EVIDENCE SEARCH REPORT

RESEARCH QUESTION: What are the fatality rates associated with COVID-19 for ICU, hospitalized, and patients discharged from ICU to general wards?

UNIQUE IDENTIFIER: EPM052101-01 ESR

RESOURCES USED:
- 2019 Novel Coronavirus Research Compendium (NCRC)
- CDC database
- CEBM
- CINAHL
- DynaMed
- Evidence Check (Australia)
- Google Scholar
- LitCovid
- MEDLINE
- medRxiv
- NCCMT (McMaster)
- PHAC website & database
- PsychInfo
- PubMed
- TRIP
- Veteran Affairs database (US)
- WHO Global Research on COVID-19
- Open grey
- Reference/Citation Lists

LIMITS/EXCLUSIONS/INCLUSIONS: English

DATE: May 21, 2020

LIBRARIAN: Michelle Dalidowicz, Mark Mueller

REQUESTOR: Dr. Jenny Basran

TEAM: Epidemiology & Modeling

SEARCH ALERTS CREATED: NO

CITE AS:

LIBRARIAN NOTES/COMMENTS

Hello Hazel and Dr. Basran,

Since Dr. Basran had already indicated that contact had been initiated with PHAC and CIHI for data, we did not investigate those sources in great detail. We have included a selection of data sources which don’t provide the fatality rate but you may be able to extrapolate the numerator and denominator from the numbers provided. For some of the articles, we have pulled out the data to expedite your process.

Thanks,
Michelle & Mark

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SEARCH RESULTS

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SUMMARIES, GUIDELINES & OTHER RESOURCES

Data

NOTE: You may need to extrapolate this information to find rates

John Hopkins Coronavirus resource centre: Worldwide mortality
https://coronavirus.jhu.edu/data/mortality


COVID-19: Death Data in England

Canada COVID-19 situational awareness dashboard
https://experience.arcgis.com/experience/2f1a13ca0b29422f9b34660f0b705043/

Simkoe Muskoka Health Stats (Ontario) http://www.simcoemuskokahealthstats.org/topics/infectious-diseases/a-h/covid-19#Age-Spec


LIBRARIAN’S NOTE: This tool highlights fatality rates and distribution among age groups and sex as well as by region


LIBRARIAN’S NOTE: This page contains mortality rates per 100,000 people for COVID-19 in the city of Montreal. Mortality rates are broken down by age, sex, and borough.

Articles


Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area.
https://pubmed.ncbi.nlm.nih.gov/32320003/?from_single_result=32320003&expanded_search_query=32320003
88.1% mortality reported in hospitalized patients in New York receiving mechanical ventilation.

Characteristics of Hospitalized Adults With COVID-19 in an Integrated Health Care System in California.  
https://pubmed.ncbi.nlm.nih.gov/32329797/?from_single_result=32329797&expanded_search_query=32329797


COVID-19: Case fatality rate and infection fatality rate for serious COVID-19, 1st update – a rapid review.  
https://www.fhi.no/en/publ/2020/Case-fatality-rate-and-infection-fatality-rate-for-serious-Covid-19/ (only the summary is in English)

Covid-19 in Critically Ill Patients in the Seattle Region - Case Series  

- 50% mortality reported in adults with confirmed COVID-19 admitted to intensive care units in Seattle, Washington, area

Baseline Characteristics and Outcomes of 1591 Patients Infected With SARS-CoV-2 Admitted to ICUs of the Lombardy Region, Italy  

- 26% mortality reported in adults ≥ 21 years old with confirmed COVID-19 admitted to COVID-only ICUs in Lombardy, Italy

https://pubmed.ncbi.nlm.nih.gov/32091533/?from_single_result=32091533&expanded_search_query=32091533

- General population: The overall case fatality rate was 2.3 percent; no deaths were reported among noncritical cases.

https://jamanetwork.com/journals/jama/fullarticle/2763667


ARTICLES FROM THE LIBRARY DATABASES


**ABSTRACT:** Background: A key impact measure of COVID-19 pandemic is the case fatality rate (CFR), but estimating it during an epidemic is challenging as the true number of cases may remain elusive. Objective: To estimate the CFR applying a delay-adjusted method across countries, exploring differences to simple methods and potential correlation to country level variables. Methods: Secondary analysis of publicly available data from countries with ≥500 cases by April 30th. We calculated CFR adjusting for delay time from diagnosis to death and using simple methods for comparison. We performed a random effects meta-analysis to pooling CFRs for all countries and for those with high testing coverage and low positivity rate. We explored correlation of adjusted CFR with age structure and health care resources at country level. Results: We included 107 countries...
and the Diamond Princess cruise-ship. The overall delay adjusted CFR was 2.8% (95%CI: 2.1 to 3.1) while naive CFR was 5.1% (95%CI: 4.1 to 6.2). In countries with high testing coverage/low positivity rate the pooled adjusted CFR was 2.1% (95%CI: 1.5 to 3.0), there was a correlation with age over 65 years (β = 0.12; 95%CI: 0.06 to 0.18), but not with number of physician or critical care beds. Naive method underestimated the CFR of the CFR with a median of 1.3% across countries. Conclusion: Our best estimation of CFR across countries is 2% and varies according to the aged population size. Modelers and policy makers may consider these results to assess the impact of lockdowns or other mitigation policies.Competing Interest StatementThe authors have declared no competing interest.Funding StatementThis research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.Author DeclarationsAll relevant ethical guidelines have been followed; any necessary IRB and/or ethics committee approvals have been obtained and details of the IRB/oversight body are included in the manuscript.YesAll necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived.YesI understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance).YesI have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable.YesData used for the analysis is described in the supplementary file.

URL: http://medrxiv.org/content/early/2020/05/16/2020.05.13.20099796.abstract
DOI: 10.1101/2020.05.13.20099796


10.1017/dmp.2020.63.

ABSTRACT: OBJECTIVE: To describe the epidemiologic features of an outbreak of coronavirus disease (COVID-19) in Tianjin caused by a novel coronavirus (2019-nCoV) and to provide scientific basis for prevention and control measures. METHODS: Data from COVID-19 cases were collected from daily notifications given to the National Health Commission of the People's Republic of China and Tianjin Health Committee. All of the data were analyzed with SPSS version 24.0 software. RESULTS: As of February 24, 2020, there have been 135 confirmed cases, 3 deaths, and 87 recoveries in Tianjin, China. The incidence of COVID-19 was 8.65/1,000,000 with a 2.22% case fatality rate. Regarding geographic distribution, the incidence was 8.82 per 1,000,000 in urban areas and 8.00 per 1,000,000 in suburbs. During the early stage of the epidemic, most cases came from urban areas and in patients with a history of sojourning in Hubei Province. The majority of patients were 31-70 years old (75.97%). A familial cluster was the most important characteristic of COVID-19 (accounting for 74.81%). CONCLUSIONS: Current information suggests that people are generally susceptible to COVID-19, which has shown a familial cluster in Tianjin.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7156568/
DOI: 10.1017/dmp.2020.63.; ID: 7793
10.1017/dmp.2020.63


ABSTRACT: In this study, we examine which treatments are being used, assess clinical and laboratory features and short-term outcomes of patients with COVID-19 in intensive care unit (ICU). The ICU patients were older (66[54-76] vs. 31[35-62]) and more likely exposed to source of transmission (66.7% vs. 40.2%) when compared to the non-ICU patients. ICU patients had a higher mortality rate than non-ICU patients (33.3% vs. 13.1%), but this difference was not significant (I P i = 0.081).

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7079866/
DOI: 10.1007/s00134-020-05987-7


ABSTRACT: Objective In December, 2019, a series of pneumonia cases of unknown cause emerged in Wuhan, Hubei, China. In this study, we investigate clinical and laboratory features and short-term outcomes of patients with Corona Virus Disease 2019(COVID-19). Methods All patients with COVID-19 admitted to Wuhan University Zhongnan Hospital in Wuhan, China, between January 3 and February 1, 2020 were included. All those patients were with laboratory-confirmed infection. Epidemiological, clinical, radiological characteristics, underlying diseases, laboratory tests treatment, complications and outcomes data were collected. Outcomes were followed up at discharge until Feb 15, 2020. Results The study cohort included 102 adult patients. The median (IQR) age was 54 years (37-67years) and 48.0% were female. A total of 34 patients (33.3%) were
exposed to source of transmission in the hospital setting (as health care workers, patients, or visitors) and 10 patients (9.8%) had a familial cluster. Eighteen patients (17.6%) were admitted to the ICU, and 17 patients died (mortality, 16.7%; 95% confidence interval [CI], 9.4%-23.9%). Among patients who survived, they were younger, more likely were health care workers and less likely suffered from comorbidities. They were also less likely suffered from complications. There was no difference in drug treatment rates between the survival and non-survival groups. Patients who survived less likely required admission to the intensive care unit (14.1% vs. 35.3%). Chest imaging examination showed that death patients more likely had ground-glass opacity (41.2% vs. 12.9%). Conclusions The mortality rate was high among the COVID-19 patients described in our cohort who met our criteria for inclusion in this analysis. Patient characteristics seen more frequently in those who died were development of systemic complications following onset of the illness and the severity of disease requiring admission to the ICU. Our data support those described by others that COVID-19 infection results from human-to-human transmission, including familial clustering of cases, and nosocomial transmission. There were no differences in mortality among those who did or did not receive antimicrobial or glucocorticoid drug treatment.

