhan

Ni, L (Ni, Li); Zhou, L (Zhou, Ling); Zhou, M (Zhou, Min); Zhao, JP (Zhao, Jianping); Wang, DW (Wang, Dao Wen)

FRONTIERS OF MEDICINE DOI: 10.1007/s11684-020-0757-x  Early Access Date: MAR 2020

Abstract:

In December 2019, an outbreak of novel Coronavirus (2019-nCoV) occurred in Wuhan, Hubei Province, China. By February 14, 2020, it has led to 66 492 confirmed patients in China and high mortality up to similar to 2.96% (1123/37 914) in Wuhan. Here we report the first family case of coronavirus disease 2019 (COVID-19) confirmed in Wuhan and treated using the combination of western medicine and Chinese traditional patent medicine Shuanghuanglian oral liquid (SHL). This report describes the identification, diagnosis, clinical course, and management of three cases from a family, suggests the expected therapeutic effects of SHL on COVID-19, and warrants further clinical trials.

Accession Number: WOS:000520677100001

Article 9 of 12

A quickly, effectively screening process of novel coronavirus disease 2019 (COVID-19) in children in Shanghai, China

Shi, Y (Shi, Yu); Wang, XS (Wang, Xiangshi); Liu, GB (Liu, Gengbao); Zhu, QR (Zhu, Qirong); Wan, JS (Wan, Jianshe); Yu, H (Yu, Hui); Wang, CQ (Wang, Chuanqing); Wang, LB (Wang, Libo); Zhang, MZ (Zhang, Mingzhi); Zhang, LG (Zhang, Lingen); Lu, GP (Lu, Guoping); Lu, ZJ (Lu, Zhujin); Yu, J (Yu, Jian); Qiao, ZW (Qiao, Zhongwei); Gu, Y (Gu, Ying); Shen, GM (Shen, Guomei); Xu, H (Xu, Hong); Zeng, M (Zeng, Mei); Zhai, XW (Zhai, Xiaowen); Huang, GY (Huang, Guoying)

ANNALS OF TRANSLATIONAL MEDICINE Volume: 8  Issue: 5  Article Number: 241  DOI: 10.21037/atm.2020.03.22  Published: MAR 2020

Abstract:

Background: A recent cluster of pneumonia cases in China was caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We report the screening and diagnosis of coronavirus disease 2019 (COVID-19) in our hospital.

Methods: Developed a procedure for the identification of children cases with COVID-19 in outpatient and emergency department of our hospital, then we observed how this process works.

Results: (I) There were 56 cases considered suspected cases, and 10 cases were confirmed as COVID-19. (II) Of the 10 confirmed COVID-19 cases admitted in our hospital, 5 were males and 5 were females, aged from 7 months to 11 years, the average age is 6.0 +/- 4.2 years, 6 cases were mild pneumonia, the others were upper respiratory tract infection. (III) We followed up 68 patients in isolation at home until symptoms disappeared. Non were missed in the patient's first visit. The sensitivity of this method is 100% and the specificity is 71.3%.
Conclusions: Our screening process works well, and it is also necessary to establish a screening network in the hospital.

Accession Number: WOS:000520850100093

Article 10 of 12

Early estimation of the case fatality rate of COVID-19 in mainland China: a data-driven analysis

Yang, S (Yang, Shu); Cao, PH (Cao, Peihua); Du, PP (Du, Peipei); Wu, ZT (Wu, Ziting); Zhuang, ZA (Zhuang, Zian); Yang, L (Yang, Lin); Yu, X (Yu, Xuan); Zhou, Q (Zhou, Qi); Feng, XX (Feng, Xixi); Wang, XH (Wang, Xiaohui); Li, WG (Li, Weiguo); Liu, EM (Liu, Enmei); Chen, J (Chen, Ju); Chen, YL (Chen, Yaolong); He, DH (He, Daihai)

Group COVID-19 Evidence Recommendations

ANNALS OF TRANSLATIONAL MEDICINE Volume: 8 Issue: 4 Article Number: 128 DOI: 10.21037/atm.2020.02.66 Published: FEB 2020

Abstract:

Background: An ongoing outbreak of pneumonia caused by a novel coronavirus [severe acute respiratory syndrome coronavirus (SARS-CoV)-2], named COVID-19, hit a major city of China, Wuhan in December 2019 and subsequently spread to other provinces/regions of China and overseas. Several studies have been done to estimate the basic reproduction number in the early phase of this outbreak, yet there are no reliable estimates of case fatality rate (CFR) for COVID-19 to date.

Methods: In this study, we used a purely data-driven statistical method to estimate the CFR in the early phase of the COVID-19 outbreak. Daily numbers of laboratory-confirmed COVID-19 cases and deaths were collected from January 10 to February 3, 2020 and divided into three clusters: Wuhan city, other cities of Hubei province, and other provinces of mainland China. Simple linear regression model was applied to estimate the CFR from each cluster.

Results: We estimated that CFR during the first weeks of the epidemic ranges from 0.15% (95% CI: 0.12-0.18%) in mainland China excluding Hubei through 1.41% (95% CI: 1.38-1.45%) in Hubei province excluding the city of Wuhan to 5.25% (95% CI: 4.98-5.51%) in Wuhan.

Conclusions: Our early estimates suggest that the CFR of COVID-19 is lower than the previous coronavirus epidemics caused by SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV).

Accession Number: WOS:00051841000080
The Novel Chinese Coronavirus (2019-nCoV) Infections: challenges for fighting the storm

Bassetti, M (Bassetti, Matteo); Vena, A (Vena, Antonio); Giacobbe, DR (Giacobbe, Daniele Roberto)

EUROPEAN JOURNAL OF CLINICAL INVESTIGATION Volume: 50 Issue: 3 DOI: 10.1111/eci.13209 Early Access Date: JAN 2020 Published: MAR 2020

Accession Number: WOS:000510768300001

CT Scans of Patients with 2019 Novel Coronavirus (COVID-19) Pneumonia

Zhao, W (Zhao, Wei); Zhong, Z (Zhong, Zheng); Xie, XZ (Xie, Xingzhi); Yu, QZ (Yu, Qizhi); Liu, J (Liu, Jun)

THERANOSTICS Volume: 10 Issue: 10 Pages: 4606-4613 DOI: 10.7150/thno.45016 Published: 2020

Abstract:

Rationale: The increasing speed of confirmed 2019 novel coronavirus (COVID-19) cases is striking in China. The purpose of this study is to summarize the outcomes of patients with novel COVID-19 pneumonia (NCP) at our institution.

Methods: In this single-center study, we retrospectively included 118 cases of NCP, from January 16, 2020 to February 4, 2020. The clinical outcomes were monitored up to February 11, 2020. The outcomes of NCP patients were phase summarized at our institution. Three kinds of responses to clinical treatment were defined and evaluated: 1) good, symptoms continually improved; 2) fair, symptoms not improved or relapsed; 3) poor, symptoms aggravated. The risk factors, including basal clinical characteristics, CT imaging features, and follow-up CT changes (no change, progress, and improvement) related to poor/fair outcomes, were also investigated.

Results: Six patients were improved to no-emergency type, 2 remained the same, and 2 progressed to fatal type. Besides, 13 patients progressed from the common type group to the emergency group (3 in fatal type and 10 in severe type). Forty-two (35.6%) patients were discharged with a median hospital stay of 9.5 days (range, 4.0-15.0 days). Thus, the numbers in different responses were, 73 patients in good response group (4 emergency cases, 69 no-emergency cases), 28 in fair response group (3 emergency cases, 25 no-emergency cases), and 17 in poor response group (3 emergency cases, 14 no-emergency cases). No patient has died in our hospital to date. The median duration of progress observed from CT scans was 6 days (range, 2-14 days). The progression in abnormal imaging findings indicate a poor/fair response, whereas the alleviated symptoms seen from CT suggest a good response.

Conclusion: Most cases are no-emergency type and have a favorable response to clinical treatment. Follow-up CT changes during the treatment can help evaluate the treatment response of patients with NCP.

Accession Number: WOS:000522665800023
PHARMACOLOGY
PHARMACY:
Article 1 of 4

Community pharmacist in public health emergencies: Quick to action against the coronavirus 2019-nCoV outbreak

Ung, COL (Ung, Carolina Oi Lam)

RESEARCH IN SOCIAL & ADMINISTRATIVE PHARMACY Volume: 16 Issue: 4 Pages: 583-586 DOI: 10.1016/j.sapharm.2020.02.003 Published: APR 2020

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.

Accession Number: WOS:000520862600017

Article 2 of 4

COVID-19 treatment by repurposing drugs until the vaccine is in sight

Phadke, M (Phadke, Mrudula); Saunik, S (Saunik, Sujata)

DRUG DEVELOPMENT RESEARCH DOI: 10.1002/ddr.21666 Early Access Date: MAR 2020

Abstract:

Corona virus disease (COVID-19) has created pandemic in the world as declared by WHO on March 12, 2020. It is a viral disease caused by SARS-CoV 2 virus and has affected large populations in over 120 countries. There is no specific treatment available and management is empirical. Until such time that an effective vaccine is available for COVID-19 viral infection, one can repurpose known therapeutic drug molecules such as angiotensin receptor 2 blocker, a commonly used antihypertensive drug, to control COVID-19 virus from gaining entry into the host cell by blocking the angiotensin receptor. Clinical trials should also be undertaken to use statins, which are lipid-lowering drugs but have anti-inflammatory and immunomodulatory properties to prevent acute lung injury in COVID-19 infection.

Accession Number: WOS:000522071500001

Article 3 of 4

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

Lai, CC (Lai, Chih-Cheng); Shih, TP (Shih, Tzu-Ping); Ko, WC (Ko, Wen-Chien); Tang, HJ (Tang, Hung-Jen); Hsueh, PR (Hsueh, Po-Ren)
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. (C) 2020 Elsevier B.V. and International Society of Chemotherapy. All rights reserved.

Accession Number: WOS:000518855500030

Discovering drugs to treat coronavirus disease 2019 (COVID-19)

Dong, LY (Dong, Liying); Hu, SS (Hu, Shasha); Gao, JJ (Gao, Jianjun)

Abstract:

The SARS-CoV-2 virus emerged in December 2019 and then spread rapidly worldwide, particularly to China, Japan, and South Korea. Scientists are endeavoring to find antivirals specific to the virus. Several drugs such as chloroquine, arbidol, remdesivir, and favipiravir are currently undergoing clinical studies to test their efficacy and safety in the treatment of coronavirus disease 2019 (COVID-19) in China; some promising results have been achieved thus far. This article summarizes agents with potential efficacy against SARS-CoV-2.

Accession Number: WOS:000518458200010
IMMUNOLOGY :
The correlation between viral clearance and biochemical outcomes of 94 COVID-19 infected discharged patients

Yuan, J (Yuan, Jing); Zou, RR (Zou, Rougrong); Zeng, LJ (Zeng, Lijiao); Kou, SL (Kou, Shanglong); Lan, JF (Lan, Jianfeng); Li, XH (Li, Xiahe); Liang, YH (Liang, Yanhua); Ding, XY (Ding, Xiaoyan); Tan, GY (Tan, Guoyu); Tang, SH (Tang, Shenghong); Liu, L (Liu, Lei); Liu, YX (Liu, Yingxia); Pan, YC (Pan, Yanchao); Wang, ZQ (Wang, Zhaoqin)

Abstract:
Objective This study aims to evaluate the correlation between viral clearance and blood biochemical index of 94 discharged patients with COVID-19 infection in Shenzhen Third People's Hospital, enrolled from Jan 5 to Feb 13, 2020. Methods The clinical and laboratory findings were extracted from the electronic medical records of the patients. The data were analysed and reviewed by a trained team of physicians. Information on clinical signs and symptoms, medical treatment, virus clearance, and laboratory parameters including interleukin 6 (IL-6) and C-reactive protein were collected. Results COVID-19 mRNA clearance ratio was identified significantly correlated with the decline of serum creatine kinase (CK) and lactate dehydrogenase (LDH) levels. Furthermore, COVID-19 mRNA clearance time was positively correlated with the length of hospital stay in patients treated with either IFN-alpha + lopinavir/ritonavir or IFN-alpha + lopinavir/ritonavir + ribavirin. Conclusions Therapeutic regimens of IFN-alpha + lopinavir/ritonavir and IFN-alpha + lopinavir/ritonavir + ribavirin might be beneficial for treatment of COVID-19. Serum LDH or CK decline may predict a favorable response to treatment of COVID-19 infection.

Pathogenicity and transmissibility of 2019-nCoV-A quick overview and comparison with other emerging viruses

Chen, JL (Chen, Jieliang)

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. (C) 2020 The Author(s). Published by Elsevier Masson SAS on behalf of Institut Pasteur.

Accession Number: WOS:000519987000001

**Article 3 of 11**

**Is COVID-19 receiving ADE from other coronaviruses?**

Tetro, JA (Tetro, Jason A.)

MICROBES AND INFECTION Volume: 22 Issue: 2 Special Issue: SI Pages: 72-73 DOI: 10.1016/j.micinf.2020.02.006 Published: MAR 2020

**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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000002

**Article 4 of 11**


Li, JY (Li, Jin-Yan); You, Z (You, Zhi); Wang, Q (Wang, Qiong); Zhou, ZJ (Zhou, Zhi-Jian); Qiu, Y (Qiu, Ye); Luo, R (Luo, Rui); Ge, XY (Ge, Xing-Yi)

MICROBES AND INFECTION Volume: 22 Issue: 2 Special Issue: SI Pages: 80-85 DOI: 10.1016/j.micinf.2020.02.002 Published: MAR 2020

**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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Article 5 of 11

Lessons learned from the 2019-nCoV epidemic on prevention of future infectious diseases

Pan, XC (Pan, Xingchen); Ojcius, DM (Ojcius, David M.); Gao, TY (Gao, Tianyue); Li, ZS (Li, Zhongsheng); Pan, CH (Pan, Chunhua); Pan, CG (Pan, Chungen)

MICROBES AND INFECTION Volume: 22 Issue: 2 Special Issue: SI Pages: 86-91 DOI: 10.1016/j.micinf.2020.02.004 Published: MAR 2020

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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Article 6 of 11

Epitopes for a 2019-nCoV vaccine

Lucchese, G (Lucchese, Guglielmo)

CELLULAR & MOLECULAR IMMUNOLOGY DOI: 10.1038/s41423-020-0377-z Early Access Date: FEB 2020

Accession Number: WOS:000515475700003
Transcriptomic characteristics of bronchoalveolar lavage fluid and peripheral blood mononuclear cells in COVID-19 patients

Xiong, Y (Xiong, Yong); Liu, Y (Liu, Yuan); Cao, L (Cao, Liu); Wang, DH (Wang, Dehe); Guo, M (Guo, Ming); Jiang, A (Jiang, Ao); Guo, D (Guo, Dong); Hu, WJ (Hu, Wenjia); Yang, JY (Yang, Jiayi); Tang, ZD (Tang, Zhidong); Wu, HL (Wu, Honglong); Lin, YQ (Lin, Yongquan); Zhang, MY (Zhang, Meiyan); Zhang, Q (Zhang, Qi); Shi, M (Shi, Mang); Liu, YL (Liu, Yingle); Zhou, Y (Zhou, Yu); Lan, K (Lan, Ke); Chen, Y (Chen, Yu)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 761-770 DOI: 10.1080/22221751.2020.1747363 Published: JAN 1 2020

Abstract:
Circulating in China and 158 other countries and areas, the ongoing COVID-19 outbreak has caused devastating mortality and posed a great threat to public health. However, efforts to identify effectively supportive therapeutic drugs and treatments has been hampered by our limited understanding of host immune response for this fatal disease. To characterize the transcriptional signatures of host inflammatory response to SARS-CoV-2 (HCoV-19) infection, we carried out transcriptome sequencing of the RNAs isolated from the bronchoalveolar lavage fluid (BALF) and peripheral blood mononuclear cells (PBMC) specimens of COVID-19 patients. Our results reveal distinct host inflammatory cytokine profiles to SARS-CoV-2 infection in patients, and highlight the association between COVID-19 pathogenesis and excessive cytokine release such as CCL2/MCP-1, CXCL10/IP-10, CCL3/MIP-1A, and CCL4/MIP1B. Furthermore, SARS-CoV-2 induced activation of apoptosis and P53 signalling pathway in lymphocytes may be the cause of patients' lymphopenia. The transcriptome dataset of COVID-19 patients would be a valuable resource for clinical guidance on anti-inflammatory medication and understanding the molecular mechanisms of host response.

Accession Number: WOS:000524274400001

Renin-angiotensin system inhibitors improve the clinical outcomes of COVID-19 patients with hypertension

Meng, J (Meng, Juan); Xiao, GH (Xiao, Guohui); Zhang, JJ (Zhang, Juanjuan); He, X (He, Xing); Ou, M (Ou, Min); Bi, J (Bi, Jing); Yang, RQ (Yang, Rongqing); Di, WC (Di, Wencheng); Wang, ZQ (Wang, Zhaolin); Li, ZG (Li, Zigang); Gao, H (Gao, Hong); Liu, L (Liu, Lei); Zhang, GL (Zhang, Guoliang)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 757-760 DOI: 10.1080/22221751.2020.1746200 Published: JAN 1 2020

Abstract:
The dysfunction of the renin-angiotensin system (RAS) has been observed in coronavirus infection disease (COVID-19) patients, but whether RAS inhibitors, such as angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin II type 1 receptor blockers (ARBs), are associated with clinical outcomes remains unknown. COVID-19 patients with hypertension were enrolled to evaluate the
effect of RAS inhibitors. We observed that patients receiving ACEI or ARB therapy had a lower rate of severe diseases and a trend toward a lower level of IL-6 in peripheral blood. In addition, ACEI or ARB therapy increased CD3 and CD8 T cell counts in peripheral blood and decreased the peak viral load compared to other antihypertensive drugs. This evidence supports the benefit of using ACEIs or ARBs to potentially contribute to the improvement of clinical outcomes of COVID-19 patients with hypertension.

Article 9 of 11

Emerging COVID-19 coronavirus: glycan shield and structure prediction of spike glycoprotein and its interaction with human CD26

Vankadari, N (Vankadari, Naveen); Wilce, JA (Wilce, Jacqueline A.)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 601-604 DOI: 10.1080/22221751.2020.1739565 Published: JAN 1 2020

Abstract:

The recent outbreak of pneumonia-causing COVID-19 in China is an urgent global public health issue with an increase in mortality and morbidity. Here we report our modelled homo-trimer structure of COVID-19 spike glycoprotein in both closed (ligand-free) and open (ligand-bound) conformation, which is involved in host cell adhesion. We also predict the unique N- and O-linked glycosylation sites of spike glycoprotein that distinguish it from the SARS and underlines shielding and camouflage of COVID-19 from the host the defence system. Furthermore, our study also highlights the key finding that the S1 domain of COVID-19 spike glycoprotein potentially interacts with the human CD26, a key immunoregulatory factor for hijacking and virulence. These findings accentuate the unique features of COVID-19 and assist in the development of new therapeutics.

