

Covid19 A Pandemic of 2020 – A Review

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ABSTRACT

Objective To spread awareness about the various aspects of the pandemic COVID19 such as clinical manifestations, underline causes, available investigation strategies, mode of transmission and possible managements. **Methods** Seventeen articles were retrieved from electronic databases that met the selection criteria with papers discussed.

Results Awareness helps people to cope-up with the difficult situation in terms of reduce stress and follow preventive measures religiously which will ultimately help to control the pandemic to a large extent.

Conclusions Coronavirus disease (COVID-19) is an infectious disease caused by a virus called SARS-COV-2. Adequate information sharing is a key to deal with the situation.

KEYWORDS: covid19, pandemic, 2020

INTRODUCTION

COVID-19 stands for Coronavirus disease 2019, is an infectious disease caused by a virus called Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2),¹ such names have been assigned by the World Health Organization and the International Committee on Taxonomy of Viruses.¹ The disease name suggested as COVID-19 since it was first identified in December 2019 in Wuhan, the capital of China's Hubei province, and then spread globally, resulting in the ongoing 2019–20 pandemic.^{2,3} Common symptoms include fever, cough and shortness of breath⁴ and other symptoms like fatigue, muscle pain, diarrhea, sore throat, loss of smell and abdominal pain.^{4,6} The time from exposure to onset of symptoms is typically around five days, but may range from two to fourteen days.^{4,7} While the majority of cases result in mild symptoms, some progress to viral pneumonia and multi-organ failure.^{2,8} As of 12 April 2020, more than 1.8 million cases⁹ have been reported from 210 countries and territories,⁹ resulting more than 110,000 deaths and more than 412,000 have recovered,⁹ although there may be a possibility of reinfection.

Body of the content:

Other names of the disease¹⁰⁻¹³

- Coronavirus
- COVID
- 2019-nCoV acute respiratory disease
- Novel coronavirus pneumonia
- Wuhan pneumonia

Category of the disease¹⁴

- Contagious diseases

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Incidence¹⁷

- Severity of COVID-19 may varies from mild to severe.
- Mild may appear with few or no symptoms, resembling with other common upper respiratory tract diseases like common cold and typically recover within two weeks.
- Severe or critical diseases may take three to six weeks to recover. Those who died, the time from symptom onset to death range from two to eight weeks.
- Children are susceptible, but likely to have milder symptoms and a lesser chance of severe disease in comparison to adults. Aged 18 years and less showing comparatively lower attack.
- Individuals at highest risk for severe disease and death are people aged over 60 years and with underlying conditions like hypertension, diabetes, cardiovascular disease, chronic respiratory disease and cancer.

Usual onset¹⁴

- 2–14 days and typically 5days from the day of exposure

Causative organism¹⁴

- Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2)

Routes of transmission^{10,16}

- Direct person-to-person or, contact transmission
- Indirect, through airborne and fomites-driven transmission
- Airborne spread has not been reported for COVID-19
- Mainly spread between people via droplets produced during coughing, sneezing, or talking.
- People may also get infected by touching a contaminated surface and then their face.

- The virus can survive on surfaces for up to 72 hours.
- The virus is most contagious during the first three days after onset of symptoms, though spread may be possible before symptoms appear and in later stages of the disease.

Pathophysiology ^{14,15}

- The lungs are the target organs since the virus accesses host cells via the enzyme angiotensin-converting enzyme 2 (ACE2), which is most abundant in the alveolar cells of the lungs.
- The virus uses a special surface glycoprotein called a "spike" (peplomer) to connect to ACE-2 and enter the host cell.
- As the disease progresses, respiratory failure might develop and death may follow.
- Autopsies of people those died of COVID-19 have shown diffuse alveolar damage (DAD), and lymphocyte-containing inflammatory infiltrates within the lung.
- The virus also affects gastrointestinal organs as ACE-2 is abundantly present in the glandular cells of gastric, duodenal and rectal epithelium as well as endothelial cells and enterocytes of the small intestine.
- Most people approximately 80% have mild to moderate disease and recover which includes non-pneumonia.
- 13.8% have severe disease (dyspnea, respiratory frequency ≥ 30 /minute, blood oxygen saturation $\leq 93\%$, PaO₂/FiO₂ ratio < 300 , and/or lung infiltrates $> 50\%$ of the lung field within 24-48 hours)
- 6.1% are critical (respiratory failure, septic shock, and/or multiple organ dysfunction/failure)

Signs & symptoms ¹³

- Fever (87.9%)
- Dry Cough (67.7%)
- Fatigue (38.1%)
- Sputum Production (33.4%)
- Shortness of Breath (18.6%)
- Sore Throat (13.9%)
- Headache (13.6%)
- Myalgia or Arthralgia (14.8%)
- Chills (11.4%)
- Nausea or Vomiting (5.0%)
- Nasal Congestion (4.8%)
- Diarrhea (3.7%)
- Hemoptysis (0.9%)
- Conjunctival Congestion (0.8%).

Diagnostic methods ^{14,16}

- Real-time reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab.
- Chest CT imaging may also be helpful for diagnosis if there is a high suspicion of infection based on symptoms and risk factors but is not recommended for routine screening. This evaluation based on summing up of the acute lung inflammatory lesions involving each lobe, such as score 0 (0%), 1 (1–25%), 2 (26–50%), 3 (51–75%), or 4 (76–100%), respectively. The total severity score (TSS) is the sum of the five lobe scores. The consistency of two observers was evaluated.