URL: https://wwwnc.cdc.gov/eid/article/26/8/201093/ciaa243/5814897
DOI: 10.1093/cid/ciaa243


ABSTRACT: Background: Currently, the epidemic of coronavirus disease 2019 (COVID-19) has begun to spread worldwide. We aim to explore reliable evidence for the diagnosis and treatment of the COVID-19 by analyzing all the published studies by Chinese scholars on the clinical and imaging features in novel coronavirus pneumonia caused by SARS-CoV-2. Method(s): We searched five medical databases including two Chinese and three English databases for all published articles on COVID-19 since the outbreak. A random-effects model was designed, and the imaging and clinical data from all studies were collected for meta-analysis. Result(s): Overall, 31 articles and 46 959 patients were included, including 10 English articles and 21 Chinese articles. The results of meta-analysis showed that the most common clinical manifestations were fever (87.3%; 0.838–0.909), cough (58.1%; 0.502–0.660), dyspnea (38.3%; 0.246–0.520), muscle soreness or fatigue (35.5%; 0.253–0.456), and chest distress (31.2%; 0.024 to 0.648). The main imaging findings were bilateral pneumonia (75.7%; 0.639–0.871) and ground-glass opacification (69.9%; 0.602–0.796). Among the patients, the incidence that required intensive care unit (ICU) was (29.3%; 0.190–0.395), the incidence with acute respiratory distress syndrome was (28.8%; 0.147–0.429), the incidence with multiple organ dysfunction syndrome was (8.5%; 0.008 to 0.179), and the case fatality rate of patients with COVID-19 was (6.8%; 0.044–0.093). Conclusion(s): COVID-19 is a new clinical infectious disease that mainly causes bilateral pneumonia and lung function deteriorates rapidly. Nearly a third of patients need to be admitted to the ICU, and patients are likely to present respiratory failure or even death. Copyright © 2020 Wiley Periodicals, Inc.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7228215/


ABSTRACT: Limited data are available on the clinical presentation and outcomes of coronavirus disease (COVID-19) patients in the United States hospitalized under normal-caseload or nonsurge conditions. We retrospectively studied 72 consecutive adult patients hospitalized with COVID-19 in 2 hospitals in the San Francisco Bay area, California, USA, during March 13-April 11, 2020. The death rate for all hospitalized COVID-19 patients was 8.3%, and median length of hospitalization was 7.5 days. Of the 21 (29% of total) intensive care unit patients, 3 (14.3% died); median length of intensive care unit stay was 12 days. Of the 72 patients, 43 (59.7%) had underlying cardiovascular disease and 19 (26.4%) had underlying pulmonary disease. In this study, death rates were lower than those reported from regions of the United States experiencing a high volume of COVID-19 patients.

URL: https://wwwnc.cdc.gov/eid/article/26/8/20-1776_article


ABSTRACT: Objective: To better inform efforts to treat and control the current outbreak with a comprehensive characterization of COVID-19.Methods: We searched PubMed, EMBASE, Web of Science, and CNKI (Chinese Database) for studies published as of March 2, 2020, and we searched references of identified articles. Studies were reviewed for methodological quality. A random-effects model was used to pool results. Heterogeneity was assessed using I2. Publication bias was assessed using Egger’s test. Results: 43 studies involving 3600 patients were included. Among COVID-19 patients, fever (83.3% [95% CI 78.4-87.7]), cough (60.3% [54.2–66.3]), and fatigue (38.0% [29.8–46.5]) were the most common clinical symptoms. The most common laboratory abnormalities were elevated C-reactive protein (68.6% [58.2–78.2]), decreased lymphocyte count (57.4% [44.8–69.5])
and increased lactate dehydrogenase (51.6% [31.4-71.6]). Ground-glass opacities (80.0% [67.3-90.4]) and bilateral pneumonia (73.2% [63.4-82.1]) were the most frequently reported findings on computed tomography. The overall estimated proportion of severe cases and case-fatality rate (CFR) was 25.6% (17.4-34.9) and 3.6% (1.1-7.2), respectively. CFR and laboratory abnormalities were higher in severe cases, patients from Wuhan, and older patients, but CFR did not differ by gender.

Conclusions: The majority of COVID-19 cases are symptomatic with a moderate CFR. Patients living in Wuhan, older patients, and those with medical comorbidities tend to have more severe clinical symptoms and higher CFR.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151416/
DOI: 10.1016/j.jinf.2020.03.041


ABSTRACT: Background: Italy was the first European country hit by the COVID-19 pandemic and has the highest number of recorded COVID-19 deaths in Europe. Methods: This prospective cohort study of the correlates of the risk of death in COVID-19 patients was conducted at the Infectious Diseases and Intensive Care units of Luigi Sacco Hospital, Milan, Italy. The clinical characteristics of all the COVID-19 patients hospitalised in the early days of the epidemic (21 February -19 March 2020) were recorded upon admission, and the time-dependent probability of death was evaluated using the Kaplan-Meier method (censored as of 20 April 2020). Cox proportional hazard models were used to assess the factors independently associated with the risk of death. Results: Forty-eight (20.6%) of the 233 patients followed up for a median of 40 days (interquartile range 33-47) died during the follow-up. Most were males (69.1%) and their median age was 61 years (IQR 50-72). The time-dependent probability of death was 19.7% (95% CI 14.6-24.9%) 30 days after hospital admission. Age (adjusted hazard ratio [aHR] 2.08, 95% CI 1.48-2.92 per ten years more) and obesity (aHR 3.04, 95% CI 1.42-6.49) were independently associated with an increased risk of death, which was also associated with critical disease (aHR 8.26, 95% CI 1.41-48.29), C-reactive protein levels (aHR 1.17, 95% CI 1.02-1.35 per 50 mg/L more) and creatinine kinase levels above 185 U/L (aHR 2.58, 95% CI 1.37-4.87) upon admission. Conclusions: Case-fatality rate of patients hospitalized with COVID-19 in the early days of the Italian epidemic was about 20%. Our study adds evidence to the notion that older age, obesity and more advanced illness are factors associated to an increased risk of death among patients hospitalized with COVID-19.

Competing Interest Statement: AG received consultancy fees from Mylan and non-financial educational support from Gilead. SR received grants, fees for speakers bureau, advisory boards and CME activities from BMS, ViV, MSD, AbbVie, Gilead, Janssen. MG received grants, fees for speakers bureau, advisory boards and CME activities from BMS, ViV, MSD, AbbVie, Gilead, Janssen and Roche. GR received grants, fees for speakers bureau, advisory boards and CME activities from BMS, ViV, MSD, AbbVie, Gilead, Janssen and Roche.


ABSTRACT: Objectives. To describe the age-specific prevalence of SARS-CoV-2 disease (COVID-19) and its prognostic factors. Design. Population-based prospective cohort study on archive data. Setting. Preventive services and hospital care in the province of Reggio Emilia, Northern Italy. Participants. All 2653 symptomatic patients who tested positive for SARS-CoV-2 from February 27 to April 2, 2020 in the province of Reggio Emilia. Main outcome measures. Hospitalization and death up to April 2, 2020. Results. Females had higher prevalence of infection than males below age 50 (2.61 vs. 1.84 per 1000), but lower in older ages (16.49 vs. 20.86 per 1000 over age 80). Case fatality rate reached 20.7% (22/106) in cases with more than 4 weeks follow up. After adjusting for age and comorbidities, men had a higher risk of hospitalization (hazard ratio [HR] 1.4 95%
confidence interval (95% CI) 1.2 to 1.6) and of death (HR 1.6, 95% CI 1.2 to 2.1). Patients over age 80 compared to < age 50 had HR 7.1 (95% CI 5.4 to 9.3) and HR 27.8 (95% CI 12.5 to 61.7) for hospitalization and death, respectively. Immigrants had a higher risk of hospitalization (HR 1.3, 95% CI 0.99 to 1.81) than Italians and a similar risk of death. Risk of hospitalization and of death were higher in patients with heart failure (HR 1.6, 95% CI 1.2 to 2.1) and HR 2.3, 95% CI 1.6 to 3.2, respectively), arrhythmia (HR 1.5, 95% CI 1.2 to 1.9 and HR 1.8, 95% CI 1.3 to 2.5, respectively), dementia (HR 1.2, 95% CI 0.9 to 1.8 and HR 1.8, 95% CI 1.1 to 2.8, respectively), ischemic heart disease (HR 1.3, 95% CI 1.0 to 1.7 and HR 1.7, 95% CI 1.2 to 2.5, respectively), diabetes (HR 1.5, 95% CI 1.3 to 1.9 and HR 1.6, 95% CI 1.1 to 2.2, respectively), and hypertension (HR 1.4, 95% CI 1.2 to 2.6 and HR 1.6, 95% CI 1.2 to 2.1, respectively), while COPD increased the risk of hospitalization (HR 1.9, 95% CI 1.4 to 2.5) but not of death (HR 1.1, 95% CI 0.7 to 1.7). Previous use of ACE inhibitors has no effect on risk of death (HR 0.97, 95% CI 0.69 to 1.34). Conclusions. The mechanisms underlying these associations are mostly unknown. A deeper understanding of the causal chain from infection, disease onset, and immune response to outcomes may explain how these prognostic factors act.

Competing Interest Statement: The authors have declared no competing interest.

Funding Statement: There was no external funding source for this study.

Author Declarations: All relevant ethical guidelines have been followed; any necessary IRB and/or ethics committee approvals have been obtained and details of the IRB/oversight body are included in the manuscript. Yes. All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. Yes! I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance). Yes! I have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable. Yes! According to Italian law, anonymized data can only be made publicly available if there is potential for the re-identification of individuals (https://www.garanteprivacy.it). Thus, the data underlying this study are available on request to researchers who meet the criteria for access to confidential data. In order to obtain data, approval must be obtained from the Area Vasta Emilia Nord (AVEN) Ethics Committee, who would then authorize us to provide aggregated or anonymized data. Data access requests should be addressed to the Ethics Committee at CEReggioemilia@ausl.re.it as well as to the authors at the Epidemiology unit of AUSL - IRCCS of Reggio Emilia at info.epi@ausl.re.i , who re the data guardians.