Accession Number: WOS:000524535300001

Article 10 of 11

The different clinical characteristics of corona virus disease cases between children and their families in China - the character of children with COVID-19

Su, L (Su, Liang); Ma, X (Ma, Xiang); Yu, HF (Yu, Huafeng); Zhang, ZH (Zhang, Zhaohua); Bian, PF (Bian, Pengfei); Han, YL (Han, Yuling); Sun, J (Sun, Jing); Liu, YQ (Liu, Yanqin); Yang, C (Yang, Chun); Geng, J (Geng, Jin); Zhang, ZF (Zhang, Zhongfa); Gai, ZT (Gai, Zhongtao)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 707-713 DOI: 10.1080/22221751.2020.1744483 Published: JAN 1 2020

Abstract:

This study aims to analyze the different clinical characteristics between children and their families infected with severe acute respiratory syndrome coronavirus 2. Clinical data from nine children and their 14 families were collected, including general status, clinical, laboratory test, and imaging characteristics. All the children were detected positive result after their families onset. Three children had fever (22.2%) or cough (11.2%) symptoms and six (66.7%) children had no symptom. Among the 14 adult patients, the major symptoms included fever (57.1%), cough (35.7%), chest
tightness/pain (21.4%), fatigue (21.4%) and sore throat (7.1%). Nearly 70% of the patients had normal (71.4%) or decreased (28.6%) white blood cell counts, and 50% (7/14) had lymphocytopenia. There were 10 adults (71.4%) showed abnormal imaging. The main manifestations were pulmonary consolidation (70%), nodular shadow (50%), and ground glass opacity (50%). Five discharged children were admitted again because their stool showed positive result in SARS-CoV-2 PCR. COVID-19 in children is mainly caused by family transmission, and their symptoms are mild and prognosis is better than adult. However, their PCR result in stool showed longer time than their families. Because of the mild or asymptomatic clinical process, it is difficult to recognize early for pediatrician and public health staff.

Accession Number: WOS:000522087600001

Article 11 of 11

Detectable 2019-nCoV viral RNA in blood is a strong indicator for the further clinical severity

Chen, WL (Chen, Weilie); Lan, Y (Lan, Yun); Yuan, XZ (Yuan, Xiaozhen); Deng, XL (Deng, Xilong); Li, YP (Li, Yueping); Cai, XL (Cai, Xiaoli); Li, LY (Li, Liya); He, RY (He, Ruiying); Tan, YZ (Tan, Yizhou); Deng, XZ (Deng, Xizi); Gao, M (Gao, Ming); Tang, GF (Tang, Guofang); Zhao, LZ (Zhao, Lingzhai); Wang, JL (Wang, Jinlin); Fan, QH (Fan, Qinghong); Wen, CY (Wen, Chunyan); Tong, YW (Tong, Yuwei); Tang, YB (Tang, Yangbo); Hu, FY (Hu, Fengyu); Li, F (Li, Feng); Tang, XP (Tang, Xiaoping)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 469-473 DOI: 10.1080/22221751.2020.1732837 Published: JAN 1 2020

Abstract:

The novel coronavirus (2019-nCoV) infection caused pneumonia. we retrospectively analyzed the virus presence in the pharyngeal swab, blood, and the anal swab detected by real-time PCR in the clinical lab. Unexpectedly, the 2109-nCoV RNA was readily detected in the blood (6 of 57 patients) and the anal swabs (11 of 28 patients). Importantly, all of the 6 patients with detectable viral RNA in the blood cohort progressed to severe symptom stage, indicating a strong correlation of serum viral RNA with the disease severity (p-value = 0.0001). Meanwhile, 8 of the 11 patients with anal swab virus-positive was in severe clinical stage. However, the concentration of viral RNA in the anal swab (Ct value = 24 + 39) was higher than in the blood (Ct value = 34 + 39) from patient 2, suggesting that the virus might replicate in the digestive tract. Altogether, our results confirmed the presence of virus RNA in extra-pulmonary sites.

Accession Number: WOS:000517523100001
MICROBIOLOGY :
**Article 1 of 12**

**2019_nCoV/SARS-CoV-2: rapid classification of betacoronaviruses and identification of Traditional Chinese Medicine as potential origin of zoonotic coronaviruses**

Wassenaar, TM (Wassenaar, T. M.); Zou, Y (Zou, Y.)

LETTERS IN APPLIED MICROBIOLOGY Volume: 70 Issue: 5 Pages: 342-348 DOI: 10.1111/lam.13285 Published: MAY 2020

**Abstract:**

The current outbreak of a novel severe acute respiratory syndrome-like coronavirus, 2019_nCoV (now named SARS-CoV-2), illustrated difficulties in identifying a novel coronavirus and its natural host, as the coding sequences of various Betacoronavirus species can be highly diverse. By means of whole-genome sequence comparisons, we demonstrate that the noncoding flanks of the viral genome can be used to correctly separate the recognized four betacoronavirus subspecies. The conservation would be sufficient to define target sequences that could, in theory, classify novel virus species into their subspecies. Only 253 upstream noncoding sequences of Sarbecovirus are sufficient to identify genetic similarities between species of this subgenus. Furthermore, it was investigated which bat species have commercial value in China, and would thus likely be handled for trading purposes. A number of coronavirus genomes have been published that were obtained from such bat species. These bats are used in Traditional Chinese Medicine, and their handling poses a potential risk to cause zoonotic coronavirus epidemics.

Significance and Impact of the Study The noncoding upstream and downstream flanks of coronavirus genomes allow for rapid classification of novel Betacoronavirus species and correct identification of genetic relationships. Although bats are the likely natural host of 2019_nCoV, the exact bat species that serves as the natural host of the virus remains as yet unknown. Chinese bat species with commercial value were identified as natural reservoirs of coronaviruses and are used in Traditional Chinese Medicine. Since their trading provides a potential risk for spreading zoonoses, a change in these practices is highly recommended.

Accession Number: WOS:000522988600001

**Article 2 of 12**

**The species Severe acute respiratory syndrome-related coronavirus: classifying 2019-nCoV and naming it SARS-CoV-2**

Group Coronaviridae Study Grp

NATURE MICROBIOLOGY Volume: 5 Issue: 4 Pages: 536-544 DOI: 10.1038/s41564-020-0695-z Published: APR 2020

**Abstract:**

The present outbreak of a coronavirus-associated acute respiratory disease called coronavirus disease 19 (COVID-19) is the third documented spillover of an animal coronavirus to humans in only two decades that has resulted in a major epidemic. The Coronaviridae Study Group (CSG) of the International Committee on Taxonomy of Viruses, which is responsible for developing the
classification of viruses and taxon nomenclature of the family Coronaviridae, has assessed the placement of the human pathogen, tentatively named 2019-nCoV, within the Coronaviridae. Based on phylogeny, taxonomy and established practice, the CSG recognizes this virus as forming a sister clade to the prototype human and bat severe acute respiratory syndrome coronaviruses (SARS-CoVs) of the species Severe acute respiratory syndrome-related coronavirus, and designates it as SARS-CoV-2. In order to facilitate communication, the CSG proposes to use the following naming convention for individual isolates: SARS-CoV-2/host/location/isolate/date. While the full spectrum of clinical manifestations associated with SARS-CoV-2 infections in humans remains to be determined, the independent zoonotic transmission of SARS-CoV and SARS-CoV-2 highlights the need for studying viruses at the species level to complement research focused on individual pathogenic viruses of immediate significance. This will improve our understanding of virus-host interactions in an ever-changing environment and enhance our preparedness for future outbreaks.

Accession Number: WOS:000521834500005

**Article 3 of 12**

Pathogenicity and transmissibility of 2019-nCoV-A quick overview and comparison with other emerging viruses

Chen, JL (Chen, Jieliang)

MICROBES AND INFECTION Volume: 22 Issue: 2 Special Issue: SI Pages: 69-71 DOI: 10.1016/j.micinf.2020.01.004 Published: MAR 2020

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. (C) 2020 The Author(s). Published by Elsevier Masson SAS on behalf of Institut Pasteur.

Accession Number: WOS:000519987000001
Article 4 of 12

Is COVID-19 receiving ADE from other coronaviruses?

Tetro, JA (Tetro, Jason A.)

MICROBES AND INFECTION  Volume: 22  Issue: 2  Special Issue: SI  Pages: 72-73  DOI: 10.1016/j.micinf.2020.02.006  Published: MAR 2020

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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000002

Article 5 of 12


Li, JY (Li, Jin-Yan); You, Z (You, Zhi); Wang, Q (Wang, Qiong); Zhou, ZJ (Zhou, Zhi-Jian); Qiu, Y (Qiu, Ye); Luo, R (Luo, Rui); Ge, XY (Ge, Xing-Yi)

MICROBES AND INFECTION  Volume: 22  Issue: 2  Special Issue: SI  Pages: 80-85  DOI: 10.1016/j.micinf.2020.02.002  Published: MAR 2020

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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000004
Lessons learned from the 2019-nCoV epidemic on prevention of future infectious diseases

Pan, XC (Pan, Xingchen); Ojcius, DM (Ojcius, David M.); Gao, TY (Gao, Tianyue); Li, ZS (Li, Zhongsheng); Pan, CH (Pan, Chunhua); Pan, CG (Pan, Chungen)

MICROBES AND INFECTION Volume: 22 Issue: 2 Special Issue: SI Pages: 86-91 DOI: 10.1016/j.micinf.2020.02.004 Published: MAR 2020

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. (C) 2020 Institut Pasteur. Published by Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000519987000005

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

Lai, CC (Lai, Chih-Cheng); Shih, TP (Shih, Tzu-Ping); Ko, WC (Ko, Wen-Chien); Tang, HJ (Tang, Hung-Jen); Hsueh, PR (Hsueh, Po-Ren)

INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS Volume: 55 Issue: 3 Article Number: UNSP 105924 DOI: 10.1016/j.ijantimicag.2020.105924 Published: MAR 2020

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. (C) 2020 Elsevier B.V. and International Society of Chemotherapy. All rights reserved.

Accession Number: WOS:000518855500030

Article 8 of 12

Transcriptomic characteristics of bronchoalveolar lavage fluid and peripheral blood mononuclear cells in COVID-19 patients

Xiong, Y (Xiong, Yong); Liu, Y (Liu, Yuan); Cao, L (Cao, Liu); Wang, DH (Wang, Dehe); Guo, M (Guo, Ming); Jiang, A (Jiang, Ao); Guo, D (Guo, Dong); Hu, WJ (Hu, Wenjia); Yang, JY (Yang, Jiayi); Tang, ZD (Tang, Zhidong); Wu, HL (Wu, Honglong); Lin, YQ (Lin, Yongquan); Zhang, MY (Zhang, Meiyuan); Zhang, Q (Zhang, Qi); Shi, M (Shi, Mang); Liu, YL (Liu, Yingle); Zhou, Y (Zhou, Yu); Lan, K (Lan, Ke); Chen, Y (Chen, Yu)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 761-770 DOI: 10.1080/22221751.2020.1747363 Published: JAN 1 2020

Abstract:

Circulating in China and 158 other countries and areas, the ongoing COVID-19 outbreak has caused devastating mortality and posed a great threat to public health. However, efforts to identify effectively supportive therapeutic drugs and treatments has been hampered by our limited understanding of host immune response for this fatal disease. To characterize the transcriptional signatures of host inflammatory response to SARS-CoV-2 (HCoV-19) infection, we carried out transcriptome sequencing of the RNAs isolated from the bronchoalveolar lavage fluid (BALF) and peripheral blood mononuclear cells (PBMC) specimens of COVID-19 patients. Our results reveal distinct host inflammatory cytokine profiles to SARS-CoV-2 infection in patients, and highlight the association between COVID-19 pathogenesis and excessive cytokine release such as CCL2/MCP-1, CXCL10/IP-10, CCL3/MIP-1A, and CCL4/MIP1B. Furthermore, SARS-CoV-2 induced activation of apoptosis and P53 signalling pathway in lymphocytes may be the cause of patients' lymphopenia. The transcriptome dataset of COVID-19 patients would be a valuable resource for clinical guidance on anti-inflammatory medication and understanding the molecular mechanisms of host response.

Accession Number: WOS:000524274400001
**Renin-angiotensin system inhibitors improve the clinical outcomes of COVID-19 patients with hypertension**

Meng, J (Meng, Juan); Xiao, GH (Xiao, Guohui); Zhang, JJ (Zhang, Juanjuan); He, X (He, Xing); Ou, M (Ou, Min); Bi, J (Bi, Jing); Yang, RQ (Yang, Rongqing); Di, WC (Di, Wencheng); Wang, ZQ (Wang, Zhaoqin); Li, ZG (Li, Zigang); Gao, H (Gao, Hong); Liu, L (Liu, Lei); Zhang, GL (Zhang, Guoliang)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 757-760 DOI: 10.1080/22221751.2020.1746200 Published: JAN 1 2020

**Abstract:**

The dysfunction of the renin-angiotensin system (RAS) has been observed in coronavirus infection disease (COVID-19) patients, but whether RAS inhibitors, such as angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin II type 1 receptor blockers (ARBs), are associated with clinical outcomes remains unknown. COVID-19 patients with hypertension were enrolled to evaluate the effect of RAS inhibitors. We observed that patients receiving ACEI or ARB therapy had a lower rate of severe diseases and a trend toward a lower level of IL-6 in peripheral blood. In addition, ACEI or ARB therapy increased CD3 and CD8 T cell counts in peripheral blood and decreased the peak viral load compared to other antihypertensive drugs. This evidence supports the benefit of using ACEIs or ARBs to potentially contribute to the improvement of clinical outcomes of COVID-19 patients with hypertension.

Accession Number: WOS:000524273300001

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**Emerging COVID-19 coronavirus: glycan shield and structure prediction of spike glycoprotein and its interaction with human CD26**

Vankadari, N (Vankadari, Naveen); Wilce, JA (Wilce, Jacqueline A.)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 601-604 DOI: 10.1080/22221751.2020.1739565 Published: JAN 1 2020

**Abstract:**

The recent outbreak of pneumonia-causing COVID-19 in China is an urgent global public health issue with an increase in mortality and morbidity. Here we report our modelled homo-trimer structure of COVID-19 spike glycoprotein in both closed (ligand-free) and open (ligand-bound) conformation, which is involved in host cell adhesion. We also predict the unique N- and O-linked glycosylation sites of spike glycoprotein that distinguish it from the SARS and underlines shielding and camouflage of COVID-19 from the host the defence system. Furthermore, our study also highlights the key finding that the S1 domain of COVID-19 spike glycoprotein potentially interacts with the human CD26, a key immunoregulatory factor for hijacking and virulence. These findings accentuate the unique features of COVID-19 and assist in the development of new therapeutics.

Accession Number: WOS:000524535300001
The different clinical characteristics of coronavirus disease cases between children and their families in China - the character of children with COVID-19

Su, L (Su, Liang); Ma, X (Ma, Xiang); Yu, HF (Yu, Huafeng); Zhang, ZH (Zhang, Zhaohua); Bian, PF (Bian, Pengfei); Han, YL (Han, Yuling); Sun, J (Sun, Jing); Liu, YQ (Liu, Yanqin); Yang, C (Yang, Chun); Geng, J (Geng, Jin); Zhang, ZF (Zhang, Zhongfa); Gai, ZT (Gai, Zhongtao)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 707-713 DOI: 10.1080/22221751.2020.1744483 Published: JAN 1 2020

Abstract:
This study aims to analyze the different clinical characteristics between children and their families infected with severe acute respiratory syndrome coronavirus 2. Clinical data from nine children and their 14 families were collected, including general status, clinical, laboratory test, and imaging characteristics. All the children were detected positive result after their families onset. Three children had fever (22.2%) or cough (11.2%) symptoms and six (66.7%) children had no symptom. Among the 14 adult patients, the major symptoms included fever (57.1%), cough (35.7%), chest tightness/pain (21.4%), fatigue (21.4%) and sore throat (7.1%). Nearly 70% of the patients had normal (71.4%) or decreased (28.6%) white blood cell counts, and 50% (7/14) had lymphocytopenia. There were 10 adults (71.4%) showed abnormal imaging. The main manifestations were pulmonary consolidation (70%), nodular shadow (50%), and ground glass opacity (50%). Five discharged children were admitted again because their stool showed positive result in SARS-CoV-2 PCR. COVID-19 in children is mainly caused by family transmission, and their symptoms are mild and prognosis is better than adult. However, their PCR result in stool showed longer time than their families. Because of the mild or asymptomatic clinical process, it is difficult to recognize early for pediatrician and public health staff.

Accession Number: WOS:000522087600001

Detectable 2019-nCoV viral RNA in blood is a strong indicator for the further clinical severity

Chen, WL (Chen, Weilie); Lan, Y (Lan, Yun); Yuan, XZ (Yuan, Xiaozhen); Deng, XL (Deng, Xilong); Li, YP (Li, Yueping); Cai, XL (Cai, Xiaoli); Li, LY (Li, Liya); He, RY (He, Ruiying); Tan, YZ (Tan, Yizhou); Deng, XZ (Deng, Xizi); Gao, M (Gao, Ming); Tang, GF (Tang, Guofang); Zhao, LZ (Zhao, Lingzai); Wang, JL (Wang, Jinlin); Fan, QH (Fan, Qinghong); Wen, CY (Wen, Chunyan); Tong, YW (Tong, Yuwei); Tang, YB (Tang, Yangbo); Hu, FY (Hu, Fengyu); Li, F (Li, Feng); Tang, XP (Tang, Xiaoping)

EMERGING MICROBES & INFECTIONS Volume: 9 Issue: 1 Pages: 469-473 DOI: 10.1080/22221751.2020.1732837 Published: JAN 1 2020

Abstract:
The novel coronavirus (2019-nCoV) infection caused pneumonia. We retrospectively analyzed the virus presence in the pharyngeal swab, blood, and the anal swab detected by real-time PCR in the clinical lab. Unexpectedly, the 2109-nCoV RNA was readily detected in the blood (6 of 57 patients)
and the anal swabs (11 of 28 patients). Importantly, all of the 6 patients with detectable viral RNA in the blood cohort progressed to severe symptom stage, indicating a strong correlation of serum viral RNA with the disease severity (p-value = 0.0001). Meanwhile, 8 of the 11 patients with anal swab virus-positive was in severe clinical stage. However, the concentration of viral RNA in the anal swab (Ct value = 24 + 39) was higher than in the blood (Ct value = 34 + 39) from patient 2, suggesting that the virus might replicate in the digestive tract. Altogether, our results confirmed the presence of virus RNA in extra-pulmonary sites.

Accession Number: WOS:000517523100001
VIROLOGY :
Article 1 of 12

**Stability issues of RT-PCR testing of SARS-CoV-2 for hospitalized patients clinically diagnosed with COVID-19**

Li, YF (Li, Yafang); Yao, L (Yao, Lin); Li, JW (Li, Jiawei); Chen, L (Chen, Lei); Song, YY (Song, Yiyuan); Cai, ZF (Cai, Zhifang); Yang, CH (Yang, Chunhua)

JOURNAL OF MEDICAL VIROLOGY DOI: 10.1002/jmv.25786 Early Access Date: APR 2020

**Abstract:**

In this study, we collected a total of 610 hospitalized patients from Wuhan between February 2, 2020, and February 17, 2020. We reported a potentially high false negative rate of real-time reverse-transcriptase polymerase chain reaction (RT-PCR) testing for SARS-CoV-2 in the 610 hospitalized patients clinically diagnosed with COVID-19 during the 2019 outbreak. We also found that the RT-PCR results from several tests at different points were variable from the same patients during the course of diagnosis and treatment of these patients. Our results indicate that in addition to the emphasis on RT-PCR testing, clinical indicators such as computed tomography images should also be used not only for diagnosis and treatment but also for isolation, recovery/discharge, and transferring for hospitalized patients clinically diagnosed with COVID-19 during the current epidemic. These results suggested the urgent needs for the standard of procedures of sampling from different anatomic sites, sample transportation, optimization of RT-PCR, serology diagnosis/screening for SARS-CoV-2 infection, and distinct diagnosis from other respiratory diseases such as influenza infections as well.

Accession Number: WOS:000523623200001

Article 2 of 12

**Clinical features and treatment of COVID-19 patients in northeast Chongqing**

Wan, SX (Wan, Suxin); Xiang, Y (Xiang, Yi); Fang, W (Fang, Wei); Zheng, Y (Zheng, Yu); Li, BQ (Li, Boqun); Hu, YJ (Hu, Yanjun); Lang, CH (Lang, Chunhui); Huang, DQ (Huang, Daoqiu); Sun, QY (Sun, Qiyuan); Xiong, Y (Xiong, Yan); Huang, X (Huang, Xia); Lv, JL (Lv, Jinglong); Luo, YL (Luo, Yaling); Shen, L (Shen, Li); Yang, HR (Yang, Haoran); Huang, G (Huang, Gu); Yang, RH (Yang, Ruishan)

JOURNAL OF MEDICAL VIROLOGY DOI: 10.1002/jmv.25783 Early Access Date: APR 2020

**Abstract:**

The outbreak of the novel coronavirus in China (SARS-CoV-2) that began in December 2019 presents a significant and urgent threat to global health. This study was conducted to provide the international community with a deeper understanding of this new infectious disease. Epidemiological, clinical features, laboratory findings, radiological characteristics, treatment, and clinical outcomes of 135 patients in northeast Chongqing were collected and analyzed in this study. A total of 135 hospitalized patients with COVID-19 were enrolled. The median age was 47 years (interquartile range, 36-55), and there was no significant gender difference (53.3% men). The majority of patients had contact with people from the Wuhan area. Forty-three (31.9%) patients had underlying disease, primarily hypertension (13 [9.6%]), diabetes (12 [8.9%]), cardiovascular disease (7 [5.2%]), and malignancy (4 [3.0%]). Common symptoms included fever (120 [88.9%]), cough
Chest computed tomography scans showed bilateral patchy shadows or ground glass opacity in the lungs of all the patients. All patients received antiviral therapy (135 [100%]) (Kaletra and interferon were both used), antibacterial therapy (59 [43.7%]), and corticosteroids (36 [26.7%]). In addition, many patients received traditional Chinese medicine (TCM) (124 [91.8%]). It is suggested that patients should receive Kaletra early and should be treated by a combination of Western and Chinese medicines. Compared to the mild cases, the severe ones had lower lymphocyte counts and higher plasma levels of Pt, APTT, d-dimer, lactate dehydrogenase, PCT, ALB, C-reactive protein, and aspartate aminotransferase. This study demonstrates the clinic features and therapies of 135 COVID-19 patients. Kaletra and TCM played an important role in the treatment of the viral pneumonia. Further studies are required to explore the role of Kaletra and TCM in the treatment of COVID-19.

Accession Number: WOS:000522745700001

**Article 3 of 12**

**Cross-species transmission of the newly identified coronavirus 2019-nCoV**

Ji, W (Ji, Wei); Wang, W (Wang, Wei); Zhao, XF (Zhao, Xiaofang); Zai, JJ (Zai, Junjie); Li, XG (Li, Xingguang)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 4 Special Issue: SI Pages: 433-440 DOI: 10.1002/jmv.25682 Published: APR 2020

**Abstract:**

The current outbreak of viral pneumonia in the city of Wuhan, China, was caused by a novel coronavirus designated 2019-nCoV by the World Health Organization, as determined by sequencing the viral RNA genome. Many initial patients were exposed to wildlife animals at the Huanan seafood wholesale market, where poultry, snake, bats, and other farm animals were also sold. To investigate possible virus reservoir, we have carried out comprehensive sequence analysis and comparison in conjunction with relative synonymous codon usage (RSCU) bias among different animal species based on the 2019-nCoV sequence. Results obtained from our analyses suggest that the 2019-nCoV may appear to be a recombinant virus between the bat coronavirus and an origin-unknown coronavirus. The recombination may occurred within the viral spike glycoprotein, which recognizes a cell surface receptor. Additionally, our findings suggest that 2019-nCoV has most similar genetic information with bat coronavirus and most similar codon usage bias with snake. Taken together, our results suggest that homologous recombination may occur and contribute to the 2019-nCoV cross-species transmission.

Accession Number: WOS:000514263400007

**Article 4 of 12**

**Analyzing the epidemiological outbreak of COVID-19: A visual exploratory data analysis approach**

Dey, SK (Dey, Samrat K.); Rahman, MM (Rahman, Md. Mahbubur); Siddiqi, UR (Siddiqi, Umme R.); Howlader, A (Howlader, Arpita)

JOURNAL OF MEDICAL VIROLOGY DOI: 10.1002/jmv.25743 Early Access Date: MAR 2020
Abstract:

There is an obvious concern globally regarding the fact about the emerging coronavirus 2019 novel coronavirus (2019-nCoV) as a worldwide public health threat. As the outbreak of COVID-19 causes by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) progresses within China and beyond, rapidly available epidemiological data are needed to guide strategies for situational awareness and intervention. The recent outbreak of pneumonia in Wuhan, China, caused by the SARS-CoV-2 emphasizes the importance of analyzing the epidemiological data of this novel virus and predicting their risks of infecting people all around the globe. In this study, we present an effort to compile and analyze epidemiological outbreak information on COVID-19 based on the several open datasets on 2019-nCoV provided by the Johns Hopkins University, World Health Organization, Chinese Center for Disease Control and Prevention, National Health Commission, and DXY. An exploratory data analysis with visualizations has been made to understand the number of different cases reported (confirmed, death, and recovered) in different provinces of China and outside of China. Overall, at the outset of an outbreak like this, it is highly important to readily provide information to begin the evaluation necessary to understand the risks and begin containment activities.

Accession Number: WOS:000519094100001

Article 5 of 12

Immunoinformatics-aided identification of T cell and B cell epitopes in the surface glycoprotein of 2019-nCoV

Baruah, V (Baruah, Vargab); Bose, S (Bose, Sujoy)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 5 Pages: 495-500 DOI: 10.1002/jmv.25698 Early Access Date: MAR 2020 Published: MAY 2020

Abstract:

The 2019 novel coronavirus (2019-nCoV) outbreak has caused a large number of deaths with thousands of confirmed cases worldwide, especially in East Asia. This study took an immunoinformatics approach to identify significant cytotoxic T lymphocyte (CTL) and B cell epitopes in the 2019-nCoV surface glycoprotein. Also, interactions between identified CTL epitopes and their corresponding major histocompatibility complex (MHC) class I supertype representatives prevalent in China were studied by molecular dynamics simulations. We identified five CTL epitopes, three sequential B cell epitopes and five discontinuous B cell epitopes in the viral surface glycoprotein. Also, during simulations, the CTL epitopes were observed to be binding MHC class I peptide-binding grooves via multiple contacts, with continuous hydrogen bonds and salt bridge anchors, indicating their potential in generating immune responses. Some of these identified epitopes can be potential candidates for the development of 2019-nCoV vaccines.

Accession Number: WOS:000517679900001
Article 6 of 12

Genomic variance of the 2019-nCoV coronavirus

Ceraolo, C (Ceraolo, Carmine); Giorgi, FM (Giorgi, Federico M.)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 5 Pages: 522-528 DOI: 10.1002/jmv.25700 Early Access Date: FEB 2020 Published: MAY 2020

Abstract:

There is a rising global concern for the recently emerged novel coronavirus (2019-nCoV). Full genomic sequences have been released by the worldwide scientific community in the last few weeks to understand the evolutionary origin and molecular characteristics of this virus. Taking advantage of all the genomic information currently available, we constructed a phylogenetic tree including also representatives of other coronaviridae, such as Bat coronavirus (BCoV) and severe acute respiratory syndrome. We confirm high sequence similarity (>99%) between all sequenced 2019-nCoVs genomes available, with the closest BCoV sequence sharing 96.2% sequence identity, confirming the notion of a zoonotic origin of 2019-nCoV. Despite the low heterogeneity of the 2019-nCoV genomes, we could identify at least two hypervariable genomic hotspots, one of which is responsible for a Serine/Leucine variation in the viral ORF8-encoded protein. Finally, we perform a full proteomic comparison with other coronaviridae, identifying key aminoacidic differences to be considered for antiviral strategies deriving from previous anti-coronavirus approaches.

Accession Number: WOS:000517439500001

Article 7 of 12

Potential of large "first generation" human-to-human transmission of 2019-nCoV

Li, XG (Li, Xingguang); Zai, JJ (Zai, Junjie); Wang, XM (Wang, Xiaomei); Li, Y (Li, Yi)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 4 Special Issue: SI Pages: 448-454 DOI: 10.1002/jmv.25693 Early Access Date: FEB 2020 Published: APR 2020

Abstract:

To investigate the genetic diversity, time origin, and evolutionary history of the 2019-nCoV outbreak in China and Thailand, a total of 12 genome sequences of the virus with known sampling date (24 December 2019 and 13 January 2020) and geographic location (primarily Wuhan city, Hubei Province, China, but also Bangkok, Thailand) were analyzed. Phylogenetic and likelihood-mapping analyses of these genome sequences were performed. On the basis of our results, the star-like signal and topology of 2019-nCoV may be indicative of potentially large "first generation" human-to-human virus transmission. We estimated that 2019-nCoV likely originated in Wuhan on 9 November 2019 (95% credible interval: 25 September 2019 and 19 December 2019), and that Wuhan is the major hub for the spread of the 2019-nCoV outbreak in China and elsewhere. Our results could be useful for designing effective prevention strategies for 2019-nCoV in China and beyond.

Accession Number: WOS:000513291800001
Article 8 of 12

Transmission dynamics and evolutionary history of 2019-nCoV

Li, XG (Li, Xingguang); Wang, W (Wang, Wei); Zhao, XF (Zhao, Xiaofang); Zai, JJ (Zai, Junjie); Zhao, Q (Zhao, Qiang); Li, Y (Li, Yi); Chaillon, A (Chaillon, Antoine)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 5 Pages: 501-511 DOI: 10.1002/jmv.25701 Early Access Date: FEB 2020 Published: MAY 2020

Abstract:

To investigate the time origin, genetic diversity, and transmission dynamics of the recent 2019-nCoV outbreak in China and beyond, a total of 32 genomes of virus strains sampled from China, Thailand, and the USA with sampling dates between 24 December 2019 and 23 January 2020 were analyzed. Phylogenetic, transmission network, and likelihood-mapping analyses of the genome sequences were performed. On the basis of the likelihood-mapping analysis, the increasing tree-like signals (from 0% to 8.2%, 18.2%, and 25.4%) over time may be indicative of increasing genetic diversity of 2019-nCoV in human hosts. We identified three phylogenetic clusters using the Bayesian inference framework and three transmission clusters using transmission network analysis, with only one cluster identified by both methods using the above genome sequences of 2019-nCoV strains. The estimated mean evolutionary rate for 2019-nCoV ranged from $1.7926 \times 10^{-3}$ to $1.8266 \times 10^{-3}$ substitutions per site per year. On the basis of our study, undertaking epidemiological investigations and genomic data surveillance could positively impact public health in terms of guiding prevention efforts to reduce 2019-nCOV transmission in real-time.

Accession Number: WOS:000513293400001

Article 9 of 12

The first two cases of 2019-nCoV in Italy: Where they come from?

Giovanetti, M (Giovanetti, Marta); Benvenuto, D (Benvenuto, Domenico); Angeletti, S (Angeletti, Silvia); Ciccozzi, M (Ciccozzi, Massimo)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 5 Pages: 518-521 DOI: 10.1002/jmv.25699 Early Access Date: FEB 2020 Published: MAY 2020

Abstract:

A novel Coronavirus, 2019-nCoV, has been identified as the causal pathogen of an ongoing epidemic, with the first cases reported in Wuhan, China, last December 2019, and has since spread to other countries worldwide, included Europe and very recently Italy. In this short report, phylogenetic reconstruction was used to better understand the transmission dynamics of the virus from its first introduction in China focusing on the more recent evidence of infection in a couple of Chinese tourists arrived in Italy on 23rd January 2020 and labeled as Coronavirus Italian cases. A maximum clade credibility tree has been built using a dataset of 54 genome sequences of 2019-nCoV plus two closely related bat strains (SARS-like CoV) available in GenBank. Bayesian time-scaled phylogenetic analysis was implemented in BEAST 1.10.4. The Bayesian phylogenetic reconstruction showed that 2019-2020 nCoV firstly introduced in Wuhan on 25 November 2019, started epidemic transmission reaching many countries worldwide, including Europe and Italy where the two strains isolated dated back 19 January 2020, the same that the Chinese tourists arrived
in Italy. Strains isolated outside China were intermixed with strains isolated in China as evidence of likely imported cases in Rome, Italy, and Europe, as well. In conclusion, this report suggests that further spread of 2019-nCoV epidemic was supported by human mobility and that quarantine of suspected or diagnosed cases is useful to prevent further transmission. Viral genome phylogenetic analysis represents a useful tool for the evaluation of transmission dynamics and preventive action.

Accession Number: WOS:000512724700001

**Article 10 of 12**

**Updated understanding of the outbreak of 2019 novel coronavirus (2019-nCoV) in Wuhan, China**

Wang, WE (Wang, Weier); Tang, JM (Tang, Jianming); Wei, FQ (Wei, Fangqiang)

JOURNAL OF MEDICAL VIROLOGY Volume: 92 Issue: 4 Special Issue: SI Pages: 441-447 DOI: 10.1002/jmv.25689 Early Access Date: FEB 2020 Published: APR 2020

**Abstract:**

To help health workers and the public recognize and deal with the 2019 novel coronavirus (2019-nCoV) quickly, effectively, and calmly with an updated understanding. A comprehensive search from Chinese and worldwide official websites and announcements was performed between 1 December 2019 and 9:30 am 26 January 2020 (Beijing time). A latest summary of 2019-nCoV and the current outbreak was drawn. Up to 24 pm, 25 January 2020, a total of 1975 cases of 2019-nCoV infection were confirmed in mainland China with a total of 56 deaths having occurred. The latest mortality was approximately 2.84% with a total of 2684 cases still suspected. The China National Health Commission reported the details of the first 17 deaths up to 24 pm, 22 January 2020. The deaths included 13 males and 4 females. The median age of the people who died was 75 (range 48-89) years. Fever (64.7%) and cough (52.9%) were the most common first symptoms among those who died. The median number of days from the occurrence of the first symptom to death was 14.0 (range 6-41) days, and it tended to be shorter among people aged 70 years or more (11.5 [range 6-19] days) than those aged less than 70 years (20 [range 10-41] days; P = .033). The 2019-nCoV infection is spreading and its incidence is increasing nationwide. The first deaths occurred mostly in elderly people, among whom the disease might progress faster. The public should still be cautious in dealing with the virus and pay more attention to protecting the elderly people from the virus.

Accession Number: WOS:00051272790001

**Article 11 of 12**

**Potential Maternal and Infant Outcomes from Coronavirus 2019-nCoV (SARS-CoV-2) Infecting Pregnant Women: Lessons from SARS, MERS, and Other Human Coronavirus Infections**

Schwartz, DA (Schwartz, David A.); Graham, AL (Graham, Ashley L.)

VIRUSES-BASEL Volume: 12 Issue: 2 Article Number: 194 DOI: 10.3390/v12020194 Published: FEB 2020

**Abstract:**
In early December 2019 a cluster of cases of pneumonia of unknown cause was identified in Wuhan, a city of 11 million persons in the People's Republic of China. Further investigation revealed these cases to result from infection with a newly identified coronavirus, initially termed 2019-nCoV and subsequently SARS-CoV-2. The infection moved rapidly through China, spread to Thailand and Japan, extended into adjacent countries through infected persons travelling by air, eventually reaching multiple countries and continents. Similar to such other coronaviruses as those causing the Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS), the new coronavirus was reported to spread via natural aerosols from human-to-human. In the early stages of this epidemic the case fatality rate is estimated to be approximately 2%, with the majority of deaths occurring in special populations. Unfortunately, there is limited experience with coronavirus infections during pregnancy, and it now appears certain that pregnant women have become infected during the present 2019-nCoV epidemic. In order to assess the potential of the Wuhan 2019-nCoV to cause maternal, fetal and neonatal morbidity and other poor obstetrical outcomes, this communication reviews the published data addressing the epidemiological and clinical effects of SARS, MERS, and other coronavirus infections on pregnant women and their infants. Recommendations are also made for the consideration of pregnant women in the design, clinical trials, and implementation of future 2019-nCoV vaccines.

Accession Number: WOS:000521256600075

Article 12 of 12

Return of the Coronavirus: 2019-nCoV

Gralinski, LE (Gralinski, Lisa E.); Menachery, VD (Menachery, Vineet D.)

VIRUSES-BASEL Volume: 12 Issue: 2 Article Number: 135 DOI: 10.3390/v12020135 Published: FEB 2020

Abstract:

The emergence of a novel coronavirus (2019-nCoV) has awakened the echoes of SARS-CoV from nearly two decades ago. Yet, with technological advances and important lessons gained from previous outbreaks, perhaps the world is better equipped to deal with the most recent emergent group 2B coronavirus.

Accession Number: WOS:000510516800001
PUBLIC ENVIRONMENTAL OCCUPATIONAL HEALTH:
Community pharmacist in public health emergencies: Quick to action against the coronavirus 2019-nCoV outbreak

Ung, COL (Ung, Carolina Oi Lam)

RESEARCH IN SOCIAL & ADMINISTRATIVE PHARMACY Volume: 16 Issue: 4 Pages: 583-586 DOI: 10.1016/j.sapharm.2020.02.003 Published: APR 2020

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.

Accession Number: WOS:000520862600017

Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts

Hellewell, J (Hellewell, Joel); Abbott, S (Abbott, Sam); Gimma, A (Gimma, Amy); Bosse, NI (Bosse, Nikos, I); Jarvis, CI (Jarvis, Christopher, I); Russell, TW (Russell, Timothy W.); Munday, JD (Munday, James D.); Kucharski, AJ (Kucharski, Adam J.); Edmunds, WJ (Edmunds, W. John); Funk, S (Funk, Sebastian); Eggo, RM (Eggo, Rosalind M.)

Group Ctr Math Modelling infect Dis COVI

LANCET GLOBAL HEALTH Volume: 8 Issue: 4 Pages: E488-E496 DOI: 10.1016/S2214-109X(20)30074-7 Published: APR 2020

Abstract:
Background Isolation of cases and contact tracing is used to control outbreaks of infectious diseases, and has been used for coronavirus disease 2019 (COVID-19). Whether this strategy will achieve control depends on characteristics of both the pathogen and the response. Here we use a mathematical model to assess if isolation and contact tracing are able to control onwards transmission from imported cases of COVID-19.

Methods We developed a stochastic transmission model, parameterised to the COVID-19 outbreak. We used the model to quantify the potential effectiveness of contact tracing and isolation of cases at controlling a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)-like pathogen. We considered scenarios that varied in the number of initial cases, the basic reproduction number (R_0), the delay from symptom onset to isolation, the probability that contacts were traced, the proportion of transmission that occurred before symptom onset, and the proportion of subclinical infections. We assumed isolation prevented all further transmission in the model. Outbreaks were deemed controlled if transmission ended within 12 weeks or before 5000 cases in total. We
measured the success of controlling outbreaks using isolation and contact tracing, and quantified the weekly maximum number of cases traced to measure feasibility of public health effort.

Findings Simulated outbreaks starting with five initial cases, an R-0 of 1.5, and 0% transmission before symptom onset could be controlled even with low contact tracing probability; however, the probability of controlling an outbreak decreased with the number of initial cases, when R-0 was 2.5 or 3.5 and with more transmission before symptom onset. Across different initial numbers of cases, the majority of scenarios with an R-0 of 1.5 were controllable with less than 50% of contacts successfully traced. To control the majority of outbreaks, for R-0 of 2.5 more than 70% of contacts had to be traced, and for an R-0 of 3.5 more than 90% of contacts had to be traced. The delay between symptom onset and isolation had the largest role in determining whether an outbreak was controllable when R-0 was 1.5. For R-0 values of 2.5 or 3.5, if there were 40 initial cases, contact tracing and isolation were only potentially feasible when less than 1% of transmission occurred before symptom onset.