URL: http://medrxiv.org/content/early/2020/04/16/2020.04.13.20063545.abstract

DOI: 10.1101/2020.04.13.20063545


ABSTRACT: Although some information on the epidemiology of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and a few selected cases has been reported, data on the clinical characteristics and outcomes of patients hospitalized therewith in South Korea are lacking. We conducted a retrospective single-center study of 98 consecutive hospitalized patients with confirmed SARS-CoV-2 infection at Yeungnam University Medical Center in Daegu, South Korea. Sixty patients were women (61.2%), and the mean age was 55.4+/−17.1 years. Thirteen patients (13.3%) were treated in the intensive care unit (ICU). The mean interval from symptom onset to hospitalization was 7.7+/−4.5 days. Patients who received ICU care were significantly older and were more likely to have diabetes mellitus. The National Early Warning Score on the day of admission was significantly higher in patients requiring ICU care. Acute respiratory distress syndrome (13/13 patients; 100%), septic shock (9/13; 69.2%), acute cardiac injury (9/13; 69.2%), and acute kidney injury (8/13; 61.5%) were more common in patients who received ICU care. All patients received antibiotic therapy, and most (97/98 patients; 99.0%) received antiviral therapy (lopinavir/ritonavir). Hydroxychloroquine was used in 79 patients (80.6%), and glucocorticoid therapy was used in 18 patients (18.4%). In complete blood counts, lymphopenia was the most common finding (40/98 patients; 40.8%). Levels of all proinflammatory cytokines were significantly higher in ICU patients. As of March 29, 2020, the mortality rate was 5.1%. Here, we report the clinical characteristics and laboratory findings of SARS-CoV-2 patients in South Korea up to March 29, 2020. Copyright © Yonsei University College of Medicine 2020.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7214108/


ABSTRACT: Background: A recent cluster of pneumonia cases in Wuhan, China, was caused by a novel betacoronavirus, the 2019 novel coronavirus (2019-nCoV). We report the epidemiological, clinical, laboratory, and radiological characteristics and treatment and clinical outcomes of these patients. Method(s): All patients with suspected 2019-nCoV were admitted to a designated hospital in Wuhan. We prospectively collected and analysed data on patients with laboratory-confirmed 2019-nCoV infection by real-time RT-PCR and next-generation sequencing. Data were obtained with standardised data collection
forms shared by WHO and the International Severe Acute Respiratory and Emerging Infection Consortium from electronic medical records. Researchers also directly communicated with patients or their families to ascertain epidemiological and symptom data. Outcomes were also compared between patients who had been admitted to the intensive care unit (ICU) and those who had not. Finding(s): By Jan 2, 2020, 41 admitted hospital patients had been identified as having laboratory-confirmed 2019-nCoV infection. Most of the infected patients were men (30 [73%] of 41); less than half had underlying diseases (13 [32%]), including diabetes (eight [20%]), hypertension (six [15%]), and cardiovascular disease (six [15%]). Median age was 49.0 years (IQR 41.0-58.0). 27 (66%) of 41 patients had been exposed to Huanan seafood market. One family cluster was found. Common symptoms at onset of illness were fever (40 [98%] of 41 patients), cough (31 [76%]), and myalgia or fatigue (18 [44%]); less common symptoms were sputum production (11 [28%] of 39), headache (three [8%] of 38), haemoptysis (two [5%] of 39), and diarrhoea (one [3%] of 38). Dyspnoea developed in 22 (55%) of 40 patients (median time from illness onset to dyspnoea 8.0 days [IQR 5.0-13.0]). 26 (63%) of 41 patients had lymphopenia. All 41 patients had pneumonia with abnormal findings on chest CT. Complications included acute respiratory distress syndrome (12 [29%]), RNAemia (six [15%]), acute cardiac injury (five [12%]) and secondary infection (four [10%]). 13 (32%) patients were admitted to an ICU and six (15%) died. Compared with non-ICU patients, ICU patients had higher plasma levels of IL2, IL7, IL10, GSCF, IP10, MCP1, MIP1A, and TNFalpha. Interpretation(s): The 2019-nCoV infection caused clusters of severe respiratory illness similar to severe acute respiratory syndrome coronavirus and was associated with ICU admission and high mortality. Major gaps in our knowledge of the origin, epidemiology, duration of human transmission, and clinical spectrum of disease need fulfillment by future studies. Funding(s): Ministry of Science and Technology, Chinese Academy of Medical Sciences, National Natural Science Foundation of China, and Beijing Municipal Science and Technology Commission. Copyright © 2020 Elsevier Ltd
URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7159299/

ABSTRACT: COVID-19 is currently causing concern in the medical community as the virus is spreading around the world. It has a heavy global burden, particularly in low-income countries. The clinical spectrum of COVID-19 pneumonia ranges from mild to critically ill cases and Acute Respiratory Distress Syndrome. An expert panel was held and an internal protocol was developed to manage the COVID-19 induced ARDS according to WHO recommendations and NIH guidelines. Different therapeutic regimens were employed on this protocol based on the ARDS severity and the patients’ special characteristics. The mortality rate, the rate of survivors, and non-survivors were reported. Of the 231 suspected cases of COVID-19 admitted to the hospital during two weeks, 72 patients were admitted to ICU with diagnosis confirmed by RT-PCR. In total, mortality in the ICU was 25% (n = 18) among ARDS patients over two weeks. COVID-19 induced ARDS is a major concern. The rapid progression of ARDS needs specific protocol based on patients’ characteristics and rapid action. Copyright © 2020, Iranian Journal of Pharmaceutical Research. All rights reserved.
URL: http://ijpr.sbm.ac.ir/article_1101016.html

ABSTRACT: We report the first 7,755 patients with confirmed COVID-19 in Korea as of March 12th, 2020. A total of 66 deaths have been recorded, giving a case fatality proportion of 0.9%. Older people, and those with comorbidities were at a higher risk of a fatal outcome. The highest number of cases of COVID-19 were in Daegu, followed by Gyeongbuk. This summary may help to understand the disease dynamics in the early phase of the COVID-19 outbreaks, and may therefore, guide future public health measures. Copyright © 2020 Korea Centers for Disease Control and Prevention. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7104685/

ABSTRACT: Background: Estimating the prevalence of severe or critical illness and case fatality of COVID-19 outbreak in December, 2019 remains a challenge due to biases associated with surveillance, data synthesis and reporting. We aimed to address this limitation in a systematic review and meta-analysis and to examine the clinical, biochemical and radiological risk factors in a meta-regression. Methods: PRISMA guidelines were followed. PubMed, Scopus and Web of Science were searched using pre-specified keywords on March 07, 2020. Peer-reviewed empirical studies examining prevalence rates of severe illness, critical illness and mortality among COVID-19 patients were examined. Numerators and denominators to compute the prevalence rates and risk factors were extracted. Random-effects meta-analyses were performed. Results were corrected for
publication bias. Meta-regression analyses examined the moderator effects of potential risk factors. Findings: The meta-analysis included 29 studies representing 2,090 individuals. Pooled rates of severe illness, critical illness and case fatality among COVID-19 patients were 15%, 5% and 0.8% respectively. Adjusting for potential underreporting and publication bias, increased these estimates to 26%, 16% and 7.4% respectively. Increasing age and elevated LDH consistently predicted severe / critical disease and case fatality. Hypertension; fever and dyspnea at presentation; and elevated CRP predicted increased severity. Interpretation: Risk factors that emerged in our analyses predicting severity and case fatality should inform clinicians to define endophenotypes possessing a greater risk. Estimated case fatality rate of 7.4% after correcting for publication bias underscores the importance of strict adherence to preventive measures, case detection, surveillance and reporting. Funding Statement: None Declaration of Interests: The authors declare no competing interests


ABSTRACT: Background: Estimating the prevalence of severe or critical illness and case fatality of COVID-19 outbreak in December, 2019 remains a challenge due to biases associated with surveillance, data synthesis and reporting. We aimed to address this limitation in a systematic review and meta-analysis and to examine the clinical, biochemical and radiological risk factors in a meta-regression. Methods: PRISMA guidelines were followed. PubMed, Scopus and Web of Science were searched using pre-specified keywords on March 07, 2020. Peer-reviewed empirical studies examining rates of severe illness, critical illness and case fatality among COVID-19 patients were examined. Numerators and denominators to compute the prevalence rates and risk factors were extracted. Random-effects meta-analyses were performed. Results were corrected for publication bias. Meta-regression analyses examined the moderator effects of potential risk factors. Results: The meta-analysis included 29 studies representing 2,090 individuals. Pooled rates of severe illness, critical illness and case fatality among COVID-19 patients were 15%, 5% and 0.8% respectively. Adjusting for potential underreporting and publication bias, increased these estimates to 26%, 16% and 7.4% respectively. Increasing age and elevated LDH consistently predicted severe / critical disease and case fatality. Hypertension; fever and dyspnea at presentation; and elevated CRP predicted increased severity. Conclusions: Risk factors that emerged in our analyses predicting severity and case fatality should inform clinicians to define endophenotypes possessing a greater risk. Estimated case fatality rate of 7.4% after correcting for publication bias underscores the importance of strict adherence to preventive measures, case detection, surveillance and reporting. Competing Interest Statement: The authors have declared no competing interest. Clinical Trial: Not applicable. Funding Statement: The study was not funded. The authors have no potential conflicts of interest to declare. Author Declarations: All relevant ethical guidelines have been followed; any necessary IRB and/or ethics committee approvals have been obtained and details of the IRB/oversight body are included in the manuscript. Yes All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. Yes I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance). Yes I have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable. Yes The data presented in the manuscript is based entirely on data extracted from peer-reviewed, published research. The authors are willing to share detailed records of all steps including searching databases, systematically screening the literature, quality assessment, data extraction and meta-analysis (including the scripts).