Interpretation In most scenarios, highly effective contact tracing and case isolation is enough to control a new outbreak of COVID-19 within 3 months. The probability of control decreases with long delays from symptom onset to isolation, fewer cases ascertained by contact tracing, and increasing transmission before symptoms. This model can be modified to reflect updated transmission characteristics and more specific definitions of outbreak control to assess the potential success of local response efforts. Copyright (c) 2020 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

Accession Number: WOS:000521078600021

Article 3 of 11

Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China

Wang, YN (Wang, Yenan); Di, Y (Di, Yu); Ye, JJ (Ye, Junjie); Wei, WB (Wei, Wenbin)

PSYCHOLOGY HEALTH & MEDICINE DOI: 10.1080/13548506.2020.1746817 Early Access Date: MAR 2020

Abstract:

Background: As COVID-19 occurs suddenly and is highly contagious, this will inevitably cause people anxiety, depression, etc. The study on the public psychological states and its related factors during the COVID-19 outbreak is of practical significance. Methods: 600 valid questionnaires were received. The Self-Rating Anxiety Scale (SAS) and the Self-Rating Depression Scale (SDS) were used. Results: Females’ anxiety risk was 3.01 times compared to males (95% CI 1.39-6.52). Compared with people below 40 years old, the anxiety risk of people above 40 years old was 0.40 times (95% CI 0.16-0.99). SDS results indicated that the difference between education level and occupation was statistically significant (p = 0.024, 0.005). Compared to people with a master's degree or above, those with a bachelor's degree group had a depression risk of 0.39 times (95% CI 0.17-0.87). Compared with professionals, industrial service workers and other staff had a depression risk of 0.31 times (95% CI 0.15-0.65) and 0.38 times (95% CI 0.15-0.93). Conclusions: 600 questionnaire participants were psychologically stable. Non-anxiety and non-depression rates were 93.67% and 82.83%, respectively. There were anxiety in 6.33% and depression in 17.17%. Therefore, we should pay attention to the psychological states of the public.
**Article 4 of 11**

**Responding to the COVID-19 pandemic in complex humanitarian crises**

Poole, DN (Poole, Danielle N.); Escudero, DJ (Escudero, Daniel J.); Gostin, LO (Gostin, Lawrence O.); Leblang, D (Leblang, David); Talbot, EA (Talbot, Elizabeth A.)

INTERNATIONAL JOURNAL FOR EQUITY IN HEALTH Volume: 19 Issue: 1 Article Number: 41 DOI: 10.1186/s12939-020-01162-y Published: MAR 21 2020

Accession Number: WOS:000521975400001

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**Article 5 of 11**

**On a knife's edge of a COVID-19 pandemic: is containment still possible?**

MacIntyre, CR (MacIntyre, C. Raina)

PUBLIC HEALTH RESEARCH & PRACTICE Volume: 30 Issue: 1 Article Number: 3012000 DOI: 10.17061/phrp3012000 Published: MAR 2020

Accession Number: WOS:000519719100005

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**Article 6 of 11**

**The global spread of 2019-nCoV: a molecular evolutionary analysis**

Benvenuto, D (Benvenuto, Domenico); Giovanetti, M (Giovanetti, Marta); Salemi, M (Salemi, Marco); Prosperi, M (Prosperi, Mattia); De Flora, C (De Flora, Cecilia); Alcantara, LC (Junior Alcantara, Luiz Carlos); Angeletti, S (Angeletti, Silvia); Ciccozzi, M (Ciccozzi, Massimo)

PATHOGENS AND GLOBAL HEALTH Volume: 114 Issue: 2 Pages: 64-67 DOI: 10.1080/20477724.2020.1725339 Early Access Date: FEB 2020 Published: FEB 17 2020

**Abstract:**

The global spread of the 2019-nCoV is continuing and is fast moving, as indicated by the WHO raising the risk assessment to high. In this article, we provide a preliminary phylodynamic and phylogeographic analysis of this new virus. A Maximum Clade Credibility tree has been built using the 29 available whole genome sequences of 2019-nCoV and two whole genome sequences that are highly similar sequences from Bat SARS-like Coronavirus available in GeneBank. We are able to clarify the mechanism of transmission among the countries which have provided the 2019-nCoV sequence isolates from their patients. The Bayesian phylogeographic reconstruction shows that the 2019-2020 nCoV most probably originated from the Bat SARS-like Coronavirus circulating in the Rhinolophus bat family. In agreement with epidemiological observations, the most likely geographic origin of the new outbreak was the city of Wuhan, China, where 2019-nCoV time of the most recent common ancestor emerged, according to molecular clock analysis, around November 25(th), 2019. These results, together with previously
Recorded epidemics, suggest a recurring pattern of periodical epizootic outbreaks due to Betacoronavirus. Moreover, our study describes the same population genetic dynamic underlying the SARS 2003 epidemic, and suggests the urgent need for the development of effective molecular surveillance strategies of Betacoronavirus among animals and Rhinolophus of the bat family.

Accession Number: WOS:000513613400001

**Article 7 of 11**

**Epidemiologic characteristics of early cases with 2019 novel coronavirus (2019-nCoV) disease in Korea**

Ki, M (Ki, Moran)

Group Task Force 2019-nCoV

EPIDEMIOLOGY AND HEALTH Volume: 42 Article Number: e2020007 DOI: 10.4178/epih.e2020007 Published: FEB 9 2020

**Abstract:**

In about 20 days since the diagnosis of the first case of the 2019 novel coronavirus (2019-nCoV) in Korea on January 20, 2020, 28 cases have been confirmed. Fifteen patients (53.6%) of them were male and median age of was 42 years (range, 20-73). Of the confirmed cases, 16, 9, and 3 were index (57.2%), first-generation (32.1%), and second-generation (10.7%) cases, respectively. All first-generation and second-generation patients were family members or intimate acquaintances of the index cases with close contacts. Fifteen among 16 index patients had entered Korea from January 19 to 24, 2020 while 1 patient had entered Korea on January 31, 2020. The average incubation period was 3.9 days (median, 3.0), and the reproduction number was estimated as 0.48. Three of the confirmed patients were asymptomatic when they were diagnosed. Epidemiological indicators will be revised with the availability of additional data in the future. Sharing epidemiological information among researchers worldwide is essential for efficient preparation and response in tackling this new infectious disease.

Accession Number: WOS:000521248000001

**Article 8 of 11**

**Air Medical Evacuation of Nepalese Citizen During Epidemic of COVID-19 from Wuhan to Nepal**

Raibhandari, B (Raibhandari, Bibek); Phuyal, N (Phuyal, Naveen); Shrestha, B (Shrestha, Bikal); Thapa, M (Thapa, Moon)

JOURNAL OF NEPAL MEDICAL ASSOCIATION Volume: 58 Issue: 222 Pages: 125+ DOI: 10.31729/jnma.4857 Published: FEB 2020

**Abstract:**

In December 2019, the world was disrupted by the news of a new strain of virus known as Novel Corona virus, taking lives of many in China. Wuhan, the capital of Central China’s Hubei province is said to be the place where the outbreak started. The city went on lockdown as the disease spread
rapidly. After the lockdown, most countries like India and Bangladesh airlifted their citizens who were studying in Wuhan. Similarly, Nepal also has many youth studying medicine in Wuhan. Pleas for help from the students reached the government. This was the first encounter of such experience for Nepal government. With the help of Ministry of Health, Ministry of foreign affair, Health Emergency Organizing committee, Epidemiology and Disease Control Division, Nepal Army Hospital, Nepal Police Hospital, Waste Management team, Nepal Ambulance service, Tribhuvan international Airport Authorities and Royal Airlines the government of Nepal planned, organized and successfully brought back all the 175 students on 15th February 2019 from Wuhan, China. The present article aims to share the experience, the challenges faced and recommendations for future similar cases.

Accession Number: WOS:000519193500014

Article 9 of 11

Outbreak investigation in cargo ship in times of COVID-19 crisis, Port of Santos, Brazil

Fernandes, EG (Fernandes, Eder Gatti); Santos, JD (Santos, Janice da Silva); Sato, HK (Sato, Helena Keico)

REVISTA DE SAUDE PUBLICA Volume: 54 Article Number: 34 DOI: 10.11606/s1518-8787.2020054002461 Published: 2020

Abstract:

In February 2020, a Chinese cargo ship docked at the Port of Santos with reports of crew members with a feverish and respiratory condition. A team was gathered to verify the existence of suspected cases of COVID-19 inside the vessel and define its clearance. All 25 crew members were interviewed, and no suspected cases were found. The vessel was then cleared for port activities. The investigation resulted from the implementation of the contingency plan to face a public health emergency of international importance and several surveillance entities cooperated.

Accession Number: WOS:000522849700004

Article 10 of 11

Clinical trials on drug repositioning for COVID-19 treatment

Rosa, SGV (Viveiros Rosa, Sandro G.); Santos, WC (Santos, Wilson C.)

REVISTA PANAMERICANA DE SALUD PUBLICA-PAN AMERICAN JOURNAL OF PUBLIC HEALTH Volume: 44 Article Number: e40 DOI: 10.26633/RPSP.2020.40 Published: 2020

Abstract:

The World Health Organization (WHO) was informed on December 2019 about a coronavirus pneumonia outbreak in Wuhan, Hubei province (China). Subsequently, on March 12, 2020, 125,048 cases and 4,614 deaths were reported. Coronavirus is an enveloped RNA virus, from the genus Betacoronavirus, that is distributed in birds, humans, and other mammals. WHO has named the
novel coronavirus disease as COVID-19. More than 80 clinical trials have been launched to test coronavirus treatment, including some drug repurposing or repositioning for COVID-19. Hence, we performed a search in March 2020 of the clinicaltrials.gov database. The eligibility criteria for the retrieved studies were: contain a clinicaltrials.gov base identifier number; describe the number of participants and the period for the study; describe the participants' clinical conditions; and utilize interventions with medicines already studied or approved for any other disease in patients infected with the novel coronavirus SARS-CoV-2 (2019-nCoV). It is essential to emphasize that this article only captured trials listed in the clinicaltrials.gov database. We identified 24 clinical trials, involving more than 20 medicines, such as human immunoglobulin, interferons, chloroquine, hydroxychloroquine, arbidol, remdesivir, favipiravir, lopinavir, ritonavir, oseltamivir, methylprednisolone, bevacizumab, and traditional Chinese medicines (TCM). Although drug repurposing has some limitations, repositioning clinical trials may represent an attractive strategy because they facilitate the discovery of new classes of medicines; they have lower costs and take less time to reach the market; and there are existing pharmaceutical supply chains for formulation and distribution.

Accession Number: WOS:000521946500001

Article 11 of 11

Passengers' destinations from China: low risk of Novel Coronavirus (2019-nCoV) transmission into Africa and South America

Haider, N (Haider, Najmul); Yavlinsky, A (Yavlinsky, Alexei); Simons, D (Simons, David); Osman, AY (Osman, Abdinasir Yusuf); Ntoumi, F (Ntoumi, Francine); Zumla, A (Zumla, Alimuddin); Kock, R (Kock, Richard)

EPIDEMIOLOGY AND INFECTION Volume: 148 Article Number: e41 DOI: 10.1017/S0950268820000424 Published: 2020

Abstract:

Novel Coronavirus (2019-nCoV [SARS-COV-2]) was detected in humans during the last week of December 2019 at Wuhan city in China, and caused 24 554 cases in 27 countries and territories as of 5 February 2020. The objective of this study was to estimate the risk of transmission of 2019-nCoV through human passenger air flight from four major cities of China (Wuhan, Beijing, Shanghai and Guangzhou) to the passengers' destination countries. We extracted the weekly simulated passengers' end destination data for the period of 1-31 January 2020 from FLIRT, an online air travel dataset that uses information from 800 airlines to show the direct flight and passengers' end destination. We estimated a risk index of 2019-nCoV transmission based on the number of travellers to destination countries, weighted by the number of confirmed cases of the departed city reported by the World Health Organization (WHO). We ranked each country based on the risk index in four quantiles (4(th) quantile being the highest risk and 1(st) quantile being the lowest risk). During the period, 388 287 passengers were destined for 1297 airports in 168 countries or territories across the world. The risk index of 2019-nCoV among the countries had a very high correlation with the WHO-reported confirmed cases (0.97). According to our risk score classification, of the countries that reported at least one Coronavirus-infected pneumonia (COVID-19) case as of 5 February 2020, 24 countries were in the 4(th) quantile of the risk index, two in the 3(rd) quantile, one in the 2(nd) quantile and none in the 1(st) quantile. Outside China, countries with a higher risk of 2019-nCoV transmission are Thailand, Cambodia, Malaysia, Canada and the USA.
all of which reported at least one case. In pan-Europe, UK, France, Russia, Germany and Italy; in North America, USA and Canada; in Oceania, Australia had high risk, all of them reported at least one case. In Africa and South America, the risk of transmission is very low with Ethiopia, South Africa, Egypt, Mauritius and Brazil showing a similar risk of transmission compared to the risk of any of the countries where at least one case is detected. The risk of transmission on 31 January 2020 was very high in neighbouring Asian countries, followed by Europe (UK, France, Russia and Germany), Oceania (Australia) and North America (USA and Canada). Increased public health response including early case recognition, isolation of identified case, contract tracing and targeted airport screening, public awareness and vigilance of health workers will help mitigate the force of further spread to naive countries.

Accession Number: WOS:000518130400001
ONCOLOGY :
Article 1 of 8

**International perspectives: Impact of the COVID-19 Pandemic on cytology**

Rossi, ED (Rossi, Esther Diana); Pantanowitz, L (Pantanowitz, Liron)

CANCER CYTOPATHOLOGY DOI: 10.1002/cncy.22275 Early Access Date: APR 2020

Accession Number: WOS:000524319400001

Article 2 of 8

**Significance of clinical phenomes of patients with COVID-19 infection: A learning from 3795 patients in 80 reports**

Zhang, LL (Zhang, Linlin); Wang, DNC (Wang, Diane C.); Huang, QH (Huang, Qihong); Wang, XD (Wang, Xiangdong)

CLINICAL AND TRANSLATIONAL MEDICINE DOI: 10.1002/ctm2.17 Early Access Date: APR 2020

**Abstract:**

A new coronavirus SARS-CoV-2 has caused outbreaks in multiple countries and the number of cases is rapidly increasing through human-to-human transmission. Clinical phenomes of patients with SARS-CoV-2 infection are critical in distinguishing it from other respiratory infections. The extent and characteristics of those phenomes varied depending on the severities of the infection, for example, beginning with fever or a mild cough, progressed with signs of pneumonia, and worsened with severe or even fatal respiratory difficulty in acute respiratory distress syndrome. We summarized clinical phenomes of 3795 patients with COVID-19 based on 80 published reports from the onset of outbreak to March 2020 to emphasize the importance and specificity of those phenomes in diagnosis and treatment of infection, and evaluate the impact on medical services. The data show that the incidence of male patients was higher than that of females and the level of C-reactive protein was increased as well as most patients' imaging included ground-glass opacity. Clinical phenomes of SARS-CoV-2 infection were compared with those of SARS-CoV and MERS-CoV infections. There is an urgent need to develop an artificial intelligence-based machine learning capacity to analyze and integrate radiomics- or imaging-based, patient-based, clinician-based, and molecular measurements-based data to fight the outbreak of COVID-19 and enable more efficient responses to unknown infections in future.

Accession Number: WOS:000523201500001
Article 3 of 8

Acute lung injury in patients with COVID-19 infection

Li, L (Li, Liyang); Huang, QH (Huang, Qihong); Wang, DC (Wang, Diane C.); Ingbar, DH (Ingbar, David H.); Wang, XD (Wang, Xiangdong)

CLINICAL AND TRANSLATIONAL MEDICINE DOI: 10.1002/ctm2.16 Early Access Date: MAR 2020

Abstract:

During the 2020 Spring Festival in China, the outbreak of a novel coronavirus, named COVID-19 by WHO, brought on a worldwide panic. According to the clinical data of infected patients, radiologic evidence of lung edema is common and deserves clinical attention. Lung edema is a manifestation of acute lung injury (ALI) and may progress to hypoxemia and potentially acute respiratory distress syndrome (ARDS). Patients diagnosed with ARDS have poorer prognosis and potentially higher mortality. Although no effective treatment is formally approved for COVID-19 infection, support of ventilation with oxygen therapy and sometimes mechanical ventilation is often required. Treatment with systemic and/or local glucocorticoids might be helpful to alleviate the pulmonary inflammation and edema, which may decrease the development and/or consequences of ARDS. In this article, we focus on the lung edema and ALI of patients with this widely transmitted COVID-19 infection in order to provide clinical indications and potential therapeutic targets for clinicians and researchers.

Accession Number: WOS:000522506100001

Article 4 of 8

COVID-19 containment: China provides important lessons for global response

Zhang, SX (Zhang, Shuxian); Wang, ZZ (Wang, Zezhou); Chang, RJ (Chang, Ruijie); Wang, HW (Wang, Huwen); Xu, C (Xu, Chen); Yu, XY (Yu, Xiaoyue); Tsamlag, L (Tsamlag, Lhakpa); Dong, YQ (Dong, Yinqiao); Wang, H (Wang, Hui); Cai, Y (Cai, Yong)

FRONTIERS OF MEDICINE DOI: 10.1007/s11684-020-0766-9 Early Access Date: MAR 2020

Abstract:

The world must act fast to contain wider international spread of the epidemic of COVID-19 now. The unprecedented public health efforts in China have contained the spread of this new virus. Measures taken in China are currently proven to reduce human-to-human transmission successfully. We summarized the effective intervention and prevention measures in the fields of public health response, clinical management, and research development in China, which may provide vital lessons for the global response. It is really important to take collaborative actions now to save more lives from the pandemic of COVID-19.

Accession Number: WOS:000521713100001
Article 5 of 8

Protecting healthcare personnel from 2019-nCoV infection risks: lessons and suggestions

Zhang, ZR (Zhang, Zhiruo); Liu, SL (Liu, Shelan); Xiang, M (Xiang, Mi); Li, SJ (Li, Shijian); Zhao, DH (Zhao, Dahai); Huang, CL (Huang, Chaolin); Chen, SJ (Chen, Saijuan)

FRONTIERS OF MEDICINE  DOI: 10.1007/s11684-020-0765-x  Early Access Date: MAR 2020

Abstract:

The outbreak of a novel Coronavirus disease (COVID-19, caused by the 2019-nCoV infection) in December 2019 is one of the most severe public health emergencies since the founding of People's Republic of China in 1949. Healthcare personnel (HCP) nationwide are facing heavy workloads and high risk of infection, especially those who care for patients at the epicenter of the outbreak, Hubei Province. Sadly, as of February 20, 2020, over two thousand COVID-19 cases are confirmed among HCP from 476 hospitals nationwide, with nearly 90% of them from Hubei Province. Based on literature search and interviews with some HCP working at Wuhan, capital city of Hubei, we have summarized some of the effective measures taken to reduce infection among HCP, and also made suggestions for improving occupational safety during an infectious disease outbreak. The experience and lessons learned should be a valuable asset for international health community to contain the ongoing COVID-19 epidemic around the world.

Accession Number: WOS:000521713500001

Article 6 of 8

Combination of western medicine and Chinese traditional patent medicine in treating a family case of COVID-19 in Wuhan

Ni, L (Ni, Li); Zhou, L (Zhou, Ling); Zhou, M (Zhou, Min); Zhao, JP (Zhao, Jianping); Wang, DW (Wang, Dao Wen)

FRONTIERS OF MEDICINE  DOI: 10.1007/s11684-020-0757-x  Early Access Date: MAR 2020

Abstract:

In December 2019, an outbreak of novel Coronavirus (2019-nCoV) occurred in Wuhan, Hubei Province, China. By February 14, 2020, it has led to 66 492 confirmed patients in China and high mortality up to similar to 2.96% (1123/37 914) in Wuhan. Here we report the first family case of coronavirus disease 2019 (COVID-19) confirmed in Wuhan and treated using the combination of western medicine and Chinese traditional patent medicine Shuanghuanglian oral liquid (SHL). This report describes the identification, diagnosis, clinical course, and management of three cases from a family, suggests the expected therapeutic effects of SHL on COVID-19, and warrants further clinical trials.

Accession Number: WOS:000520677100001
A quickly, effectively screening process of novel corona virus disease 2019 (COVID-19) in children in Shanghai, China

Shi, Y (Shi, Yu); Wang, XS (Wang, Xiangshi); Liu, GB (Liu, Gongbao); Zhu, QR (Zhu, Qirong); Wan, JS (Wan, Jianshe); Yu, H (Yu, Hui); Wang, CQ (Wang, Chuanqing); Wang, LB (Wang, Libo); Zhang, MZ (Zhang, Mingzhi); Zhang, LG (Zhang, Lingen); Lu, GP (Lu, Guoping); Lu, ZJ (Lu, Zhujin); Yu, J (Yu, Jian); Qiao, ZW (Qiao, Zhongwei); Gu, Y (Gu, Ying); Shen, GM (Shen, Guomei); Xu, H (Xu, Hong); Zeng, M (Zeng, Mei); Zhai, XW (Zhai, Xiaowen); Huang, GY (Huang, Guoying)

Abstract:

Background: A recent cluster of pneumonia cases in China was caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We report the screening and diagnosis of corona virus disease 2019 (COVID-19) in our hospital.

Methods: Developed a procedure for the identification of children cases with COVID-19 in outpatient and emergency department of our hospital, then we observed how this process works.

Results: (I) There were 56 cases considered suspected cases, and 10 cases were confirmed as COVID-19. (II) Of the 10 confirmed COVID-19 cases admitted in our hospital, 5 were males and 5 were females, aged from 7 months to 11 years, the average age is 6.0 +/- 4.2 years, 6 cases were mild pneumonia, the others were upper respiratory tract infection. (III) We followed up 68 patients in isolation at home until symptoms disappeared. Non were missed in the patient's first visit. The sensitivity of this method is 100% and the specificity is 71.3%.

Conclusions: Our screening process works well, and it is also necessary to establish a screening network in the hospital.

Accession Number: WOS:000520850100093
Early estimation of the case fatality rate of COVID-19 in mainland China: a data-driven analysis

Yang, S (Yang, Shu); Cao, PH (Cao, Peihua); Du, PP (Du, Peipei); Wu, ZT (Wu, Ziting); Zhuang, ZA (Zhuang, Zian); Yang, L (Yang, Lin); Yu, X (Yu, Xuan); Zhou, Q (Zhou, Qi); Feng, XX (Feng, Xixi); Wang, XH (Wang, Xiaohui); Li, WG (Li, Weiguo); Liu, EM (Liu, Enmei); Chen, J (Chen, Ju); Chen, YL (Chen, Yaolong); He, DH (He, Daihai)

Group COVID-19 Evidence Recommendations

ANNALS OF TRANSLATIONAL MEDICINE Volume: 8 Issue: 4 Article Number: 128 DOI: 10.21037/atm.2020.02.66 Published: FEB 2020

Abstract:

Background: An ongoing outbreak of pneumonia caused by a novel coronavirus [severe acute respiratory syndrome coronavirus (SARS-CoV)-2], named COVID-19, hit a major city of China, Wuhan in December 2019 and subsequently spread to other provinces/regions of China and overseas. Several studies have been done to estimate the basic reproduction number in the early phase of this outbreak, yet there are no reliable estimates of case fatality rate (CFR) for COVID-19 to date.

Methods: In this study, we used a purely data-driven statistical method to estimate the CFR in the early phase of the COVID-19 outbreak. Daily numbers of laboratory-confirmed COVID-19 cases and deaths were collected from January 10 to February 3, 2020 and divided into three clusters: Wuhan city, other cities of Hubei province, and other provinces of mainland China. Simple linear regression model was applied to estimate the CFR from each cluster.

Results: We estimated that CFR during the first weeks of the epidemic ranges from 0.15% (95% CI: 0.12-0.18%) in mainland China excluding Hubei through 1.41% (95% CI: 1.38-1.45%) in Hubei province excluding the city of Wuhan to 5.25% (95% CI: 4.98-5.51%) in Wuhan.

Conclusions: Our early estimates suggest that the CFR of COVID-19 is lower than the previous coronavirus epidemics caused by SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV).

Accession Number: WOS:000518410000080
Autres :
An overview on Coronaviruses family from past to Covid-19: introduce some inhibitors as antiviruses from Gillan's plants

Monajjemi, M (Monajjemi, Majid); Mollaamin, F (Mollaamin, Fatemeh); Shojaei, S (Shojaei, Shahrokh)

BIOINTERFACE RESEARCH IN APPLIED CHEMISTRY Volume: 10 Issue: 3 Pages: 5575-5585 DOI: 10.33263/BRIAC103.575585 Published: JUN 15 2020

Abstract:

Among the herbal medicine that commonly used in relieving diseases we choose 4 species as the source for active constituents to be examined as its potential as anti SARS-CoV-2, namely Matrine, Cytarabine, Gemcitabine and Vidarabine from which are extracted from Gillan 's plants such as Trshvash, Chuchaq, Cote D'Couto and Khlvash in Iran. The mechanisms by which these agents exercise their antivirus action are calculated via analyzing of NMR and physical chemistry properties via docking. The drugs which are discussed in this article, some of them are in pre-clinical trials or clinical development and some are available in market such as Matrine, Cytarabine, Gemcitabine and Vidarabine. In this work, we have optimized and discussed about several active compounds which are extracted from famous plants through NMR study. These data in high-accuracy determine for anti-SARS-CoV-NSPs confirm our molecular modelling and also exhibited that Cytarabine, a compound found in Chuchaq, and Matrine from Trshvash, bind to those receptors with lower energies compared to the respected reference compounds. These finding indicated that both compounds possess better binding interaction and may inhibit the initial virus infection to the host cell

Accession Number: WOS:000522548200036

Diabetes is a risk factor for the progression and prognosis of COVID-19

Guo, WN (Guo, Weina); Li, MY (Li, Mingyue); Dong, YL (Dong, Yalan); Zhou, HF (Zhou, Haifeng); Zhang, ZL (Zhang, Zili); Tian, CX (Tian, Chunxia); Qin, RJ (Qin, Renjie); Wang, HJ (Wang, Haijun); Shen, Y (Shen, Yin); Du, KY (Du, Keye); Zhao, L (Zhao, Lei); Fan, H (Fan, Heng); Luo, SS (Luo, Shanshan); Hu, DS (Hu, Desheng)

DIABETES-METABOLISM RESEARCH AND REVIEWS Article Number: e3319 DOI: 10.1002/dmrr.3319 Early Access Date: APR 2020

Abstract:

Background To figure out whether diabetes is a risk factor influencing the progression and prognosis of 2019 novel coronavirus disease (COVID-19).

Methods A total of 174 consecutive patients confirmed with COVID-19 were studied. Demographic data, medical history, symptoms and signs, laboratory findings, chest computed tomography (CT) as well the treatment measures were collected and analysed.

Results We found that COVID-19 patients without other comorbidities but with diabetes (n = 24) were at higher risk of severe pneumonia, release of tissue injury-related enzymes, excessive
uncontrolled inflammation responses and hypercoagulable state associated with dysregulation of glucose metabolism. Furthermore, serum levels of inflammation-related biomarkers such as IL-6, C-reactive protein, serum ferritin and coagulation index, D-dimer, were significantly higher (P < .01) in diabetic patients compared with those without, suggesting that patients with diabetes are more susceptible to an inflammatory storm eventually leading to rapid deterioration of COVID-19.

Conclusions Our data support the notion that diabetes should be considered as a risk factor for a rapid progression and bad prognosis of COVID-19. More intensive attention should be paid to patients with diabetes, in case of rapid deterioration.

Accession Number: WOS:000524340900001

**Article 3 of 48**

**Minimizing the risk of COVID-19 among patients on dialysis**

Ikizler, TA (Ikizler, T. Alp); Kliger, AS (Kliger, Alan S.)

NATURE REVIEWS NEPHROLOGY DOI: 10.1038/s41581-020-0280-y Early Access Date: APR 2020

Abstract:

Patients on haemodialysis or peritoneal dialysis are likely to be at increased risk of novel coronavirus disease (COVID-19). Preventive strategies must be implemented to minimize the risk of disease transmission in dialysis facilities, including education of staff and patients, screening for COVID-19 and separation of infected or symptomatic and non-infected patients.

Accession Number: WOS:000523953300001

**Article 4 of 48**

**Influenza and obesity: its odd relationship and the lessons for COVID-19 pandemic**

Luzi, L (Luzi, Livio); Radaelli, MG (Radaelli, Maria Grazia)

ACTA DIABETOLOGICA DOI: 10.1007/s00592-020-01522-8 Early Access Date: APR 2020

Abstract:

Aims Analyze the relationship between obesity and influenza. Methods Basal hormone milieu, defective response of both innate and adaptive immune system and sedentariness are major determinants in the severity of influenza viral infection in obese patients. Being overweight not only increases the risk of infection and of complications for the single obese person, but a large prevalence of obese individuals within the population might increase the chance of appearance of more virulent viral strain, prolongs the virus shedding throughout the total population and eventually might increase overall mortality rate of an influenza pandemic. Results Waiting for the development of a vaccination against COVID-19, isolation of positive cases and social distancing are the primary interventions. Nonetheless, evidence from previous influenza pandemics suggests the following interventions aimed at improving immune response: (1) lose weight with a mild caloric restriction; (2) include AMPK activators and PPAR gamma activators in the drug treatment for obesity
associated with diabetes; and (3) practice mild-to-moderate physical exercise. Conclusions Due to prolonged viral shedding, quarantine in obese subjects should likely be longer than normal weight individuals.

Accession Number: WOS:000523578300001

Article 5 of 48

Health services provision of 48 public tertiary dental hospitals during the COVID-19 epidemic in China

Yang, Y (Yang, Yang); Zhou, Y (Zhou, Yin); Liu, XQ (Liu, Xiaoqiang); Tan, JG (Tan, Jianguo)

CLINICAL ORAL INVESTIGATIONS DOI: 10.1007/s00784-020-03267-8 Early Access Date: APR 2020

Abstract:

Objectives To assess the status of health services provision of public tertiary dental hospitals during the COVID-19 epidemic in China and to evaluate the regional difference of telehealth. Materials and methods The health services provision of public tertiary dental hospitals in China mainland during the COVID-19 epidemic was inquired. The status of non-emergency dental services, emergency dental services, and online professional consultation and the hospitals' geographical distribution were recorded and analyzed. Results All the 48 public tertiary dental hospitals suspended general non-emergency dental treatment while providing emergency dental services only. Ninety percent of them notified the change of dental services online, and 69% of them offered free online professional consultations. The penetration rate of online technology was significantly higher in the eastern region than that of the central and western regions. Conclusions There was a significant change in the health service provision of Chinese public tertiary dental hospitals during the COVID-19 epidemic and wider use of telehealth in the eastern region.

Accession Number: WOS:000523061700001

Article 6 of 48

Migraine Care in the Era of COVID-19: Clinical Pearls and Plea to Insurers

Szperka, CL (Szperka, Christina L.); Ailani, J (Ailani, Jessica); Barmherzig, R (Barmherzig, Rebecca); Klein, BC (Klein, Brad C.); Minen, MT (Minen, Mia T.); Singh, RBH (Singh, Rashmi B. Halker); Shapiro, RE (Shapiro, Robert E.)

HEADACHE DOI: 10.1111/head.13810 Early Access Date: APR 2020

Abstract:

Objective To outline strategies for the treatment of migraine which do not require in-person visits to clinic or the emergency department, and to describe ways that health insurance companies can remove barriers to quality care for migraine.
Background COVID-19 is a global pandemic causing widespread infections and death. To control the spread of infection we are called to observe "social distancing" and we have been asked to postpone any procedures which are not essential. Since procedural therapies are a mainstay of headache care, the inability to do procedures could negatively affect our patients with migraine. In this manuscript we review alternative therapies, with particular attention to those which may be contra-indicated in the setting of COVID-19 infection.

Design/Results The manuscript reviews the use of telemedicine visits and acute, bridge, and preventive therapies for migraine. We focus on evidence-based treatment where possible, but also describe "real world" strategies which may be tried. In each section we call out areas where changes to rules from commercial health insurance companies would facilitate better migraine care.

Conclusions Our common goal as health care providers is to maximize the health and safety of our patients. Successful management of migraine with avoidance of in-person clinic and emergency department visits further benefits the current urgent societal goal of maintaining social distance to contain the COVID-19 pandemic.

Accession Number: WOS:000523235300001

Article 7 of 48

Controversies of renin-angiotensin system inhibition during the COVID-19 pandemic

South, AM (South, Andrew M.); Tomlinson, L (Tomlinson, Laurie); Edmonston, D (Edmonston, Daniel); Hiremath, S (Hiremath, Swapnil); Sparks, MA (Sparks, Matthew A.)

NATURE REVIEWS NEPHROLOGY DOI: 10.1038/s41581-020-0279-4 Early Access Date: APR 2020

Abstract:

The current COVID-19 pandemic is associated with unprecedented morbidity and mortality. Early reports suggested an association between disease severity and hypertension but did not account for sources of confounding. However, the responsible virus - SARS-CoV-2 - gains entry to host cells via angiotensin-converting enzyme 2 (ACE2), highlighting the need to understand the relationship between the virus and the renin-angiotensin system (RAS) and how this might be affected by RAS inhibitors.

Accession Number: WOS:000523114900001

Article 8 of 48

Use of Rapid Online Surveys to Assess People's Perceptions During Infectious Disease Outbreaks: A Cross-sectional Survey on COVID-19

Geldsetzer, P (Geldsetzer, Pascal)

JOURNAL OF MEDICAL INTERNET RESEARCH Volume: 22 Issue: 4 Article Number: e18790 DOI: 10.2196/18790 Published: APR 2 2020

Abstract:
Background: Given the extensive time needed to conduct a nationally representative household survey and the commonly low response rate of phone surveys, rapid online surveys may be a promising method to assess and track knowledge and perceptions among the general public during fast-moving infectious disease outbreaks.

Objective: This study aimed to apply rapid online surveying to determine knowledge and perceptions of coronavirus disease 2019 (COVID-19) among the general public in the United States and the United Kingdom.

Methods: An online questionnaire was administered to 3000 adults residing in the United States and 3000 adults residing in the United Kingdom who had registered with Prolific Academic to participate in online research. Prolific Academic established strata by age (18-27, 28-37, 38-47, 48-57, or >= 58 years), sex (male or female), and ethnicity (white, black or African American, Asian or Asian Indian, mixed, or "other"), as well as all permutations of these strata. The number of participants who could enroll in each of these strata was calculated to reflect the distribution in the US and UK general population. Enrollment into the survey within each stratum was on a first-come, first-served basis. Participants completed the questionnaire between February 23 and March 2, 2020.

Results: A total of 2986 and 2988 adults residing in the United States and the United Kingdom, respectively, completed the questionnaire. Of those, 64.4% (1924/2986) of US participants and 51.5% (1540/2988) of UK participants had a tertiary education degree, 67.5% (2015/2986) of US participants had a total household income between US $20,000 and US $99,999, and 74.4% (2223/2988) of UK participants had a total household income between 15,000 pound and 74,999 pound. US and UK participants' median estimate for the probability of a fatal disease course among those infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was 5.0% (IQR 2.0%-15.0%) and 3.0% (IQR 2.0%-10.0%), respectively. Participants generally had good knowledge of the main mode of disease transmission and common symptoms of COVID-19. However, a substantial proportion of participants had misconceptions about how to prevent an infection and the recommended care-seeking behavior. For instance, 37.8% (95% CI 36.1%-39.6%) of US participants and 29.7% (95% CI 28.1%-31.4%) of UK participants thought that wearing a common surgical mask was "highly effective" in protecting them from acquiring COVID-19, and 25.6% (95% CI 24.1%-27.2%) of US participants and 29.6% (95% CI 28.0%-31.3%) of UK participants thought it was prudent to refrain from eating at Chinese restaurants. Around half (53.8%, 95% CI 52.1%-55.6%) of US participants and 39.1% (95% CI 37.4%-40.9%) of UK participants thought that children were at an especially high risk of death when infected with SARS-CoV-2.

Conclusions: The distribution of participants by total household income and education followed approximately that of the US and UK general population. The findings from this online survey could guide information campaigns by public health authorities, clinicians, and the media. More broadly, rapid online surveys could be an important tool in tracking the public's knowledge and misperceptions during rapidly moving infectious disease outbreaks.

Accession Number: WOS:000523307600001
On a Statistical Transmission Model in Analysis of the Early Phase of COVID-19 Outbreak

Zhu, YF (Zhu, Yifan); Chen, YQ (Chen, Ying Qing)

STATISTICS IN BIOSCIENCES DOI: 10.1007/s12561-020-09277-0 Early Access Date: APR 2020

Abstract:
Since December 2019, a disease caused by a novel strain of coronavirus (COVID-19) had infected many people and the cumulative confirmed cases have reached almost 180,000 as of 17, March 2020. The COVID-19 outbreak was believed to have emerged from a seafood market in Wuhan, a metropolis city of more than 11 million population in Hubei province, China. We introduced a statistical disease transmission model using case symptom onset data to estimate the transmissibility of the early-phase outbreak in China, and provided sensitivity analyses with various assumptions of disease natural history of the COVID-19. We fitted the transmission model to several publicly available sources of the outbreak data until 11, February 2020, and estimated lock down intervention efficacy of Wuhan city. The estimated R0 was between 2.7 and 4.2 from plausible distribution assumptions of the incubation period and relative infectivity over the infectious period. 95% confidence interval of R0 were also reported. Potential issues such as data quality concerns and comparison of different modelling approaches were discussed.

Molecular Diagnosis of a Novel Coronavirus (2019-nCoV) Causing an Outbreak of Pneumonia

Chu, DKW (Chu, Daniel K. W.); Pan, Y (Pan, Yang); Cheng, SMS (Cheng, Samuel M. S.); Hui, KPY (Hui, Kenrie P. Y.); Krishnan, P (Krishnan, Pavithra); Liu, YZ (Liu, Yingzhi); Ng, DYM (Ng, Daisy Y. M.); Wan, CKC (Wan, Carrie K. C.); Yang, P (Yang, Peng); Wang, QY (Wang, Quanyi); Peiris, M (Peiris, Malik); Poon, LLM (Poon, Leo L. M.)

CLINICAL CHEMISTRY Volume: 66 Issue: 4 Pages: 549-555 DOI: 10.1093/clinchem/hvaa029 Published: APR 2020

Abstract:
Background: A novel coronavirus of zoonotic origin (2019-nCoV) has recently been identified in patients with acute respiratory disease. This virus is genetically similar to SARS coronavirus and bat SARS-like coronaviruses. The outbreak was initially detected in Wuhan, a major city of China, but has subsequently been detected in other provinces of China. Travel-associated cases have also been reported in a few other countries. Outbreaks in health care workers indicate human-to-human transmission. Molecular tests for rapid detection of this virus are urgently needed for early identification of infected patients.

Methods: We developed two 1-step quantitative real time reverse-transcription PCR assays to detect two different regions (ORF1b and N) of the viral genome. The primer and probe sets were designed
to react with this novel coronavirus and its closely related viruses, such as SARS coronavirus. These assays were evaluated using a panel of positive and negative controls. In addition, respiratory specimens from two 2019-nCoV-infected patients were tested.

Results: Using RNA extracted from cells infected by SARS coronavirus as a positive control, these assays were shown to have a dynamic range of at least seven orders of magnitude (2 x 10(-)(4)-2000 TCID50/reaction). Using DNA plasmids as positive standards, the detection limits of these assays were found to be below 10 copies per reaction. All negative control samples were negative in the assays. Samples from two 2019-nCoV-infected patients were positive in the tests.

Conclusions: The established assays can achieve a rapid detection of 2019n-CoV in human samples, thereby allowing early identification of patients.