URL: http://medrxiv.org/content/early/2020/04/06/2020.04.01.20050476.abstract

DOI: 10.1101/2020.04.01.20050476


ABSTRACT: Objectives: Case fatality rates (CFR) and recovery rates are important readouts during epidemics and pandemics. In this article, an international analysis was performed on the ongoing coronavirus disease 2019 (COVID-19) pandemic. Methods: Data were retrieved from accurate databases according to the user’s guide of data sources for patient registries, CFR and recovery rates were calculated for each country. A comparison of CFR between countries with total cases = 1,000 was observed for 12th and 23rd March. Results: Italy’s CFR was the highest of all countries studied for both time points (12th March, 6.22% versus 23rd March, 9.26%). The data showed that even though Italy was the only European country reported on 12th March, Spain and France had the highest CFR of 6.16 and 4.21%, respectively, on 23rd March, which was strikingly higher than the overall CFR of 3.61%. Conclusion: Obtaining detailed and accurate medical history from COVID-19 patients, and analyzing CFR alongside the recovery rate, may enable the identification of the highest risk areas so that efficient medical care may be
provided. This may lead to the development of point-of-care tools to help clinicians in stratifying patients based on possible requirements in the level of care, to increase the probabilities of survival from COVID-19 disease.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7104689/
DOI: 10.24171/j.phrp.2020.11.2.03

ABSTRACT: Background: Italy is undergoing an unprecedented COVID-19 epidemic - one of the largest and most lethal outbreaks outside China. The higher death rate observed compared to China COVID-19 raises concern regarding the evolution of the Epidemic. We conducted a comparative analysis of age-specific deaths in COVID-19 patients in Italy and compared them with those reported form the China. Methods: Data on confirmed of 8,342 COVID-19 cases from Italy and 46,672 from China were analysed using stratified analyses by Cochran–Mantel–Haenszel statistics. A logistic model with interaction between age and countries was used for age effect on mortality. Odds-ratios (ORs) were used as measure of association. STATA 15 was used to carry out all analyses. Findings: Overall case fatality rates were 4.28% for Italy and 2.29% China. The probability of death for an Italian COVID-19 case is nearly twice that for Chinese COVID-19 cases. (OR 1.91; 95%CI 1.69-2.16; P<0.001). The ORs by age classes were lower in Italy than in China. The “age” effect between countries was highly heterogeneous (p-value for heterogeneity <0.001). The association with age is direct and linear, age-specific OR to die tends to 1 in older subgroups. The adjusted OR to die across age was lower in Italy compared to China (OR 0.42; 95% CI 0.26-0.65; p-value <0.001). Interpretation: Population aging is a significant factor driving high COVID-19 death rates in Italy. Despite a well-structured healthcare system the explosive epidemic has heavily impacted on the elderly. Further studies are required to delineate other factors in geographical differences in death rates.
URL: https://ssrn.com/abstract=3556640

ABSTRACT: Background: Coronavirus disease 2019 (COVID-19) has spread outside the initial epicenter of Wuhan. We compared cases in Guangzhou and Wuhan to illustrate potential changes in pathogenicity and epidemiological characteristics as the epidemic has progressed. Method(s): We studied 20 patients admitted to the Third Affiliated Hospital of Sun Yat-Sen University in Guangzhou, China from January 22 to February 12, 2020. Data were extracted from medical records. These cases were compared with the 99 cases, previously published in Lancet, from Wuhan Jinyintan Hospital from January 1 to January 20, 2020. Result(s): Guangzhou patients were younger and had better prognosis than Wuhan patients. The Wuhan patients were more likely to be admitted to the ICU (23% vs 5%) and had a higher mortality rate (11% vs 0%). Cases in Guangzhou tended to be more community clustered. Diarrhea and vomiting were more common among Guangzhou patients and SARS-CoV-2 RNA was found in feces. Fecal SARA-CoV-2 RNA remained positive when nasopharyngeal swabs turned negative in some patients. Conclusion(s): This study indicates possible diminishing virulence of the virus in the process of transmission. Yet persistent positive RNA in feces after negative nasopharyngeal swabs suggests a possible prolonged transmission period that challenges current quarantine practices. Copyright © 2020 Elsevier Ltd
URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7194579/

ABSTRACT: The aim of this study was to analyze the clinical data, discharge rate, and fatality rate of COVID-19 patients for clinical help. The clinical data of COVID-19 patients from December 2019 to February 2020 were retrieved from four databases. We statistically analyzed the clinical symptoms and laboratory results of COVID-19 patients and explained the discharge rate and fatality rate with a single-arm meta-analysis. The available data of 1994 patients in 10 literatures were included in our study. The main clinical symptoms of COVID-19 patients were fever (88.5%), cough (68.6%), myalgia or fatigue (35.8%), expectoration (28.2%), and dyspnea (21.9%). Minor symptoms include headache or dizziness (12.1%), diarrhea (4.8%), nausea and vomiting (3.9%). The results of the laboratory showed that the lymphocytopenia (64.5%), increase of C-reactive protein (44.3%), increase of lactic dehydrogenase (28.3%), and leukocytopenia (29.4%) were more common. The results of single-arm meta-analysis showed that the male took a larger percentage in the gender distribution of COVID-19 patients 60% (95% CI [0.54, 0.65]), the discharge rate of COVID-19 patients was 52% (95% CI [0.34,0.70]), and the fatality rate was 5% (95% CI [0.01,0.11]). Copyright © 2020 Wiley Periodicals, Inc.
URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7228329/

ABSTRACT: BACKGROUND: To study the clinical data, discharge rate, and fatality rate of COVID-19 patients for clinical help. METHODS: The clinical data of COVID-19 patients from December 2019 to February 2020 were retrieved from four databases. We statistically analyzed the clinical symptoms and laboratory results of COVID-19 patients and explained the discharge rate, fatality rate with a single-arm meta-analysis. RESULTS: The available data of 1994 patients in 10 literatures were included in our study. The main clinical symptoms of COVID-19 patients were fever (88.5%), cough (68.6%), myalgia or fatigue (35.8%), expectoration (28.2%), dyspnea (21.9%). Minor symptoms include headache or dizziness: (12.1%) diarrhea (4.8%), nausea, and vomiting (3.9%). The results of laboratory results showed that the lymphocytopenia (64.5%), increase of CRP (44.3%), increase of LDH (28.3%), and leukocytopenia (29.4%) were more common. CONCLUSIONS: The results of single-arm meta-analysis showed that: the male took a larger percentage in the gender distribution of COVID-19 patients 60%95%CI (0.54,0.65), the discharge rate of COVID-19 patients was 42%95%CI (0.29,0.55), and the fatality rate was 7%95%CI (0.04,0.10). This article is protected by copyright. All rights reserved.

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DOI: 10.1002/jmv.25757


ABSTRACT: BACKGROUND: During the outbreak of coronavirus disease 2019 (COVID-19), consistent and considerable differences in disease severity and mortality rate of patients treated in Hubei province compared to those in other parts of China has been observed. We sought to compare the clinical characteristics and outcomes of patients being treated inside and outside Hubei province, and explore the factors underlying these differences.

METHODS: Collaborating with the National Health Commission, we established a retrospective cohort to study hospitalised COVID-19 cases in China. Clinical characteristics, the rate of severe events and deaths, and the time to critical illness (invasive ventilation or intensive care unit admission or death) were compared between patients in and outside of Hubei. The impact of Wuhan-related exposure (a presumed key factor that drove the severe situation in Hubei, as Wuhan is the epicenter as well the administrative center of Hubei province) and the duration between symptom onset and admission on prognosis were also determined.

RESULTS: Upon data cut-off (Jan 31st, 2020), 1590 cases from 575 hospitals in 31 provincial administrative regions were collected (core cohort). The overall rate of severe cases and mortality was 16.0% and 3.2%, respectively. Patients in Hubei (predominantly with Wuhan-related exposure, 597/647, 92.3%) were older (mean: 49.7 versus 44.9 years), had more cases with comorbidity (32.9% versus 19.7%), higher symptomatic burden, abnormal radiologic manifestations, and, especially, a longer waiting time between symptom onset and admission (5.7 versus 4.5 days) compared with patients outside Hubei. Patients in Hubei [severe event rate 23.0% versus 11.1%, death rate 7.3% versus 0.3%, hazards ratio (HR) for critical illness 1.59, 95%CI 1.05-2.41] have a poorer prognosis compared with patients outside of Hubei after adjusting for age and comorbidity. However, among patients outside of Hubei, the duration from symptom onset to hospitalisation (mean: 4.4 versus 4.7 days) and prognosis (HR 0.84, 95%CI 0.40-1.80) were similar between patients with or without Wuhan-related exposure. In the overall population, the waiting time, but neither treated in Hubei nor Wuhan-related exposure, remained an independent prognostic factor (HR 1.05, 1.01-1.08).