Accession Number: WOS:000522728500010

**Article 11 of 48**

Consensus guidelines for managing the airway in patients with COVID-19
Guidelines from the Difficult Airway Society, the Association of Anaesthetists the Intensive Care Society, the Faculty of Intensive Care Medicine and the Royal College of Anaesthetists

Cook, TM (Cook, T. M.); El-Boghdady, K (El-Boghdady, K.); McGuire, B (McGuire, B.); McNarry, AF (McNarry, A. F.); Patel, A (Patel, A.); Higgs, A (Higgs, A.)

ANAESTHESIA DOI: 10.1111/anae.15054  Early Access Date: APR 2020

Abstract:

Severe acute respiratory syndrome-corona virus-2, which causes coronavirus disease 2019 (COVID-19), is highly contagious. Airway management of patients with COVID-19 is high risk to staff and patients. We aimed to develop principles for airway management of patients with COVID-19 to encourage safe, accurate and swift performance. This consensus statement has been brought together at short notice to advise on airway management for patients with COVID-19, drawing on published literature and immediately available information from clinicians and experts. Recommendations on the prevention of contamination of healthcare workers, the choice of staff involved in airway management, the training required and the selection of equipment are discussed. The fundamental principles of airway management in these settings are described for: emergency tracheal intubation; predicted or unexpected difficult tracheal intubation; cardiac arrest; anaesthetic care; and tracheal extubation. We provide figures to support clinicians in safe airway management of patients with COVID-19. The advice in this document is designed to be adapted in line with local workplace policies.

Accession Number: WOS:000523325300001
**Article 12 of 48**

**Coronavirus and Migration: Analysis of Human Mobility and the Spread of COVID-19**

Sirkeci, I (Sirkeci, Ibrahim); Yucesahin, MM (Yucesahin, M. Murat)

MIGRATION LETTERS  Volume: 17  Issue: 2  Pages: 379-398  DOI: 10.33182/ml.v17i2.935  Published: APR 2020

**Abstract:**

Reactions, measures as well as discourses dealing with the current pandemic vary significantly across the world. While some countries were completely locked down, as was the case in Italy, some had claimed to have very few or no cases, as was the case in Turkey and Indonesia by March 10th, 2020. Nevertheless, the spread of COVID-19 from China has been clearly linked to those travelling from Wuhan in Hubei province in Central China. Therefore, it is important to understand the travel density/volume of passengers carried as well as routes from Wuhan through connected main regional air travel hubs across China. In this study, we developed a model on migration and travel intensity that can explain outbreak and spread of COVID-19 since it appeared at the end of 2019. We show that the presence of migrant stock populations of Chinese origin and the immigrant stock in China are useful indicators in the prediction of the spread of the outbreak worldwide in the event of interaction with several other macro factors. We argue that monitoring immigrant stock data and travel volume data based on human mobility corridors (i.e. origins and destinations), countries could have been better prepared and taken early measures to contain the spread of COVID-19.

Accession Number: WOS:000523379000018

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**Article 13 of 48**

**Pathological findings of COVID-19 associated with acute respiratory distress syndrome**

Xu, Z (Xu, Zhe); Shi, L (Shi, Lei); Wang, YJ (Wang, Yijin); Zhang, JY (Zhang, Jiyuan); Huang, L (Huang, Lei); Zhang, C (Zhang, Chao); Liu, SH (Liu, Shuhong); Zhao, P (Zhao, Peng); Liu, HX (Liu, Hongxia); Zhu, L (Zhu, Li); Tai, YH (Tai, Yanhong); Bai, CQ (Bai, Chongqing); Gao, TT (Gao, Tingting); Song, JW (Song, Jinwen); Xia, P (Xia, Peng); Dong, JH (Dong, Jinghui); Zhao, JM (Zhao, Jingmin); Wang, FS (Wang, Fu-Sheng)

LANCET RESPIRATORY MEDICINE  Volume: 8  Issue: 4  Pages: 420-422  DOI: 10.1016/S2213-2600(20)30076-X  Published: APR 2020

Accession Number: WOS:000522760200039
Implications for Online Management: Two Cases with COVID-19

Huang, SF (Huang, Sufang); Xiao, YR (Xiao, Yaru); Yan, L (Yan, Li); Deng, J (Deng, Juan); He, M (He, Mei); Lu, J (Lu, Jun); Ke, S (Ke, Shun)

TELEMEDICINE AND E-HEALTH DOI: 10.1089/tmj.2020.0066 Early Access Date: APR 2020

Abstract:
Satisfactory outcome was observed in one mild case and one severe case of COVID-19 pneumonia after the use of the online/offline multidisciplinary quarantine observation form, online monitoring, and classified diagnosis and treatment, as well as strict compliance with quarantine measures. Conditions of both patients were improved, and cross-infection and disease onset clustering were not observed. The multidisciplinary self-quarantine model provides early judgment, identification, and treatment of disease, improves compliance with early rehabilitation, increases confidence in recovery, and enhances self-management capabilities. This model is applicable to the current novel coronavirus pneumonia epidemic and can actively promote the management of suspected or confirmed mild cases, monitoring of critical cases, and self-management of discharged patients. The application of this new management model is worthy of being promoted in our specialized treatment facilities and in countries with severe epidemics.

Accession Number: WOS:000523341500001

Expert consensus for managing pregnant women and neonates born to mothers with suspected or confirmed novel coronavirus (COVID-19) infection

Chen, DJ (Chen, Dunjin); Yang, HX (Yang, Huixia); Cao, Y (Cao, Yun); Cheng, WW (Cheng, Weiwei); Duan, T (Duan, Tao); Fan, CF (Fan, Cuifang); Fan, SR (Fan, Shangrong); Feng, L (Feng, Ling); Gao, YM (Gao, Yuanmei); He, F (He, Fang); He, J (He, Jing); Hu, YL (Hu, Yali); Jiang, Y (Jiang, Yi); Li, YM (Li, Yimin); Li, JF (Li, Jiafu); Li, XT (Li, Xiaotian); Li, XL (Li, Xuelan); Lin, KG (Lin, Kangguang); Liu, CX (Liu, Caixia); Liu, JT (Liu, Juntao); Liu, XH (Liu, Xinghui); Pan, XF (Pan, Xingfei); Pang, QM (Pang, Qiumei); Pu, MH (Pu, Meihua); Qi, HB (Qi, Hongbo); Shi, CY (Shi, Chunyan); Sun, Y (Sun, Yu); Sun, JX (Sun, Jingxia); Wang, XT (Wang, Xietong); Wang, YC (Wang, Yichun); Wang, ZL (Wang, Zilian); Wang, ZJ (Wang, Zhijian); Wang, C (Wang, Cheng); Wu, SQ (Wu, Suqiu); Xin, H (Xin, Hong); Yan, JY (Yan, Jianying); Zhao, YY (Zhao, Yangyu); Zheng, J (Zheng, Jun); Zhou, YH (Zhou, Yihua); Zou, L (Zou, Li); Zeng, YC (Zeng, Yingchun); Zhang, YZ (Zhang, Yuanzhen); Guan, XM (Guan, Xiaoming)

INTERNATIONAL JOURNAL OF GYNECOLOGY & OBSTETRICS DOI: 10.1002/ijgo.13146 Early Access Date: APR 2020

Abstract:
Objective To provide clinical management guidelines for novel coronavirus (COVID-19) in pregnancy.

Methods On February 5, 2020, a multidisciplinary teleconference comprising Chinese physicians and researchers was held and medical management strategies of COVID-19 infection in pregnancy were discussed.
Results Ten key recommendations were provided for the management of COVID-19 infections in pregnancy.

Conclusion Currently, there is no clear evidence regarding optimal delivery timing, the safety of vaginal delivery, or whether cesarean delivery prevents vertical transmission at the time of delivery; therefore, route of delivery and delivery timing should be individualized based on obstetrical indications and maternal-fetal status.

Accession Number: WOS:000522777400001

Article 16 of 48

Transplantation of ACE2(-) Mesenchymal Stem Cells Improves the Outcome of Patients with COVID-19 Pneumonia

Leng, ZK (Leng, Zikuan); Zhu, RJ (Zhu, Rongjia); Hou, W (Hou, Wei); Feng, YM (Feng, Yingmei); Yang, YL (Yang, Yanlei); Han, Q (Han, Qin); Shan, GL (Shan, Guangliang); Meng, FY (Meng, Fanyan); Du, DS (Du, Dongshu); Wang, SH (Wang, Shihua); Fan, JF (Fan, Junfen); Wang, WJ (Wang, Wenjing); Deng, LC (Deng, Luchan); Shi, HB (Shi, Hongbo); Li, HQ (Li, Hongjun); Hu, ZJ (Hu, Zhongjie); Zhang, FC (Zhang, Fengchun); Gao, JM (Gao, Jinming); Liu, HQ (Liu, Hongjian); Li, XX (Li, Xiaoxia); Zhao, YY (Zhao, Yangyang); Yin, K (Yin, Kan); He, XJ (He, Xijing); Gao, ZC (Gao, Zhengchao); Wang, YB (Wang, Yibin); Yang, B (Yang, Bo); Jin, RH (Jin, Ronghua); Stambler, I (Stambler, Ilia); Lim, LW (Lim, Lee Wei); Su, HX (Su, Huanxing); Moskalev, A (Moskalev, Alexey); Cano, A (Cano, Antonio); Chakrabarti, S (Chakrabarti, Sasanka); Min, KJ (Min, Kyung-Jin); Ellison-Hughes, G (Ellison-Hughes, Georgina); Caruso, C (Caruso, Calogero); Jin, KL (Jin, Kunlin); Zhao, RC (Zhao, Robert Chunhua)

AGING AND DISEASE Volume: 11 Issue: 2 Pages: 216-228 DOI: 10.14336/AD.2020.0228 Published: APR 2020

Abstract:

A coronavirus (HCoV-19) has caused the novel coronavirus disease (COVID-19) outbreak in Wuhan, China. Preventing and reversing the cytokine storm may be the key to save the patients with severe COVID-19 pneumonia. Mesenchymal stem cells (MSCs) have been shown to possess a comprehensive powerful immunomodulatory function. This study aims to investigate whether MSC transplantation improves the outcome of 7 enrolled patients with COVID-19 pneumonia in Beijing YouAn Hospital, China, from Jan 23, 2020 to Feb 16, 2020. The clinical outcomes, as well as changes of inflammatory and immune function levels and adverse effects of 7 enrolled patients were assessed for 14 days after MSC injection. MSCs could cure or significantly improve the functional outcomes of seven patients without observed adverse effects. The pulmonary function and symptoms of these seven patients were significantly improved in 2 days after MSC transplantation. Among them, two common and one severe patient were recovered and discharged in 10 days after treatment. After treatment, the peripheral lymphocytes were increased, the C-reactive protein decreased, and the overactivated cytokine-secreting immune cells CXCR3+CD4+ T cells, CXCR3+CD8+ T cells, and CXCR3+ NK cells disappeared in 3-6 days. In addition, a group of CD14+CD11c+CD11b(mid) regulatory DC cell population dramatically increased. Meanwhile, the level of TNF-alpha was significantly decreased, while IL-10 increased in MSC treatment group compared to the placebo control group. Furthermore, the gene expression profile showed MSCs were ACE2 - and TMPRSS2 - which indicated MSCs are free from COVID-19 infection. Thus, the
intravenous transplantation of MSCs was safe and effective for treatment in patients with COVID-19 pneumonia, especially for the patients in critically severe condition.

Accessory Number: WOS:000520029200001

**Article 17 of 48**

**Successful recovery of COVID-19 pneumonia in a renal transplant recipient with long-term immunosuppression**

Zhu, L (Zhu, Lan); Xu, XZ (Xu, Xizhen); Ma, K (Ma, Ke); Yang, JL (Yang, Junling); Guan, HX (Guan, Hanxiong); Chen, S (Chen, Song); Chen, ZS (Chen, Zhishui); Chen, G (Chen, Gang)

AMERICAN JOURNAL OF TRANSPLANTATION DOI: 10.1111/ajt.15869 Early Access Date: MAR 2020

**Abstract:**

The current outbreak of Coronavirus Disease 2019 (COVID-19) has raised great concern worldwide, but its impact on transplant recipients is unknown. We report here the clinical features and therapeutic course of the first reported renal transplant recipient with confirmed COVID-19 pneumonia. This is a 52-year-old man who received kidney transplantation 12 years ago. His overall clinical characteristics (symptoms, laboratory examinations, and chest CT) were similar to those of non-transplanted COVID-19 patients. Following a treatment regimen consisting of reduced immunosuppressant use and low dose methylprednisolone-based therapy, the COVID-19 pneumonia in this long-term immunosuppressive patient was successfully recovered. This effectively treated case has reference value for the future treatment of other transplant patients with COVID-19 pneumonia.

Accessory Number: WOS:000522525500001

**Article 18 of 48**

**Urgent need for individual mobile phone and institutional reporting of at home, hospitalized, and intensive care unit cases of SARS-CoV-2 (COVID-19) infection**

McCullough, PA (McCullough, Peter A.); Eidt, J (Eidt, John); Rangaswami, J (Rangaswami, Janani); Lerma, E (Lerma, Edgar); Tumlin, J (Tumlin, James); Wheelan, K (Wheelan, Kevin); Katz, N (Katz, Nevin); Lepor, NE (Lepor, Norman E.); Vijay, K (Vijay, Kris); Soman, S (Soman, Sandeep); Singh, B (Singh, Bhupinder); McCullough, SP (McCullough, Sean P.); McCullough, HB (McCullough, Haley B.); Palazzuoli, A (Palazzuoli, Alberto); Ruocco, GM (Ruocco, Gaetano M.); Ronco, C (Ronco, Claudio)

REVIEWS IN CARDIOVASCULAR MEDICINE Volume: 21 Issue: 1 Pages: 1-7 DOI: 10.31083/j.rcm.2020.01.42 Published: MAR 30 2020

**Abstract:**

Approximately 90 days of the SARS-CoV-2 (COVID-19) spreading originally from Wuhan, China, and across the globe has led to a widespread chain of events with imminent threats to the fragile relationship between community health and economic health. Despite near hourly reporting on this
crisis, there has been no regular, updated, or accurate reporting of hospitalizations for COVID-19. It is known that many test-positive individuals may not develop symptoms or have a mild self-limited viral syndrome consisting of fever, malaise, dry cough, and constitutional symptoms. However some individuals develop a more fulminant syndrome including viral pneumonia, respiratory failure requiring oxygen, acute respiratory distress syndrome requiring mechanical ventilation, and in substantial reactions leading to death attributable to COVID-19. The pandemic is evolving in a clustered, non-inform fashion resulting in many hospitals with preparedness but few or no cases, and others that are completely overwhelmed. Thus, a considerable risk of spread when personal protection equipment becomes exhausted and a large fraction of mortality in those not offered mechanical ventilation are both attributable to a crisis due to maldistribution of resources. The pandemic is amenable to self-reporting through a mobile phone application that could obtain critical information on suspected cases and report on the results of self testing and actions taken. The only method to understand the clustering and the immediate hospital resource needs is mandatory, uniform, daily reporting of hospital censuses of COVID-19 cases admitted to hospital wards and intensive care units. Current reports of hospitalizations are delayed, uncertain, and wholly inadequate. This paper urges all the relevant stakeholders to take up self-reporting and reporting of hospitalizations of COVID-19 as an urgent task in combating this devastating pandemic.

Accession Number: WOS:000523189400001

**Article 19 of 48**

**International Perspectives Concerning Donor Milk Banking During the SARS-CoV-2 (COVID-19) Pandemic**

Marinelli, KA (Marinelli, Kathleen A.)

JOURNAL OF HUMAN LACTATION  Article Number: UNSP 0890334420917661 DOI: 10.1177/0890334420917661 Early Access Date: MAR 2020

Accession Number: WOS:000523534100001

**Article 20 of 48**

**Inhibition of SARS-CoV-2 (previously 2019-nCoV) infection by a highly potent pan-coronavirus fusion inhibitor targeting its spike protein that harbors a high capacity to mediate membrane fusion**

Xia, S (Xia, Shuai); Liu, MQ (Liu, Meiqin); Wang, C (Wang, Chao); Xu, W (Xu, Wei); Lan, QS (Lan, Qiaoshuai); Feng, SL (Feng, Siliang); Qi, FF (Qi, Feifei); Bao, LL (Bao, Linlin); Du, LY (Du, Lanying); Liu, SW (Liu, Shuwen); Qin, C (Qin, Chuan); Sun, F (Sun, Fei); Shi, ZL (Shi, Zhengli); Zhu, Y (Zhu, Yun); Jiang, SB (Jiang, Shibo); Lu, L (Lu, Lu)

CELL RESEARCH  Volume: 30 Issue: 4 Pages: 343-355 DOI: 10.1038/s41422-020-0305-x Early Access Date: MAR 2020 Published: APR 2020

**Abstract:**

The recent outbreak of coronavirus disease (COVID-19) caused by SARS-CoV-2 infection in Wuhan, China has posed a serious threat to global public health. To develop specific anti-
coronavirus therapeutics and prophylactics, the molecular mechanism that underlies viral infection must first be defined. Therefore, we herein established a SARS-CoV-2 spike (S) protein-mediated cell-cell fusion assay and found that SARS-CoV-2 showed a superior plasma membrane fusion capacity compared to that of SARS-CoV. We solved the X-ray crystal structure of six-helical bundle (6-HB) core of the HR1 and HR2 domains in the SARS-CoV-2 S protein S2 subunit, revealing that several mutated amino acid residues in the HR1 domain may be associated with enhanced interactions with the HR2 domain. We previously developed a pan-coronavirus fusion inhibitor, EK1, which targeted the HR1 domain and could inhibit infection by divergent human coronaviruses tested, including SARS-CoV and MERS-CoV. Here we generated a series of lipopeptides derived from EK1 and found that EK1C4 was the most potent fusion inhibitor against SARS-CoV-2 S protein-mediated membrane fusion and pseudovirus infection with IC50s of 1.3 and 15.8 nM, about 241- and 149-fold more potent than the original EK1 peptide, respectively. EK1C4 was also highly effective against membrane fusion and infection of other human coronavirus pseudoviruses tested, including SARS-CoV and MERS-CoV, as well as SARSr-CoVs, and potently inhibited the replication of 5 live human coronaviruses examined, including SARS-CoV-2. Intranasal application of EK1C4 before or after challenge with HCoV-OC43 protected mice from infection, suggesting that EK1C4 could be used for prevention and treatment of infection by the currently circulating SARS-CoV-2 and other emerging SARSr-CoVs.