CONCLUSION: There were more severe cases and poorer outcomes for COVID-19 patients treated in Hubei, which might be attributed to the prolonged duration of symptom onset to hospitalisation in the epicenter. Future studies to determine the reason for delaying hospitalisation are warranted.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7144336/


ABSTRACT: A novel coronavirus was reported in Wuhan, China in December 2019 to cause severe acute respiratory symptoms (COVID-19). In this meta-analysis, we estimated case fatality rate from COVID-19 infection by random effect meta-analysis model with country level data. Publicly accessible web database WorldOMeter (https://www.worldometers.info/coronavirus/) was accessed on 24th March 2020 GMT and reported total number of cases, total death, active cases and seriously ill critically ill patients were retrieved. Primary outcome of this meta-analysis was case fatality rate defined by total number of deaths divided by total number of diagnosed cases. Pooled case fatality rate (95% CI) was 1.78 (1.34 - 2.22) %. Between country heterogeneity was 0.018 (p<0.0001). Pooled estimate of composite poor outcome (95% CI) was 4.06 (3.24 - 4.88) % at that point of time after exclusion of countries reported small number of cases. Pooled mortality rate (95% CI) was 33.97 (27.44-
40.49% amongst closed cases (where patients have recovered or died) with. Meta regression analysis identified statistically significant association between health expenditure and mortality amongst closed cases (p = 0.037). Competing Interest Statement: The authors have declared no competing interest. Funding Statement: No funding received. Author Declarations: All relevant ethical guidelines have been followed; any necessary IRB and/or ethics committee approvals have been obtained and details of the IRB/oversight body are included in the manuscript. Yes. All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. Yes. I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance). Yes. I have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable. Yes. Data will be available from the authors.

URL: https://www.medrxiv.org/content/early/2020/04/14/2020.04.09.20059683.abstract
DOI: 10.1101/2020.04.09.20059683

ABSTRACT: Background: Coronavirus disease 2019 (COVID-19) is a pandemic first originated in Wuhan the capital of Hubei province, China in December 2019 and then spread globally. It is caused by SARS-CoV-2. Until 1<sup>st</sup> April 2020, the number of cases worldwide was recorded to be 823,626 with 40,598 deaths. Most of the reported cases were adults with few cases described in children and neonates. Objective(s): We performed a systematic review and meta-analysis to analyse the disease characterisation in paediatric age group including the possibility of vertical transmission to the neonates. Method(s): Articles published up to 2<sup>nd</sup> April 2020 in PubMed and google Scholar were considered for this study. Finding(s): The most frequently reported symptoms were cough 49% (95% CI: 42 - 55%) and fever 47% (95% CI: 41- 53%). Lymphopenia and increased Procalcitonin were recorded in (21%, 95% CI: 12 - 30%) and (28%, 95% CI: 18 - 37%) respectively. No sex difference for COVID-19 was found in paediatric age group (p = 0.7). Case fatality rate was 0%. Four out of 58 neonates (6.8%) born to COVID-19 confirmed mothers tested positive for the disease. Conclusion(s): The disease trajectory in Paediatric patients has good prognosis compared to adults. Intensive care unit and death are rare. Vertical transmission and virus shedding in breast milk are yet to be established. Copyright © 2020.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7207144/

ABSTRACT: Background: An outbreak of COVID-19 in Iran has spread throughout the country. Identifying the epidemiological characteristics of this disease will help to make appropriate decisions and thus control the epidemic. The aim of this study was characterization of the epidemiological features of COVID-19 in Iran. Method(s): In this retrospective study, data related to the epidemiological characteristics of COVID-19 patients admitted to Baqiyatallah Hospital in Tehran, Iran, from 19 February 2020 to 15 April 2020 have been analyzed and reported. Patient characteristics including age, gender and underlying diseases were investigated. Data were collected through patient records. Sex ratio, Case Fatality Rate (CFR) and daily trend of cases were determined. A multiple logistic regression analysis was also performed to assess affecting factors on mortality. Result(s): From February 19, 2020 to April 15, 2020, 12870 patients referred to the hospital emergency department, of which 2968 were hospitalized with COVID-19 diagnosis. The majority of cases were in the age group of 50 to 60 years of old. The male-to-female ratio was 1.93:1. A total of 239 deaths occurred among all cases for an overall CFR of 1.85% based on the total number of patients (both outpatient and inpatient) and 8.06% among hospitalized patients. Out of all patients 10.89% had comorbidity. Diabetes, chronic respiratory diseases, hypertension, cardiovascular diseases, chronic Kidney diseases and cancer were the most common comorbidities with 3.81, 2.02, 1.99, 1.25, 0.60 and 0.57 %, respectively. Male gender (OR=1.45, 95% CI: 1.08-1.96), older age (OR=1.05, 95% CI: 1.04-1.06) and having underlying diseases (OR=1.53, 95% CI: 1.04-2.24) were significantly associated with mortality. Conclusion(s): The results of this study showed that Male gender, older age and having comorbidities were significantly associated with the risk of death among COVID-19 patients. It is important to pay special attention to male elderly patients with underlying diseases. Copyright © 2020 Elsevier B.V.
URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7172806/

ABSTRACT: This Viewpoint from physicians with the Italian National Institute of Health confirms a higher case-fatality rate from coronavirus disease 2019 (COVID-19) in Italy compared with China and explains possible reasons, including age, cause of death definitions, and testing strategy. [DUPLICATE RECORD]

URL: https://jamanetwork.com/journals/jama/fullarticle/2763667

DOI: 10.1001/jama.2020.4683 [DUPLICATE RECORD]


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.

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DOI: 10.3855/jidc.12600


ABSTRACT: The world faces an unprecedented SARS-CoV2 pandemic where many critical factors still remain unknown. The case fatality rates (CFR) reported in the context of the SARS-CoV-2 pandemic substantially differ between countries. For SARS-CoV-2 infection with its broad clinical spectrum from asymptomatic to severe disease courses, the infection fatality rate (IFR) is the more reliable parameter to predict the consequences of the pandemic. Here we combined virus RT-PCR testing and assessment for SARS-CoV-2 antibodies to determine the total number of individuals with SARS-CoV-2 infections in a given population. Methods: A sero-epidemiological GCP- and GEP-compliant study was performed in a small German town which was exposed to a super-spread event (carnival festivities) followed by strict social distancing measures causing a transient wave of infections. Questionnaire-based information and biomaterials were collected from a random, household-based study population within a seven-day period, six weeks after the outbreak. The number of present and past infections was determined by integrating results from anti-SARS-CoV-2 IgG analyses in blood, PCR testing for viral RNA in pharyngeal swabs and reported previous positive PCR tests. Results: Of the 919 individuals with evaluable infection status (out of 1,007; 405 households) 15.5% (95% CI: [12.3%; 19.0%]) were infected. This is 5-fold higher than the number of officially reported cases for this community (3.1%). Infection was associated with characteristic symptoms such as loss of smell and taste. 22.2% of all infected individuals were asymptomatic. With the seven SARS-CoV-2-associated reported deaths the estimated IFR was 0.36% [0.29%; 0.45%]. Age and sex were not found to be associated with the infection rate. Participation in carnival festivities increased both the infection rate (21.3% vs. 9.5%, p<0.001) and the number of symptoms in the infected (estimated relative mean increase 1.6, p=0.007).

The risk of a person being infected was not found to be associated with the number of study participants in the household this person lived in. The secondary infection risk for study participants living in the same household increased from 15.5% to 43.6%, to 35.5% and to 18.3% for households with two, three or four people respectively (p<0.001). Conclusions: While the number of infections in this high prevalence community is not representative for other parts of the world, the IFR calculated on the basis of the infection rate in this community can be utilized to estimate the percentage of infected based on the number of reported fatalities in other places with similar population characteristics. Whether the specific circumstances of a super-spread event not only have an impact on the infection rate and number of symptoms but also on the IFR requires further investigation. The unexpectedly low secondary infection risk among persons living in the same household has important implications for measures installed to contain the SARS-CoV-2 virus pandemic. Competing Interest Statement: The authors have declared no competing interest. Clinical Trial DRKS00021306 Funding Statement: Funding: The government of the German Federal State of North Rhine-Westphalia unconditionally provided 65,000 Euro to support the study. No other financial support by any third parties was received or used for the study. Author Declarations: All relevant ethical guidelines have been followed; any necessary IRB and/ or ethics committee approvals have been obtained and details of the IRB/oversight body are included in the manuscript. Yes, all necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. Yes, I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please p

ABSTRACT: OBJECTIVE: We aim to summarize reliable evidences of evidence-based medicine for the treatment and prevention of the 2019 novel coronavirus (2019-nCoV) by analyzing all the published studies on the clinical characteristics of patients with 2019-nCoV. METHODS: PubMed, Cochrane Library, Embase, and other databases were searched. Several studies on the clinical characteristics of 2019-nCoV infection were collected for Meta-analysis. RESULTS: Ten studies were included in Meta-analysis, including a total number of 50466 patients with 2019-nCoV infection. Meta-analysis shows that, among these patients, the incidence of fever was 89.1%, the incidence of cough was 72.2%, and the incidence of muscle soreness or fatigue was 42.5%. The incidence of acute respiratory distress syndrome (ARDS) was 14.8%, the incidence of abnormal chest computer tomography (CT) was 96.6%, the percentage of severe cases in all infected cases was 18.1%, and the case fatality rate of patients with 2019-nCoV infection was 4.3%. CONCLUSION: Fever and cough are the most common symptoms in patients with 2019-nCoV infection, and most of these patients have abnormal chest CT examination. Several people have muscle soreness or fatigue as well as ARDS. Diarrhea, hemoptysis, headache, sore throat, shock, and other symptoms only occur in a small number of patients. The case fatality rate of patients with 2019-nCoV infection is lower than that of Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). This article is protected by copyright. All rights reserved.