Accession Number: WOS:000522380000001

Article 21 of 48

Faith, Politics and the COVID-19 Pandemic: The Turkish Response

Alyanak, O (Alyanak, Oguz)

MEDICAL ANTHROPOLOGY DOI: 10.1080/01459740.2020.1745482 Early Access Date: MAR 2020

Accession Number: WOS:000524120700001

Article 22 of 48

The COVID-19 Pandemic: Making Sense of Rumor and Fear Op-Ed

Ali, I (Ali, Inayat)

MEDICAL ANTHROPOLOGY DOI: 10.1080/01459740.2020.1745481 Early Access Date: MAR 2020

Accession Number: WOS:000524144000001
Surviving Sepsis Campaign: guidelines on the management of critically ill adults with Coronavirus Disease 2019 (COVID-19)

Alhazzani, W (Alhazzani, Waleed); Moller, MH (Moller, Morten Hylander); Arabi, YM (Arabi, Yaseen M.); Loeb, M (Loeb, Mark); Gong, MN (Gong, Michelle Ng); Fan, E (Fan, Eddy); Oczkowski, S (Oczkowski, Simon); Levy, MM (Levy, Mitchell M.); Derde, L (Derde, Lennie); Dzierba, A (Dzierba, Amy); Du, B (Du, Bin); Aboodi, M (Aboodi, Michael); Wunsch, H (Wunsch, Hannah); Cecconi, M (Cecconi, Maurizio); Koh, Y (Koh, Younsuck); Chertow, DS (Chertow, Daniel S.); Maitland, K (Maitland, Kathryn); Alshamsi, F (Alshamsi, Fayezy); Belley-Cote, E (Belley-Cote, Emilie); Greco, M (Greco, Massimiliano); Laundy, M (Laundy, Matthew); Morgan, JS (Morgan, Jill S.); Keseecioglu, J (Keseecioglu, Jozef); McGeer, A (McGeer, Allison); Mermel, L (Mermel, Leonard); Mammen, MJ (Mammen, Manoj J.); Alexander, PE (Alexander, Paul E.); Arrington, A (Arrington, Amy); Centofanti, J (Centofanti, John); Citerio, G (Citerio, Giuseppe); Baw, B (Baw, Bandar); Memish, ZA (Memish, Ziad A.); Hammond, N (Hammond, Naomi); Hayden, FG (Hayden, Frederick G.); Evans, L (Evans, Laura); Rhodes, A (Rhodes, Andrew)

INTENSIVE CARE MEDICINE DOI: 10.1007/s00134-020-06022-5 Early Access Date: MAR 2020

Abstract:

Background The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the cause of a rapidly spreading illness, Coronavirus Disease 2019 (COVID-19), affecting thousands of people around the world. Urgent guidance for clinicians caring for the sickest of these patients is needed. Methods We formed a panel of 36 experts from 12 countries. All panel members completed the World Health Organization conflict of interest disclosure form. The panel proposed 53 questions that are relevant to the management of COVID-19 in the ICU. We searched the literature for direct and indirect evidence on the management of COVID-19 in critically ill patients in the ICU. We identified relevant and recent systematic reviews on most questions relating to supportive care. We assessed the certainty in the evidence using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach, then generated recommendations based on the balance between benefit and harm, resource and cost implications, equity, and feasibility. Recommendations were either strong or weak, or in the form of best practice recommendations. Results The Surviving Sepsis Campaign COVID-19 panel issued 54 statements, of which 4 are best practice statements, 9 are strong recommendations, and 35 are weak recommendations. No recommendation was provided for 6 questions. The topics were: (1) infection control, (2) laboratory diagnosis and specimens, (3) hemodynamic support, (4) ventilatory support, and (5) COVID-19 therapy. Conclusion The Surviving Sepsis Campaign COVID-19 panel issued several recommendations to help support healthcare workers caring for critically ill ICU patients with COVID-19. When available, we will provide new recommendations in further releases of these guidelines.

Accession Number: WOS:000522001200001
Is nicotine exposure linked to cardiopulmonary vulnerability to COVID-19 in the general population?

Olds, JL (Olds, James L.); Kabbani, N (Kabbani, Nadine)

FEBS JOURNAL DOI: 10.1111/febs.15303 Early Access Date: MAR 2020

Abstract:

The recent emergence of COVID-19 has resulted in a worldwide crisis, with large populations locked down and transportation links severed. While approximately 80% of infected individuals have minimal symptoms, around 15-20% need to be hospitalized, greatly stressing global healthcare systems. As of March 10, the death rate appears to be about 3.4%, although this number is highly stratified among different populations. Here, we focus on those individuals who have been exposed to nicotine prior to their exposure to the virus. We predict that these individuals are 'primed' to be at higher risk because nicotine can directly impact the putative receptor for the virus (ACE2) and lead to deleterious signaling in lung epithelial cells.

Accession Number: WOS:000521849500001

The Fear of COVID-19 Scale: Development and Initial Validation

Ahorsu, DK (Ahorsu, Daniel Kwasi); Lin, CY (Lin, Chung-Ying); Imani, V (Imani, Vida); Saffari, M (Saffari, Mohsen); Griffiths, MD (Griffiths, Mark D.); Pakpour, AH (Pakpour, Amir H.)

INTERNATIONAL JOURNAL OF MENTAL HEALTH AND ADDICTION DOI: 10.1007/s11469-020-00270-8 Early Access Date: MAR 2020

Abstract:

Background The emergence of the COVID-19 and its consequences has led to fears, worries, and anxiety among individuals worldwide. The present study developed the Fear of COVID-19 Scale (FCV-19S) to complement the clinical efforts in preventing the spread and treating of COVID-19 cases. Methods The sample comprised 717 Iranian participants. The items of the FCV-19S were constructed based on extensive review of existing scales on fears, expert evaluations, and participant interviews. Several psychometric tests were conducted to ascertain its reliability and validity properties. Results After panel review and corrected item-total correlation testing, seven items with acceptable corrected item-total correlation (0.47 to 0.56) were retained and further confirmed by significant and strong factor loadings (0.66 to 0.74). Also, other properties evaluated using both classical test theory and Rasch model were satisfactory on the seven-item scale. More specifically, reliability values such as internal consistency (alpha = .82) and test-retest reliability (ICC = .72) were acceptable. Concurrent validity was supported by the Hospital Anxiety and Depression Scale (with depression, r = 0.425 and anxiety, r = 0.511) and the Perceived Vulnerability to Disease Scale (with perceived infectability, r = 0.483 and germ aversion, r = 0.459). Conclusion The Fear of COVID-19 Scale, a seven-item scale, has robust psychometric properties. It is reliable and valid in assessing fear of COVID-19 among the general population and will also be useful in allaying COVID-19 fears among individuals.
Article 26 of 48

**Responding to COVID-19: How to Navigate a Public Health Emergency Legally and Ethically**

Keywords

Gostin, LO (Gostin, Lawrence O.); Friedman, EA (Friedman, Eric A.); Wetter, SA (Wetter, Sarah A.)

HASTINGS CENTER REPORT DOI: 10.1002/hast.1090 Early Access Date: MAR 2020

Abstract:

Few novel or emerging infectious diseases have posed such vital ethical challenges so quickly and dramatically as the novel coronavirus SARS-CoV-2. The World Health Organization declared a public health emergency of international concern and recently classified COVID-19 as a worldwide pandemic. As of this writing, the epidemic has not yet peaked in the United States, but community transmission is widespread. President Trump declared a national emergency as fifty governors declared state emergencies. In the coming weeks, hospitals will become overrun, stretched to their capacities. When the health system becomes stretched beyond capacity, how can we ethically allocate scarce health goods and services? How can we ensure that marginalized populations can access the care they need? What ethical duties do we owe to vulnerable people separated from their families and communities? And how do we ethically and legally balance public health with civil liberties?

Article 27 of 48

**Coronavirus disease 2019 (COVID-19): update for anesthesiologists and intensivists March 2020**

Thomas-Ruddel, D (Thomas-Rueddel, D.); Winning, J (Winning, J.); Dickmann, P (Dickmann, P.); Ouart, D (Ouart, D.); Kortgen, A (Kortgen, A.); Janssens, U (Janssens, U.); Bauer, M (Bauer, M.)

ANAESTHESIST DOI: 10.1007/s00101-020-00760-3 Early Access Date: MAR 2020

Abstract:

The current outbreak of coronavirus disease (COVID-19) has reached Germany. The majority of people infected present with mild disease, but there are severe cases that need intensive care. Unlike other acute infectious diseases progressing to sepsis, the severe courses of COVID19 seemingly show prolonged progression from onset of first symptoms to life-threatening deterioration of (primarily) lung function. Diagnosis relies on PCR using specimens from the respiratory tract. Severe ARDS reflects the hallmark of a critical course of the disease. Preventing nosocomial infections (primarily by correct use of personal protective equipment) and maintenance of hospitals' operational capability are of utmost importance. Departments of Anaesthesia, Intensive Care and emergency medicine will envisage major challenges.

Accession Number: WOS:000521719300002
Article 28 of 48

Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19)

Smith, AC (Smith, Anthony C.); Thomas, E (Thomas, Emma); Snoswell, CL (Snoswell, Centaine L.); Haydon, H (Haydon, Helen); Mehrotra, A (Mehrotra, Ateev); Clemensen, J (Clemensen, Jane); Caffery, LJ (Caffery, Liam J.)

JOURNAL OF TELEMEDICINE AND TELECARE Article Number: 1357633X20916567 DOI: 10.1177/1357633X20916567 Early Access Date: MAR 2020

Abstract:

The current coronavirus (COVID-19) pandemic is again reminding us of the importance of using telehealth to deliver care, especially as means of reducing the risk of cross-contamination caused by close contact. For telehealth to be effective as part of an emergency response it first needs to become a routinely used part of our health system. Hence, it is time to step back and ask why telehealth is not mainstreamed. In this article, we highlight key requirements for this to occur. Strategies to ensure that telehealth is used regularly in acute, post-acute and emergency situations, alongside conventional service delivery methods, include flexible funding arrangements, training and accrediting our health workforce. Telehealth uptake also requires a significant change in management effort and the redesign of existing models of care. Implementing telehealth proactively rather than reactively is more likely to generate greater benefits in the long-term, and help with the everyday (and emergency) challenges in healthcare.

Accession Number: WOS:000523872700001

Article 29 of 48

We Need Strong Public Health Care to Contain the Global Corona Pandemic

De Ceukelaire, W (De Ceukelaire, Wim); Bodini, C (Bodini, Chiara)

INTERNATIONAL JOURNAL OF HEALTH SERVICES Article Number: 0020731420916725 DOI: 10.1177/0020731420916725 Early Access Date: MAR 2020

Abstract:

The corona virus (COVID-19) outbreak has spread from China to over a hundred countries in less than 2 months. Now is the time to take stock and to assess the responses of different countries to the outbreak so far. What we can learn from the global Corona pandemic so far is that strong public health systems have the resilience to address massive health threats with the collective responses they require. Privatization of health services and individualization of risks might further undermine our ability to address this and future global pandemics.

Accession Number: WOS:000523870200001
**Insight into COVID-2019 for pediatricians**

Li, YZ (Li, Yuanzhe); Guo, FF (Guo, FeiFei); Cao, Y (Cao, Yang); Li, LF (Li, LiFeng); Guo, YJ (Guo, YanJun)

PEDIATRIC PULMONOLOGY DOI: 10.1002/ppul.24734 Early Access Date: MAR 2020

**Abstract:**

Since December 2019, patients with unexplained pneumonia have been found in Wuhan City, Hubei Province, China. The pathogen in these cases is a new type of coronavirus. The World Health Organization confirmed this diagnosis and named the pathogen SARS-CoV-2. The disease caused by SARS-CoV-2 is called Corona Virus Disease (COVID-2019). The virus is highly infectious and pathogenic, causing human-to-human transmission. At present, SARS-CoV-2 is still rampant in the world. Zhengzhou City in Henan Province serves as an example, 102 people have been confirmed to be infected with SARS-CoV-2 (at 24:00 on February 5th, 2020), including three children, the youngest is 4 years old. From the perspective of clinical pediatricians as the first line fighting the epidemic, this paper will discuss the clinical characteristics, prevention and control measures, outcomes, diagnosis, and treatment of pediatric cases.

Accession Number: WOS:000520271200001

**SARS-CoV-2 and COVID-19: The most important research questions**

Yuen, KS (Yuen, Kit-San); Ye, ZW (Ye, Zi-Wei); Fung, SY (Fung, Sin-Yee); Chan, CP (Chan, Chi-Ping); Jin, DY (Jin, Dong-Yan)

CELL AND BIOSCIENCE Volume: 10 Issue: 1 Article Number: 40 DOI: 10.1186/s13578-020-00404-4 Published: MAR 16 2020

**Abstract:**

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an ongoing global health emergency. Here we highlight nine most important research questions concerning virus transmission, asymptomatic and presymptomatic virus shedding, diagnosis, treatment, vaccine development, origin of virus and viral pathogenesis.

Accession Number: WOS:000522170100002
Safety and efficacy of different anesthetic regimens for parturients with COVID-19 undergoing Cesarean delivery: a case series of 17 patients

Chen, R (Chen, Rong); Zhang, Y (Zhang, Yuan); Huang, L (Huang, Lei); Cheng, BH (Cheng, Bi-heng); Xia, ZY (Xia, Zhong-yuan); Meng, QT (Meng, Qing-tao)

CANADIAN JOURNAL OF ANESTHESIA-JOURNAL CANADIEN D ANESTHESIE DOI: 10.1007/s12630-020-01630-7 Early Access Date: MAR 2020

Abstract:

Purpose To assess the management and safety of epidural or general anesthesia for Cesarean delivery in parturients with coronavirus disease (COVID-19) and their newborns, and to evaluate the standardized procedures for protecting medical staff. Methods We retrospectively reviewed the cases of parturients diagnosed with severe acute respiratory syndrome coronavirus (SARS-CoV-2) infection disease (COVID-19). Their epidemiologic history, chest computed tomography scans, laboratory measurements, and SARS-CoV-2 nucleic acid positivity were evaluated. We also recorded the patients' demographic and clinical characteristics, anesthesia and surgery-related data, maternal and neonatal complications, as well as the health status of the involved medical staff. Results The clinical characteristics of 17 pregnant women infected with SARS-CoV-2 were similar to those previously reported in non-pregnant adult patients. All of the 17 patients underwent Cesarean delivery with anesthesia performed according to standardized anesthesia/surgery procedures. Fourteen of the patients underwent continuous epidural anesthesia with 12 experiencing significant intraoperative hypotension. Three patients received general anesthesia with tracheal intubation because emergency surgery was needed. Three of the parturients are still recovering from their Cesarean delivery and are receiving in-hospital treatment for COVID-19. Three neonates were born prematurely. There were no deaths or serious neonatal asphyxia events. All neonatal SARS-CoV-2 nucleic acid tests were negative. No medical staff were infected throughout the patient care period. Conclusions Both epidural and general anesthesia were safely used for Cesarean delivery in the parturients with COVID-19. Nevertheless, the incidence of hypotension during epidural anesthesia appeared excessive. Proper patient transfer, medical staff access procedures, and effective biosafety precautions are important to protect medical staff from COVID-19.

Accession Number: WOS:000520642900002

Clinical features of pediatric patients with COVID-19: a report of two family cluster cases

Ji, LN (Ji, Li-Na); Chao, S (Chao, Shuang); Wang, YJ (Wang, Yue-Jiao); Li, XJ (Li, Xue-Jun); Mu, XD (Mu, Xiang-Dong); Lin, MG (Lin, Ming-Gui); Jiang, RM (Jiang, Rong-Meng)

WORLD JOURNAL OF PEDIATRICS DOI: 10.1007/s12519-020-00356-2 Early Access Date: MAR 2020

Abstract:
Background Coronovirus disease 2019 (COVID-19) has spread rapidly across the globe. People of all ages are susceptible to COVID-19. However, literature reports on pediatric patients are limited. 

Methods To improve the recognition of COVID-19 infection in children, we retrospectively reviewed two confirmed pediatric cases from two family clusters. Both clinical features and laboratory examination results of the children and their family members were described. Results The two confirmed children only presented with mild respiratory or gastrointestinal symptoms. Both of them had normal chest CT images. After general and symptomatic treatments, both children recovered quickly. Both families had travel histories to Hubei Province. Conclusions Pediatric patients with COVID-19 are mostly owing to family cluster or with a close contact history. Infected children have relatively milder clinical symptoms than infected adults. We should attach importance to early recognition, early diagnosis, and early treatment of infected children.

Accession Number: WOS:000520625800001

Article 34 of 48


Zhou, YD (Zhou, Yadi); Hou, Y (Hou, Yuan); Shen, JY (Shen, Jiayu); Huang, Y (Huang, Yin); Martin, W (Martin, William); Cheng, FX (Cheng, Feixiong)

CELL DISCOVERY Volume: 6 Issue: 1 Article Number: 14 DOI: 10.1038/s41421-020-0153-3 Published: MAR 16 2020

Abstract:

Human coronaviruses (HCoVs), including severe acute respiratory syndrome coronavirus (SARS-CoV) and 2019 novel coronavirus (2019-nCoV, also known as SARS-CoV-2), lead global epidemics with high morbidity and mortality. However, there are currently no effective drugs targeting 2019-nCoV/SARS-CoV-2. Drug repurposing, representing as an effective drug discovery strategy from existing drugs, could shorten the time and reduce the cost compared to de novo drug discovery. In this study, we present an integrative, antiviral drug repurposing methodology implementing a systems pharmacology-based network medicine platform, quantifying the interplay between the HCoV-host interactome and drug targets in the human protein-protein interaction network. Phylogenetic analyses of 15 HCoV whole genomes reveal that 2019-nCoV/SARS-CoV-2 shares the highest nucleotide sequence identity with SARS-CoV (79.7%). Specifically, the envelope and nucleocapsid proteins of 2019-nCoV/SARS-CoV-2 are two evolutionarily conserved regions, having the sequence identities of 96% and 89.6%, respectively, compared to SARS-CoV. Using network proximity analyses of drug targets and HCoV-host interactions in the human interactome, we prioritize 16 potential anti-HCoV repurposable drugs (e.g., melatonin, mercaptopurine, and sirolimus) that are further validated by enrichment analyses of drug-gene signatures and HCoV-induced transcriptomics data in human cell lines. We further identify three potential drug combinations (e.g., sirolimus plus dactinomycin, mercaptopurine plus melatonin, and toremifene plus emodin) captured by the "Complementary Exposure" pattern: the targets of the drugs both hit the HCoV-host subnetwork, but target separate neighborhoods in the human interactome network. In summary, this study offers powerful network-based methodologies for rapid identification of candidate repurposable drugs and potential drug combinations targeting 2019-nCoV/SARS-CoV-2.

Accession Number: WOS:000519701100001
Article 35 of 48

Coronavirus Disease 2019 (COVID-19): Emerging and Future Challenges for Dental and Oral Medicine

Meng, L (Meng, L.); Hua, F (Hua, F.); Bian, Z (Bian, Z.)

JOURNAL OF DENTAL RESEARCH Article Number: UNSP 0022034520914246 DOI: 10.1177/0022034520914246 Early Access Date: MAR 2020

Abstract:

The epidemic of coronavirus disease 2019 (COVID-19), originating in Wuhan, China, has become a major public health challenge for not only China but also countries around the world. The World Health Organization announced that the outbreaks of the novel coronavirus have constituted a public health emergency of international concern. As of February 26, 2020, COVID-19 has been recognized in 34 countries, with a total of 80,239 laboratory-confirmed cases and 2,700 deaths. Infection control measures are necessary to prevent the virus from further spreading and to help control the epidemic situation. Due to the characteristics of dental settings, the risk of cross infection can be high between patients and dental practitioners. For dental practices and hospitals in areas that are (potentially) affected with COVID-19, strict and effective infection control protocols are urgently needed. This article, based on our experience and relevant guidelines and research, introduces essential knowledge about COVID-19 and nosocomial infection in dental settings and provides recommended management protocols for dental practitioners and students in (potentially) affected areas.

Accession Number: WOS:000523821200001

Article 36 of 48

Containing 2019-nCoV (Wuhan) coronavirus

Kaplan, EH (Kaplan, Edward H.)

HEALTH CARE MANAGEMENT SCIENCE DOI: 10.1007/s10729-020-09504-6 Early Access Date: MAR 2020

Abstract:

The novel coronavirus 2019-nCoV first appeared in December 2019 in Wuhan, China. While most of the initial cases were linked to the Huanan Seafood Wholesale Market, person-to-person transmission has been verified. Given that a vaccine cannot be developed and deployed for at least a year, preventing further transmission relies upon standard principles of containment, two of which are the isolation of known cases and the quarantine of persons believed at high risk of exposure. This note presents probability models for assessing the effectiveness of case isolation and quarantine within a community during the initial phase of an outbreak with illustrations based on early observations from Wuhan.

Accession Number: WOS:000520656400001
Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in Nanjing, China

Hu, ZL (Hu, Zhiliang); Song, C (Song, Ci); Xu, CJ (Xu, Chuanjun); Jin, GF (Jin, Guangfu); Chen, YL (Chen, Yaling); Xu, X (Xu, Xin); Ma, HX (Ma, Hongxia); Chen, W (Chen, Wei); Lin, Y (Lin, Yuan); Zheng, YS (Zheng, Yishan); Wang, JM (Wang, Jianming); Hu, ZB (Hu, Zhibin); Yi, YX (Yi, Yongxiang); Shen, HB (Shen, Hongbing)

SCIENCE CHINA-LIFE SCIENCES  DOI: 10.1007/s11427-020-1661-4 Early Access Date: MAR 2020

Abstract:

Previous studies have showed clinical characteristics of patients with the 2019 novel coronavirus disease (COVID-19) and the evidence of person-to-person transmission. Limited data are available for asymptomatic infections. This study aims to present the clinical characteristics of 24 cases with asymptomatic infection screened from close contacts and to show the transmission potential of asymptomatic COVID-19 virus carriers. Epidemiological investigations were conducted among all close contacts of COVID-19 patients (or suspected patients) in Nanjing, Jiangsu Province, China, from Jan 28 to Feb 9, 2020, both in clinic and in community. Asymptomatic carriers were laboratory-confirmed positive for the COVID-19 virus by testing the nucleic acid of the pharyngeal swab samples. Their clinical records, laboratory assessments, and chest CT scans were reviewed. As a result, none of the 24 asymptomatic cases presented any obvious symptoms while nucleic acid screening. Five cases (20.8%) developed symptoms (fever, cough, fatigue, etc.) during hospitalization. Twelve (50.0%) cases showed typical CT images of ground-glass chest and 5 (20.8%) presented stripe shadowing in the lungs. The remaining 7 (29.2%) cases showed normal CT image and had no symptoms during hospitalization. These 7 cases were younger (median age: 14.0 years; P=0.012) than the rest. None of the 24 cases developed severe COVID-19 pneumonia or died. The median communicable period, defined as the interval from the first day of positive nucleic acid tests to the first day of continuous negative tests, was 9.5 days (up to 21 days among the 24 asymptomatic cases). Through epidemiological investigation, we observed a typical asymptomatic transmission to the cohabiting family members, which even caused severe COVID-19 pneumonia. Overall, the asymptomatic carriers identified from close contacts were prone to be mildly ill during hospitalization. However, the communicable period could be up to three weeks and the communicated patients could develop severe illness. These results highlighted the importance of close contact tracing and longitudinally surveillance via virus nucleic acid tests. Further isolation recommendation and continuous nucleic acid tests may also be recommended to the patients discharged.

Accession Number: WOS:000518479200001
Network pharmacology-based analysis of the role of traditional Chinese herbal medicines in the treatment of COVID-19

Yu, SW (Yu, Shengwei); Wang, JW (Wang, Junwu); Shen, HT (Shen, Haitao)

ANNALS OF PALLIATIVE MEDICINE Volume: 9 Issue: 2 Pages: 437-446 DOI: 10.21037/apm.2020.03.27 Published: MAR 2020

Abstract:

Background: The novel coronavirus named COVID-19, which originated in Wuhan, China, has spread to many countries around the world. Currently, no effective medical treatment exists to combat this disease. Traditional Chinese herbal medicines (CHM) have unique roles in the treatment of viral infections. In this article we analyzed the effectiveness and possible molecular mechanisms of CHM formulas for the prevention of COVID-19.

Methods: The active ingredients and action targets of CHM formulas were obtained from the TCMSP database. Genes related to severe acute respiratory syndromes (SARS) and Middle East respiratory syndrome (MERS) were queried on the GeneCards database. The action mechanisms of these genes were predicted using a Gene Ontology (GO)-based functional enrichment and annotation tool and the Kyoto Encyclopedia of Genes and Genomes (KEGG).

Results: CHM formulas played a positive role in preventing COVID-19 and warrant further application.

Conclusions: Our research provides new evidence to support the possible value of CHM formulas for the prevention of COVID-19. However, further clinical studies with large sample sizes are required to verify their effectiveness.

Accession Number: WOS:000522781300043

Modified SEIR and AI prediction of the epidemics trend of COVID-19 in China under public health interventions

Yang, ZF (Yang, Zifeng); Zeng, ZQ (Zeng, Zhiqi); Wang, K (Wang, Ke); Wong, SS (Wong, Sook-San); Liang, WH (Liang, Wenhua); Zanin, M (Zanin, Mark); Liu, P (Liu, Peng); Cao, XD (Cao, Xudong); Gao, ZQ (Gao, Zhongqiang); Mai, ZT (Mai, Zhitong); Liang, JY (Liang, Jingyi); Liu, XQ (Liu, Xiaoping); Li, SY (Li, Shiyue); Li, YM (Li, Yimin); Ye, F (Ye, Feng); Guan, WJ (Guan, Weijie); Yang, YF (Yang, Yifan); Li, F (Li, Fei); Luo, SM (Luo, Shengmei); Xie, YQ (Xie, Yuqi); Liu, B (Liu, Bin); Wang, ZL (Wang, Zhoulang); Zhang, SB (Zhang, Shaobo); Wang, YN (Wang, Yaonan); Zhong, NS (Zhong, Nanshan); He, JX (He, Jianxing)

JOURNAL OF THORACIC DISEASE Volume: 12 Issue: 3 Pages: 165-+ DOI: 10.21037/jtd.2020.02.64 Published: MAR 2020

Abstract:

Background: The coronavirus disease 2019 (COVID-19) outbreak originating in Wuhan, Hubei province, China, coincided with chunyun, the period of mass migration for the annual Spring
Festival. To contain its spread, China adopted unprecedented nationwide interventions on January 23 2020. These policies included large-scale quarantine, strict controls on travel and extensive monitoring of suspected cases. However, it is unknown whether these policies have had an impact on the epidemic. We sought to show how these control measures impacted the containment of the epidemic.

Methods: We integrated population migration data before and after January 23 and most updated COVID-19 epidemiological data into the Susceptible-Exposed-Infectious-Removed (SEIR) model to derive the epidemic curve. We also used an artificial intelligence (AI) approach, trained on the 2003 SARS data, to predict the epidemic.

Results: We found that the epidemic of China should peak by late February, showing gradual decline by end of April. A five-day delay in implementation would have increased epidemic size in mainland China three-fold. Lifting the Hubei quarantine would lead to a second epidemic peak in Hubei province in mid-March and extend the epidemic to late April, a result corroborated by the machine learning prediction.

Conclusions: Our dynamic SEIR model was effective in predicting the COVID-19 epidemic peaks and sizes. The implementation of control measures on January 23 2020 was indispensable in reducing the eventual COVID-19 epidemic size.

Accession Number: WOS:000521736500010

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The 2019 novel corona virus outbreak - An institutional guideline

Suresh, V (Suresh, Varun)

INDIAN JOURNAL OF ANAESTHESIA Volume: 64 Issue: 3 Pages: 242-243 DOI: 10.4103/ija.IJA_104_20 Published: MAR 2020

Accession Number: WOS:00052111700015

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2019-nCoV: The Identify-Isolate-Inform (3I) Tool Applied to a Novel Emerging Coronavirus

Koenig, KL (Koenig, Kristi L.); Bey, CK (Bey, Christian K.); McDonald, EC (McDonald, Eric C.)

WESTERN JOURNAL OF EMERGENCY MEDICINE Volume: 21 Issue: 2 Pages: 184-190 DOI: 10.5811/westjem.2020.1.46760 Published: MAR 2020

Abstract:

2019 Novel Coronavirus (2019-nCoV) is an emerging infectious disease closely related to MERS-CoV and SARS-CoV that was first reported in Wuhan City, Hubei Province, China in December 2019. As of January 2020, cases of 2019-nCoV are continuing to be reported in other Eastern Asian countries as well as in the United States, Europe, Australia, and numerous other countries. An unusually high volume of domestic and international travel corresponding to the beginning of the 2020 Chinese New Year complicated initial identification and containment of infected persons. Due
to the rapidly rising number of cases and reported deaths, all countries should be considered at risk of imported 2019-nCoV. Therefore, it is essential for prehospital, clinic, and emergency department personnel to be able to rapidly assess 2019-nCoV risk and take immediate actions if indicated. The Identify-Isolate-Inform (31) Tool, originally conceived for the initial detection and management of Ebola virus and later adjusted for other infectious agents, can be adapted for any emerging infectious disease. This paper reports a modification of the 31 Tool for use in the initial detection and management of patients under investigation for 2019-nCoV. After initial assessment for symptoms and epidemiological risk factors, including travel to affected areas and exposure to confirmed 2019-nCoV patients within 14 days, patients are classified in a risk-stratified system. Upon confirmation of a suspected 2019-nCoV case, affected persons must immediately be placed in airborne infection isolation and the appropriate public health agencies notified. This modified 31 Tool will assist emergency and primary care clinicians, as well as out-of-hospital providers, in effectively managing persons with suspected or confirmed 2019-nCoV.

Accession Number: WOS:000517818500001

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Finding an Accurate Early Forecasting Model from Small Dataset: A Case of 2019-nCoV Novel Coronavirus Outbreak

Fong, SJ (Fong, Simon James); Li, G (Li, Gloria); Dey, N (Dey, Nilanjan); Crespo, RG (Gonzalez Crespo, Ruben); Herrera-Viedma, E (Herrera-Viedma, Enrique)


Abstract:

Epidemic is a rapid and wide spread of infectious disease threatening many lives and economy damages. It is important to fore-tell the epidemic lifetime so to decide on timely and remedic actions. These measures include closing borders, schools, suspending community services and commuters. Resuming such curfews depends on the momentum of the outbreak and its rate of decay. Being able to accurately forecast the fate of an epidemic is an extremely important but difficult task. Due to limited knowledge of the novel disease, the high uncertainty involved and the complex societal-political factors that influence the widespread of the new virus, any forecast is anything but reliable. Another factor is the insufficient amount of available data. Data samples are often scarce when an epidemic just started. With only few training samples on hand, finding a forecasting model which offers forecast at the best efforts is a big challenge in machine learning. In the past, three popular methods have been proposed, they include 1) augmenting the existing little data, 2) using a panel selection to pick the best forecasting model from several models, and 3) fine-tuning the parameters of an individual forecasting model for the highest possible accuracy. In this paper, a methodology that embraces these three virtues of data mining from a small dataset is proposed. An experiment that is based on the recent coronavirus outbreak originated from Wuhan is conducted by applying this methodology. It is shown that an optimized forecasting model that is constructed from a new algorithm, namely polynomial neural network with corrective feedback (PNN+cf) is able to make a forecast that has relatively the lowest prediction error. The results showcase that the newly proposed methodology and PNN+cf are useful in generating acceptable forecast upon the critical time of disease outbreak when the samples are far from abundant.
Article 43 of 48

A time delay dynamic system with external source for the local outbreak of 2019-nCoV

Chen, Y (Chen, Yu); Cheng, J (Cheng, Jin); Jiang, Y (Jiang, Yu); Liu, KJ (Liu, Keji)

APPLICABLE ANALYSIS DOI: 10.1080/00036811.2020.1732357 Early Access Date: FEB 2020

Abstract:

How to model the 2019 CoronaVirus (2019-nCov) spread in China is one of the most urgent and interesting problems in applied mathematics. In this paper, we propose a novel time delay dynamic system with external source to describe the trend of local outbreak for the 2019-nCoV. The external source is introduced in the newly proposed dynamic system, which can be considered as the suspected people travel to different areas. The numerical simulations exhibit the dynamic system with the external source is more reliable than the one without it, and the rate of isolation is extremely important for controlling the increase of cumulative confirmed people of 2019-nCoV. Based on our numerical simulation results with the public data, we suggest that the local government should have some more strict measures to maintain the rate of isolation. Otherwise the local cumulative confirmed people of 2019-nCoV might be out of control.

Accession Number: WOS:000516741100001

Article 44 of 48

Learning from the Past: Possible Urgent Prevention and Treatment Options for Severe Acute Respiratory Infections Caused by 2019-nCoV

Morse, JS (Morse, Jared S.); Lalonde, T (Lalonde, Tyler); Xu, SQ (Xu, Shiqing); Liu, WR (Liu, Wenshe Ray)

CHEMBIOCHEM Volume: 21 Issue: 5 Pages: 730-738 DOI: 10.1002/cbic.202000047 Early Access Date: FEB 2020 Published: MAR 2 2020

Abstract:

With the current trajectory of the 2019-nCoV outbreak unknown, public health and medicinal measures will both be needed to contain spreading of the virus and to optimize patient outcomes. Although little is known about the virus, an examination of the genome sequence shows strong homology with its better-studied cousin, SARS-CoV. The spike protein used for host cell infection shows key nonsynonymous mutations that might hamper the efficacy of previously developed therapeutics but remains a viable target for the development of biologics and macrocyclic peptides. Other key drug targets, including RNA-dependent RNA polymerase and coronavirus main proteinase (3CLpro), share a strikingly high (>95%) homology to SARS-CoV. Herein, we suggest four potential drug candidates (an ACE2-based peptide, remdesivir, 3CLpro-1 and a novel vinylsulfone protease inhibitor) that could be used to treat patients suffering with the 2019-nCoV. We also summarize previous efforts into drugging these targets and hope to help in the development of broad-spectrum anti-coronaviral agents for future epidemics.
Estimated effectiveness of symptom and risk screening to prevent the spread of COVID-19

Gostic, K (Gostic, Katelyn); Gomez, ACR (Gomez, Ana C. R.); Mummah, RO (Mummah, Riley O.); Kucharski, AJ (Kucharski, Adam J.); Lloyd-Smith, JO (Lloyd-Smith, James O.)

ELIFE Volume: 9 Article Number: e55570 DOI: 10.7554/eLife.55570 Published: FEB 24 2020

Abstract:

Traveller screening is being used to limit further spread of COVID-19 following its recent emergence, and symptom screening has become a ubiquitous tool in the global response. Previously, we developed a mathematical model to understand factors governing the effectiveness of traveller screening to prevent spread of emerging pathogens (Gostic et al., 2015). Here, we estimate the impact of different screening programs given current knowledge of key COVID-19 life history and epidemiological parameters. Even under best-case assumptions, we estimate that screening will miss more than half of infected people. Breaking down the factors leading to screening successes and failures, we find that most cases missed by screening are fundamentally undetectable, because they have not yet developed symptoms and are unaware they were exposed. Our work underscores the need for measures to limit transmission by individuals who become ill after being missed by a screening program. These findings can support evidence-based policy to combat the spread of COVID-19, and prospective planning to mitigate future emerging pathogens.

High expression of ACE2 receptor of 2019-nCoV on the epithelial cells of oral mucosa

Xu, H (Xu, Hao); Zhong, L (Zhong, Liang); Deng, JX (Deng, Jiaxin); Peng, JK (Peng, Jiakuan); Dan, HX (Dan, Hongxia); Zeng, X (Zeng, Xin); Li, TW (Li, Taiwen); Chen, QM (Chen, Qianming)

INTERNATIONAL JOURNAL OF ORAL SCIENCE Volume: 12 Issue: 1 Article Number: 8 DOI: 10.1038/s41368-020-0074-x Published: FEB 24 2020

Abstract:

It has been reported that ACE2 is the main host cell receptor of 2019-nCoV and plays a crucial role in the entry of virus into the cell to cause the final infection. To investigate the potential route of 2019-nCov infection on the mucosa of oral cavity, bulk RNA-seq profiles from two public databases including The Cancer Genome Atlas (TCGA) and Functional Annotation of The Mammalian Genome Cap Analysis of Gene Expression (FANTOM5 CAGE) dataset were collected. RNA-seq profiling data of 13 organ types with para-carcinoma normal tissues from TCGA and 14 organ types with normal tissues from FANTOM5 CAGE were analyzed in order to explore and validate the expression of ACE2 on the mucosa of oral cavity. Further, single-cell transcriptomes from an independent data generated in-house were used to identify and confirm the ACE2-expressing cell
composition and proportion in oral cavity. The results demonstrated that the ACE2 expressed on the mucosa of oral cavity. Interestingly, this receptor was highly enriched in epithelial cells of tongue. Preliminarily, those findings have explained the basic mechanism that the oral cavity is a potentially high risk for 2019-nCoV infectious susceptibility and provided a piece of evidence for the future prevention strategy in dental clinical practice as well as daily life.

Accession Number: WOS:000516545000001

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Clinical and biochemical indexes from 2019-nCoV infected patients linked to viral loads and lung injury

Liu, YX (Liu, Yingxia); Yang, Y (Yang, Yang); Zhang, C (Zhang, Cong); Huang, FM (Huang, Fengming); Wang, FX (Wang, Fuxiang); Yuan, J (Yuan, Jing); Wang, ZQ (Wang, Zhaolin); Li, JX (Li, Jinxiu); Li, JM (Li, Jianming); Feng, C (Feng, Cheng); Zhang, Z (Zhang, Zheng); Wang, LF (Wang, Lifei); Peng, L (Peng, Ling); Chen, L (Chen, Li); Qin, YH (Qin, Yuhao); Zhao, DD (Zhao, Dandan); Tan, SG (Tan, Shuguang); Yin, L (Yin, Lu); Xu, J (Xu, Jun); Zhou, CZ (Zhou, Congzhao); Jiang, CY (Jiang, Chengyu); Liu, L (Liu, Lei)

SCIENCE CHINA-LIFE SCIENCES Volume: 63 Issue: 3 Pages: 364-374 DOI: 10.1007/s11427-020-1643-8 Early Access Date: FEB 2020 Published: MAR 2020

Abstract:

The outbreak of the 2019-nCoV infection began in December 2019 in Wuhan, Hubei province, and rapidly spread to many provinces in China as well as other countries. Here we report the epidemiological, clinical, laboratory, and radiological characteristics, as well as potential biomarkers for predicting disease severity in 2019-nCoV-infected patients in Shenzhen, China. All 12 cases of the 2019-nCoV-infected patients developed pneumonia and half of them developed acute respiratory distress syndrome (ARDS). The most common laboratory abnormalities were hypoaalbuminemia, lymphopenia, decreased percentage of lymphocytes (LYM) and neutrophils (NEU), elevated C-reactive protein (CRP) and lactate dehydrogenase (LDH), and decreased CD8 count. The viral load of 2019-nCoV detected from patient respiratory tracts was positively linked to lung disease severity. ALB, LYM, LYM (%), LDH, NEU (%), and CRP were highly correlated to the acute lung injury. Age, viral load, lung injury score, and blood biochemistry indexes, albumin (ALB), CRP, LDH, LYM (%), LYM, and NEU (%), may be predictors of disease severity. Moreover, the Angiotensin II level in the plasma sample from 2019-nCoV infected patients was markedly elevated and linearly associated to viral load and lung injury. Our results suggest a number of potential diagnosis biomarkers and angiotensin receptor blocker (ARB) drugs for potential repurposing treatment of 2019-nCoV infection.

Accession Number: WOS:000518376300004

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Drug treatment options for the 2019-new coronavirus (2019-nCoV)

Lu, HZ (Lu, Hongzhou)
Abstract:
As of January 22, 2020, a total of 571 cases of the 2019-new coronavirus (2019-nCoV) have been reported in 25 provinces (districts and cities) in China. At present, there is no vaccine or antiviral treatment for human and animal coronavirus, so that identifying the drug treatment options as soon as possible is critical for the response to the 2019-nCoV outbreak. Three general methods, which include existing broad-spectrum antiviral drugs using standard assays, screening of a chemical library containing many existing compounds or databases, and the redevelopment of new specific drugs based on the genome and biophysical understanding of individual coronaviruses, are used to discover the potential antiviral treatment of human pathogen coronavirus. Lopinavir /Ritonavir, Nucleoside analogues, Neuraminidase inhibitors, Remdesivir, peptide (EK1), arbidol, RNA synthesis inhibitors (such as TDF, 3TC), anti-inflammatory drugs (such as hormones and other molecules), Chinese traditional medicine, such ShuFengJieDu Capsules and Lianhuaqingwen Capsule, could be the drug treatment options for 2019-nCoV. However, the efficacy and safety of these drugs for 2019-nCoV still need to be further confirmed by clinical experiments.

Accession Number: WOS:000519548300011