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DOI: 10.1002/jmv.25735


ABSTRACT: Objective: We aim to summarize reliable evidence of evidence-based medicine for the treatment and prevention of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) by analyzing all the published studies on the clinical characteristics of patients with SARS-CoV-2. Method(s): PubMed, Cochrane Library, Embase, and other databases were searched. Several studies on the clinical characteristics of SARS-CoV-2 infection were collected for meta-analysis. Result(s): Ten studies were included in Meta-analysis, including a total number of 50466 patients with SARS-CoV-2 infection. Meta-analysis shows that, among these patients, the incidence of fever was 0.891 (95% CI: 0.818, 0.945), the incidence of cough was 0.722 (95% CI: 0.657, 0.782), and the incidence of muscle soreness or fatigue was 0.425 (95% CI: 0.213, 0.652). The incidence of acute respiratory distress syndrome (ARDS) was 0.148 (95% CI: 0.046, 0.296), the incidence of abnormal chest computer tomography (CT) was 0.966 (95% CI: 0.921, 0.993), the percentage of severe cases in all infected cases was 0.181 (95% CI: 0.127, 0.243), and the case fatality rate of patients with SARS-CoV-2 infection was 0.043 (95% CI: 0.027, 0.061). Conclusion(s): Fever and cough are the most common symptoms in patients with SARS-CoV-2 infection, and most of these patients have abnormal chest CT examination. Several people have muscle soreness or fatigue as well as ARDS. Diarrhea, hemoptysis, headache, sore throat, shock, and other symptoms are rare. The case fatality rate of patients with SARS-CoV-2 infection is lower than that of Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). This meta-analysis also has limitations, so the conclusions of this Meta-analysis still need to be verified by more relevant studies with more careful design, more rigorous execution, and larger sample size. Copyright © 2020 Wiley Periodicals, Inc. DUPLICATE RECORD as #28

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7228255/
DUPLICATE RECORD (#28)


ABSTRACT: Objective: to provide reliable evidence of evidence-based medicine for the treatment and prevention of the 2019 novel coronavirus (2019-nCoV) by analyzing all the published studies on the clinical characteristics of patients with 2019-nCoV. Methods: PubMed, Cochrane Library, Embase and other databases were searched. Some studies on the clinical characteristics of 2019-nCoV infection were collected for Meta-analysis. Results: 8 studies were included in Meta-analysis, including a total of 5732 patients with 2019-nCoV infection. According to Meta-analysis, among the clinical characteristics of patients with 2019-nCoV infection, the incidence of fever is 90.9%, the incidence of cough is 70.8%, and the incidence of muscle soreness or fatigue is 41%. The incidence of acute respiratory distress syndrome (ARDS) was 14.8%, the incidence of abnormal chest CT was 95.6%, the proportion of severe cases in all infected cases was 24.3%, and the mortality rate of patients with 2019-nCoV infection was 6.4%. Conclusion: Fever and cough are the most common symptoms in patients with 2019-nCoV infection.
infection, and most of them have abnormal chest CT examination. Some people have muscle soreness or fatigue, ARDS. Diarrhea, hemoptysis, headache, sore throat, shock and other symptoms only occur in a small number of patients. The mortality rate of patients with 2019-nCoV infection was lower than that of Severe Acute Respiratory Syndrome (SRAS) and Middle East Respiratory Syndrome (MERS). Funding Statement: There is no funding for our research. Declaration of Interests: The authors have declared that there is no conflict of interest in this study. Ethics Approval Statement: This study utilized PRISMA. Keywords: 2019-nCoV, Coronavirus, Meta-analysis, Mortality, Clinical Symptoms


ABSTRACT: Background: Coronavirus 2019 (COVID-19) first emerged in Wuhan, China in December 2019, but spread rapidly throughout the world and became a pandemic. Critically ill patients require admission to the intensive care unit (ICU) and were potentially life-threatened, but relevant data is scarce by now. Methods: A retrospective analysis of data were performed from all critically ill adult (>18 years old) patients admitted to the ICU of China-France New Town Branch of Tongji Hospital, Wuhan with COVID-19 pneumonia and determined outcomes between Feb 4, 2020 and Mar 12, 2020. Demographic data, symptoms, laboratory values, comorbidities, and clinical outcomes were all collected. Univariate and multivariate logistic regression methods were used to explore the predictors of in-hospital mortality. Findings: Sixty-nine ICU patients with COVID-19 pneumonia were included in the study, of whom 57 (83%) died and 12 (17%) recovered. Median age was 66.0 years, and male accounted for 46 (67%) of the patients. Forty patients (58%) had at least one comorbidity, with hypertension the most commonly seen. All patients had sepsis syndrome, and the median Sequential Organ Failure Assessment (SOFA) score was 6.0 (IQR 4.0–9.5). The median oxygenation index was 65.0 (IQR 53.0–94.0), and the median Acute Physiology, Age, Chronic Health Evaluation II (APACHE II) score was 15.0 (IQR 11.0–20.5). Univariate analysis showed that older age, male, decreased oxygenation index, increased SOFA score, increased APACHE II score, increased lactic dehydrogenase, and increased high-sensitivity cardiac troponin I were predictors of mortality, but oxygenation index was the only independent predictor (OR 1.077, 95% CI 1.034–1.122) in multivariate analysis. Interpretation: COVID-19 pneumonia requiring admission to the ICU had a considerably high mortality rate. Many predictors are associated with mortality, but decreased oxygenation index is the main risk factor for death in these patients. Critically ill patients with a relatively high oxygenation index should be transferred to the ICU early to reach a favorable outcome.

URL: http://dx.doi.org/10.2139/ssrn.3595629


ABSTRACT: Background: Since the first case of a novel coronavirus (COVID-19) infection pneumonia was detected in Wuhan, China, a series of confirmed cases of the COVID-19 were found in Beijing. We analyzed the data of 262 confirmed cases to determine the clinical and epidemiological characteristics of COVID-19 in Beijing. Methods: We collected patients who were transferred by Beijing Emergency Medical Service to the designated hospitals. The information on demographic, epidemiological, clinical, laboratory test for the COVID-19 virus, diagnostic classification, cluster case and outcome were obtained. Furthermore we compared the characteristics between severe and common confirmed cases which including mild cases, no-pneumonia cases and asymptomatic cases, and we also compared the features between COVID-19 and 2003 SARS. Findings: By Feb 10, 2020, 262 patients were transferred from the hospitals across Beijing to the designated hospitals for special treatment of the COVID-19 infected by Beijing emergency medical service. Among of 262 patients, 46 (17.6%) were severe cases, 216 (82.4%) were common cases, which including 192 (73.3%) mild cases, 11(4.2%) non-pneumonia cases and 13 (5.0%) asymptomatic cases respectively. The median age of patients was 47.5 years old and 48.5% were male. 192 (73.3%) patients were residents of Beijing, 50 (26.0%) of which had been to Wuhan, 116 (60.4%) had close contact with confirmed cases, 21 (10.9%) had no contact history. The most common symptoms at the onset of illness were fever (82.1%), cough (45.8%), fatigue (26.3%), dyspnea (6.9%) and headache (6.5%). The median incubation period was 6.7 days, the interval time from between illness onset and seeing a doctor was 4.5 days. As of Feb 10, 17.2% patients have discharged and 81.7% patients remain in hospital in our study, the fatality of COVID-19 infection in Beijing was 0.9%. Interpretation: On the basis of this study, we provided the ratio of the COVID-19 infection on the severe cases to the mild, asymptomatic and non-pneumonia cases in Beijing. Population was generally susceptible, and with a relatively low fatality rate. The measures to prevent transmission was very successful at early stage, the next steps on the COVID-19 infection should be focused on early isolation of patients and quarantine for close contacts in families and communities in Beijing. Funding: Beijing Municipal Science and Technology Commission and Ministry of Science and Technology.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7102527/

ABSTRACT: Importance: In December 2019, novel coronavirus (2019-nCoV)-infected pneumonia (NCIP) occurred in Wuhan, China. The number of cases has increased rapidly but information on the clinical characteristics of affected patients is limited. Objective(s): To describe the epidemiological and clinical characteristics of NCIP. Design, Setting, and Participant(s): Retrospective, single-center case series of the 138 consecutive hospitalized patients with confirmed NCIP at Zhongnan Hospital of Wuhan University in Wuhan, China, from January 1 to January 28, 2020; final date of follow-up was February 3, 2020. Exposures: Documented NCIP. Main Outcomes and Measures: Epidemiological, demographic, clinical, laboratory, radiological, and treatment data were collected and analyzed. Outcomes of critically ill patients and noncritically ill patients were compared. Presumed hospital-related transmission was suspected if a cluster of health professionals or hospitalized patients in the same wards became infected and a possible source of infection could be tracked. Result(s): Of 138 hospitalized patients with NCIP, the median age was 56 years (interquartile range, 42-68; range, 22-92 years) and 75 (54.3%) were men. Hospital-associated transmission was suspected as the presumed mechanism of infection for affected health professionals (40 [29%]) and hospitalized patients (17 [12.3%]). Common symptoms included fever (136 [98.6%]), fatigue (96 [69.6%]), and dry cough (82 [59.4%]). Lymphopenia (lymphocyte count, 0.8 x 10<sup>9</sup>/L [interquartile range {IQR}, 0.6-1.1]) occurred in 97 patients (70.3%), prolonged prothrombin time (13.0 seconds [IQR, 12.3-13.7]) in 80 patients (58%), and elevated lactate dehydrogenase (261 U/L [IQR, 182-403]) in 55 patients (39.9%). Chest computed tomographic scans showed bilateral patchy shadows or ground glass opacity in the lungs of all patients. Most patients received antiviral therapy (oseltamivir, 124 [89.9%]), and many received antibacterial therapy (moxifloxacin, 89 [64.4%]; ceftiraxone, 34 [24.6%]; azithromycin, 25 [18.1%]) and glucocorticoid therapy (62 [44.9%]). Thirty-six patients (26.1%) were transferred to the intensive care unit (ICU) because of complications, including acute respiratory distress syndrome (22 [61.1%]), arrhythmia (16 [44.4%]), and shock (11 [30.6%]). The median time from first symptom to dyspnea was 5.0 days, to hospital admission was 7.0 days, and to ARDS was 8.0 days. Patients treated in the ICU (n = 36), compared with patients not treated in the ICU (n = 102), were older (median age, 66 years vs 51 years), were more likely to have underlying comorbidities (26 [72.2%] vs 38 [37.3%]), and were more likely to have dyspnea (23 [63.9%] vs 20 [19.6%]), and anorexia (24 [66.7%] vs 31 [30.4%]). Of the 36 cases in the ICU, 4 (11.1%) received high-flow oxygen therapy, 15 (41.7%) received noninvasive ventilation, and 17 (47.2%) received invasive ventilation (4 were switched to extracorporeal membrane oxygenation). As of February 3, 47 patients (34.1%) were discharged and 6 died (overall mortality, 4.3%), but the remaining patients are still hospitalized. Among those discharged alive (n = 47), the median hospital stay was 10 days (IQR, 7.0-14.0). Conclusions and Relevance: In this single-center case series of 138 hospitalized patients with confirmed NCIP in Wuhan, China, presumed hospital-related transmission of 2019-nCoV was suspected in 41% of patients, 26% of patients received ICU care, and mortality was 4.3%. Copyright © 2020 American Medical Association. All rights reserved.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7042881/


ABSTRACT: Objective: To investigate the characteristics and prognostic factors in the elderly patients with COVID-19. Methods: Consecutive cases over 60 years old with COVID-19 in Renmin Hospital of Wuhan University from Jan 1 to Feb 6, 2020 were included. The primary outcomes were death and survival till March 5. Data of demographics, clinical features, comorbidities, laboratory tests and complications were collected and compared for different outcomes. Cox regression was performed for prognostic factors. Results: 339 patients with COVID-19 (aged 71±8 years, 173 females [51%]) were enrolled, including 80 (23.6%) critical, 159 severe (46.9%) and 100 moderate (29.5%) cases. Common comorbidities were hypertension (40.8%), diabetes (16.0%) and cardiovascular disease (15.7%). Common symptoms included fever (92.0%), cough (53.0%), dyspnea (40.8%) and fatigue (39.9%). Lymphopenia was a common laboratory finding (63.2%). Common complications included bacterial infection (42.8%), liver enzyme abnormalities (28.7%) and acute respiratory distress syndrome (21.0%). Till Mar 5, 2020, 91 cases were discharged (26.8%), 183 cases stayed in hospital (54.0%) and 65 cases (19.2%) were dead. Shorter length of stay was found for the dead compared with the survivors (5 (3-8) vs. 28 (26-29), P < 0.001). Symptoms of dyspnea (HR 2.35, P = 0.001), comorbidities including cardiovascular disease (HR 1.86, P = 0.031) and chronic obstructive pulmonary disease (HR 2.24, P = 0.023), and acute respiratory distress syndrome (HR 29.33, P < 0.001) were strong predictors of death. And a high level of lymphocytes was predictive of better outcome (HR 0.10, P < 0.001). Conclusions: High proportion of severe to critical cases and high fatality rate were observed in the elderly COVID-19 patients. Rapid disease progress was noted in the dead with a median survival time of 5 days after admission. Dyspnea, lymphopenia, comorbidities including cardiovascular disease and chronic obstructive pulmonary disease, and acute respiratory distress syndrome were predictive of poor outcome. Close monitoring and timely treatment should be performed for the elderly patients at high risk.

**ABSTRACT:** BACKGROUND: From December 2019 to February 2020, 2019 severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has caused a serious outbreak of coronavirus disease 2019 (COVID-19) in Wuhan, China. Related clinical features are needed.

METHODS: We reviewed 69 patients who were hospitalized in Union hospital in Wuhan between January 16 to January 29, 2020. All patients were confirmed to be infected with SARS-CoV-2 and the final date of follow-up was February 4, 2020.

RESULTS: The median age of 69 enrolled patients was 42.0 years (IQR 35.0–62.0), and 32 patients (46%) were men. The most common symptoms were fever (60[87%]), cough (38[55%]), and fatigue (29[42%]). Most patients received antiviral therapy (66 [98.5%] of 67 patients) and antibiotic therapy (66 [98.5%] of 67 patients). As of February 4, 2020, 18 (26.9%) of 67 patients had been discharged, and five patients had died, with a mortality rate of 7.5%. According to the lowest SpO2 during admission, cases were divided into the SpO2≥90% group (n=55) and the SpO2<90% group (n=14). All 5 deaths occurred in the SpO2<90% group. Compared with SpO2≥90% group, patients of the SpO2<90% group were older, and showed more comorbidities and higher plasma levels of IL6, IL10, lactate dehydrogenase, and c reactive protein. Arbidol treatment showed tendency to improve the discharging rate and decrease the mortality rate.

CONCLUSIONS: COVID-19 appears to show frequent fever, dry cough, and increase of inflammatory cytokines, and induced a mortality rate of 7.5%. Older patients or those with underlying comorbidities are at higher risk of death.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC718452/

ABSTRACT: Background: An ongoing outbreak of pneumonia associated with the severe acute respiratory coronavirus 2 (SARS-CoV-2) started in December, 2019, in Wuhan, China. Information about critically ill patients with SARS-CoV-2 infection is scarce. We aimed to describe the clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia. Method(s): In this single-centered, retrospective, observational study, we enrolled 52 critically ill adult patients with SARS-CoV-2 pneumonia who were admitted to the intensive care unit (ICU) of Wuhan Jin Yin-tan hospital (Wuhan, China) between late December, 2019, and Jan 26, 2020. Demographic data, symptoms, laboratory values, comorbidities, treatments, and clinical outcomes were all collected. Data were compared between survivors and non-survivors. The primary outcome was 28-day mortality, as of Feb 9, 2020. Secondary outcomes included incidence of SARS-CoV-2-related acute respiratory distress syndrome (ARDS) and the proportion of patients requiring mechanical ventilation. Finding(s): Of 710 patients with SARS-CoV-2 pneumonia, 52 critically ill adult patients were included. The mean age of the 52 patients was 59.7 (SD 13.3) years, 35 (67%) were men, 21 (40%) had chronic illness, 51 (98%) had fever. 32 (61.5%) patients had died at 28 days, and the median duration from admission to the intensive care unit (ICU) to death was 7 (IQR 3-11) days for non-survivors. Compared with survivors, non-survivors were older (64.6 years [11.2] vs 51.9 years [12.9]), more likely to develop ARDS (26 [81%] patients vs 9 [45%] patients), and more likely to receive mechanical ventilation (30 [94%] patients vs 7 [35%] patients), either invasively or non-invasively. Most patients had organ function damage, including 35 (67%) with ARDS, 15 (29%) with acute kidney injury, 12 (23%) with cardiac injury, 15 (29%) with liver dysfunction, and one (2%) with pneumothorax. 37 (71%) patients required mechanical ventilation. Hospital-acquired infection occurred in seven (13.5%) patients. Interpretation(s): The mortality of critically ill patients with SARS-CoV-2 pneumonia is considerable. The survival time of the non-survivors is likely to be within 1-2 weeks after ICU admission. Older patients (>65 years) with comorbidities and ARDS are at increased risk of death. The severity of SARS-CoV-2 pneumonia poses great strain on critical care resources in hospitals, especially if they are not adequately staffed or resourced. Funding(s): None. Copyright © 2020 Elsevier Ltd

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7102538/ 


ABSTRACT: Radiologic characteristics of 2019 novel coronavirus (2019-nCoV) infected pneumonia (NCIP) which had not been fully understood are especially important for diagnosing and predicting prognosis. We retrospective studied 27 consecutive patients who were confirmed NCIP, the clinical characteristics and CT image findings were collected, and the association of radiologic findings with mortality of patients was evaluated. 27 patients included 12 men and 15 women, with median age of 60 years (IQR 47-69). 17 patients discharged in recovered condition and 10 patients died in hospital. The median age of mortality group was higher compared to survival group (68 (IQR 63-73) vs 55 (IQR 35-60), P = 0.003). The comorbidity rate in mortality group was significantly higher than in survival group (80% vs 29%, P = 0.018). The predominant CT characteristics consisted of ground glass opacity (67%), bilateral sides involved (86%), both peripheral and central distribution (74%), and lower zone involvement (96%). The median CT score of mortality group was higher compared to survival group (30 (IQR 7-13) vs 12 (IQR 11-43), P = 0.021), with more frequency of consolidation (40% vs 6%, P = 0.047) and air bronchogram (60% vs 12%, P = 0.025). An optimal cutoff value of a CT score of 24.5 had a sensitivity of 85.6% and a specificity of 84.5% for the prediction of mortality. 2019-nCoV was more likely to infect elderly people with chronic comorbidities. CT findings of NCIP were featured by predominant ground glass opacities mixed with consolidations, mainly peripheral or combined peripheral and central distributions, bilateral and lower lung zones being mostly involved. A simple CT scoring method was capable to predict mortality. Copyright © 2020 Public Library of Science. All rights reserved.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7082074/ 


ABSTRACT: Background: In late December 2019, an outbreak of acute respiratory illness, coronavirus disease 2019 (COVID-19), emerged in Wuhan, China. We aimed to study the epidemiology, clinical features and short-term outcomes of patients with
COVID-19 in Wuhan, China. Method(s): We performed a single center, retrospective case series study in 221 patients with laboratory confirmed SARS-CoV-2 pneumonia at a university hospital, including 55 severe patients and 166 non-severe patients, from January 2, 2020 to February 10, 2020. Result(s): Of the 221 patients with COVID-19, the median age was 55.0 years and 48.9% were male and only 8 (3.6%) patients had a history of exposure to the Huanan Seafood Market. Compared to the non-severe pneumonia patients, the median age of the severe patients was significantly older, and they were more likely to have chronic comorbidities. Most common symptoms in severe patients were high fever, anorexia and dyspnea. On admission, 33.0% patients showed leukopenia and 73.8% showed lymphopenia. In addition, the severe patients suffered a higher rate of co-infections with bacteria or fungus and they were more likely to developing complications. As of February 15, 2020, 19.0% patients had been discharged and 5.4% patients died. 80% of severe cases received ICU (intensive care unit) care, and 52.3% of them transferred to the general wards due to relieved symptoms, and the mortality rate of severe patients in ICU was 20.5%. Conclusion(s): Patients with older age, chronic comorbidities, blood leukocyte/lymphocyte count, procalcitonin level, co-infection and severe complications might increase the risk of poor clinical outcomes. Copyright © 2020 Elsevier B.V.

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7194884/


ABSTRACT: Objective: In December 2019, coronavirus disease (COVID-19) emerged in Wuhan. However, the characteristics and risk factors associated with disease severity, unimprovement and mortality are unclear and our objective is to throw some light on these. Method(s): All consecutive patients diagnosed with COVID-19 admitted to the Renmin Hospital of Wuhan University from January 11 to February 6, 2020, were enrolled in this retrospective cohort study. Result(s): A total of 663 COVID-19 patients were included in this study. Among these, 247 (37.3%) had at least one kind of chronic disease; 0.5% of the patients (n = 3) were diagnosed with mild COVID-19, while 37.8% (251/663), 47.5% (315/663), and 14.2% (94/663) were in moderate, severe, and critical conditions, respectively. In our hospital, during follow-up 251 of 663 patients (37.9%) improved and 25 patients died, a mortality rate of 3.77%. Older patients (>60 years old) and those with chronic diseases were prone to have a severe to critical COVID-19 condition, to show unimprovement, and to die (p <0.001, <0.001). Multivariate logistic regression analysis identified being male (OR = 0.486, 95%CI 0.311-0.758; p 0.001), having a severe COVID-19 condition (OR = 0.129, 95%CI 0.082-0.201; p <0.001), expectoration (OR = 1.796, 95%CI 1.062-3.036; p 0.029), muscle ache (OR = 0.309, 95%CI 0.153-0.626; p 0.001), and decreased albumin (OR = 1.929, 95%CI 1.199-3.104; p 0.007) as being associated with unimprovement in COVID-19 patients. Conclusion(s): Male sex, a severe COVID-19 condition, expectoration, muscle ache, and decreased albumin were independent risk factors which influence the improvement of COVID-19 patients. Copyright © 2020 European Society of Clinical Microbiology and Infectious Diseases

URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7159868/


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. Method(s): In this retrospective, multicentre cohort study, we included all adult inpatients (>=18 years old) with laboratory-confirmed COVID-19 from Jinyintan Hospital and Wuhan Pulmonary Hospital (Wuhan, China) who had been discharged or had died by Jan 31, 2020. Demographic, clinical, treatment, and laboratory data, including serial samples for viral RNA detection, were extracted from electronic medical records and compared between survivors and non-survivors. We used univariable and multivariable logistic regression methods to explore the risk factors associated with in-hospital death. Finding(s): 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 mug/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(s): The potential risk factors of older age, high SOFA score, and d-dimer greater than 1 mug/mL could help clinicians to identify patients with poor prognosis at an early stage. Prolonged viral shedding provides the rationale for a strategy of isolation of infected patients and optimal antiviral interventions in the future. Funding(s): Chinese Academy of Medical Sciences Innovation Fund for Medical Sciences; National Science Grant for Distinguished Young Scholars; National Key Research and Development Program of China;

**ABSTRACT:** In December 2019, COVID-19 outbreak in Wuhan, China. The current study aimed to explore the clinical characteristics of COVID-19 complicated by hypertension. In this retrospective, single-center study, we recruited 110 discharged patients with COVID-19 at Wuhan Fourth Hospital in Wuhan, China, from January 25 to February 20, 2020. All study cases were grouped according to whether they had a history of hypertension. Then, a subgroup analysis for all hypertensive patients was carried out based on whether to take ACEI or ARB drugs. The mean age of 110 patients was 57.7 years (range, 25-86 years), of which 60 (54.5%) were male patients. The main underlying diseases included hypertension [36 (32.7%)] and diabetes [11 (10.0%)]. Compared with the non-hypertensive group, the lymphocyte count was significantly lower in the hypertensive group (average value, 0.96 x 10^9/L vs 1.26 x 10^9/L), and analysis of clinical outcomes showed that the crude mortality rate was higher in the hypertensive group [7/36 (19.4%) vs 2/74 (2.7%)]. Patients treated with ACEI or ARB, compared with the control group, were younger (average age, 58.5 years vs 69.2 years), but there was no statistical difference in the crude cure rate [10/15 (66.7%) vs 15/21 (71.4%)] and the crude mortality rate [2/15 (13.3%) vs 5/21 (23.8%)]. In conclusions, the COVID-19 patients with a history of hypertension had a significantly lower lymphocyte count on admission. The elderly and comorbidities such as hypertension may together constitute risk factors for poor prognosis in patients with COVID-19. Taking ACEI or ARB drugs may not change the prognosis of COVID-19 patients with hypertension.

**URL:** [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7232880/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7232880/)


**ABSTRACT:** In the journal, a comprehensive review of COVID-19 was published to summarize the nature of SARS-CoV-2 and the timing of its clinical characteristics. Since the emerging infectious disease emerged in Wuhan, China, it has spread rapidly around the world. According to the latest epidemiological statistics, by March 20, 2020, the number of confirmed cases worldwide has exceeded 240,000, with a fatality rate of 4.1%. The course of COVID-19 illness can progress rapidly, causing acute respiratory distress syndrome, septic shock, metabolic acidosis and blood coagulation dysfunction. Due to a previous lack of in-depth research on the characteristics of the disease, the mortality of severe illness is high. It is very important to analyse the clinical characteristics of COVID-19 in international regions and identify risk factors to reduce the incidence of severe and critical illness in the early stage. In this letter, we present discrepancies of patients with different disease severities and risk factors for severe COVID-19 by comparing and analysing epidemiological and clinical data of 167 confirmed patients in Anhui, China. In the present study, the rate of severely ill patients was as high as 17.9%. Comparisons of demographics and clinical characteristics between 30 severe and 137 non-severe patients are shown in table 1.

**URL:** [https://doi.org/10.1016/j.jinf.2020.04.010](https://doi.org/10.1016/j.jinf.2020.04.010)

**DOI:** 10.1016/j.jinf.2020.04.010

**SEARCH STRATEGIES**

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21 remove duplicates from 20 213

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S1 (MH "Coronavirus Infections+") OR (MH "Coronavirus+") OR (MH "COVID-19") OR (TX ((corona* or corono*) N1 (virus* or viral* or virinae*))) OR (TX (coronavirus* or coronavirus* or coronavirinae* or CoV or HCoV*)) OR (TX ("2019-nCoV" or 2019nCoV or nCoV2019 or "nCoV-2019" or "COVID-19" or COVID19 or "CORVID-19" or CORVID19 or "WN-CoV" or WNCoV or "HCoV-19" or HCoV19 or "2019 novel"*" or Ncov or "n-cov" or "SARS-CoV-2" or "SARS-CoV2-2" or "SARSCoV2" or "SARS-CoV2" or SARSCoV19 or "SARS-Cov19" or "SARS-Cov-19" or Ncovor or Ncorona* or Ncorono* or NcovWuhan* or NcovChina* or NcovChinese* or SARS2 or "SARS-2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus-2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2") OR (TX (respiratory* N2 (symptom* or disease* or illness* or condition*) N10 (Wuhan* or Hubei* or China* or Chinese* or Huanan*)) OR (TX ("seafood market**" or "food market**" or pneumonia*) N10 (Wuhan* or Hubei* or China* or Chinese* or Huanan*)) OR (TX (outbreak* or wildlife* or pandemic* or epidemic*) N1 (Wuhan* or Hubei or China* or Chinese* or Huanan*)) ) OR TX ("severe acute respiratory syndrome**")

S2 TI ((rate# OR ratio# OR numerator# OR denominator# OR percent* OR portion# OR preportion*) N2 (fatal* OR mortalit* OR death# OR deceased OR lethal*)) OR AB ((rate# OR ratio# OR numerator# OR denominator# OR percent* OR portion# OR preportion*) N2 (fatal* OR mortalit* OR death# OR deceased OR lethal*))

S3 S1 AND S2

Limiters - Published Date: 20191201-20201231

Google and Google Scholar
(rate|fraction|proportion)(fatality|death|mortality)(covid-19|SARS-CoV-2|CoV-19)

Search terms used in combination in other resources:
hospitalized patients OR hospital OR ICU OR intensive care OR critical care
covid-19 or SARS-CoV-2
death