Preventive measure ¹⁴

- Frequent hand washing with soap and water for at least 20 to 40 seconds.

- Following social distancing to avoid contact of infected persons. Distancing people, stay at least 6 feet (1.8 m) apart.
- Large groups need to be restricted through closing schools and workplaces, restricting travel and cancelling large public gatherings.
- Practicing good respiratory hygiene and avoiding touching the eyes, nose or mouth with unwashed hands.
- Covering mouth and nose with a tissue when coughing or sneezing and recommends using the inside of the elbow if no tissue is available. and proper hand hygiene after any cough or sneeze, keeping unwashed hands away from the face.
- Use of masks is recommended for those who suspect they have the virus and their caregivers.
- Practicing quarantine by staying at home and avoiding crowded places.

Management ¹⁴

- Currently, there is no vaccine or specific antiviral treatment for COVID-19.
- Management involves treatment of clinical manifestations, supportive care, isolation and experimental measures.
- Supportive care may include fluid administration, oxygen inhalation, and supporting other affected vital organs.
- Psychological support may be needed since, individuals may experience distress from quarantine, travel restrictions, side effects of treatment or fear of the infection itself.
- There are mixed results as of 3 April 2020 as to the effectiveness of hydroxychloroquine as a treatment for COVID-19, with some studies showing little or no improvement.

Complications ¹⁴

- Pneumonia
- Viral sepsis
- Acute respiratory distress syndrome
- Kidney failure
- Cardiac failure

Quarantine ¹⁶

- Different prevention strategies have been implemented by health authorities with the 14-day quarantine being the commonly used. It has recently been observed that some patients rather had mild symptoms such as cough and low-grade fever or even no symptoms and that the incubation period might have been 24 days.
- The recovered cases further need to quarantine at home for at least 2 weeks. However, potential infectivity of these recovered cases was still unclear.
- Strategies to combat the pandemic ¹⁵
- The first stage - Control the source of infection, block the transmission and prevent further spread. Protocols for COVID-19 diagnosis and treatment, surveillance, epidemiological investigation, management of close contacts, and laboratory testing were formulated, and epidemiological investigations conducted. Diagnostic testing kits were developed,
- The second stage - Decrease the intensity of the epidemic and to slow down the increase in cases. The protocols for diagnosis, treatment and epidemic prevention and control are improved; case isolation and

treatment are strengthened. Measures are taken to ensure that all cases are treated, and close contacts are isolated and put under medical observation. Other measures implemented included reduce the movement of people; stop mass gathering activities. Information about the epidemic, prevention and control measures are regularly released. Public health education are strengthened; allocation of medical supplies are coordinated, new hospitals are built, efforts are made to maintain a smooth supply of commodities and their prices to ensure the smooth operation of society.

- The third stage - The third stage of the outbreak focused on reducing clusters of cases, thoroughly controlling the epidemic, and striking a balance between epidemic prevention and control, sustainable economic and social development, the unified command, standardized guidance, and scientific evidence-based policy implementation. Normal social operations are being restored in a stepwise fashion; knowledge about disease prevention is being popularized to improve public health literacy and skills; and a comprehensive program of emergency scientific research is being carried out to develop diagnostics, therapeutics and vaccines, delineate the spectrum of the disease, and identify the source of the virus.
- Other recommendations for the public - Frequent hand washing, always covering mouth and nose when sneezing or coughing, practicing social distancing.

Conclusion:

Coronavirus disease (COVID-19) is a contagious respiratory tract disease caused by SARS-COV-2. The disease causes flu like symptoms such as a cough, fever, and in more severe cases, difficulty breathing. The disease spreads primarily through contact with an infected person when they cough or sneeze. It also spreads when a person touches a surface or object that has the virus on it, then touches their eyes, nose, or mouth. One can protect self by washing hands frequently, avoiding touching face, mouth and nose and avoiding close contact, keeping 1 meter or 3 feet distance from people.¹⁷

Conflict of Interest:

None.

References:

- [1] Coronavirus Disease (COVID-19) – Statistics and Research available at <https://ourworldindata.org/coronavirus> retrved on 4/13/2020
- [2] Hui DS, I Azhar E, Madani TA, Ntoumi F, Kock R, Dar O, et al. (February 2020). "The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health—The latest 2019 novel coronavirus outbreak in Wuhan, China". *Int J Infect Dis.* 91: 264–66. doi:10.1016/j.ijid.2020.01.009. PMID 31953166.
- [3] "WHO Director-General's opening remarks at the media briefing on COVID-19". World Health Organization (WHO) (Press release). 11 March 2020. Archived from the original on 11 March 2020. Retrieved 12 March 2020.
- [4] "Symptoms of Coronavirus". U.S. Centers for Disease Control and Prevention (CDC). 10 February 2020.
- [5] "Q&A on coronaviruses (COVID-19)". World Health Organization (WHO). Archived from the original on 20 January 2020. Retrieved 11 March 2020.
- [6] Hopkins, Claire. "Loss of sense of smell as marker of COVID-19 infection". *Ear, Nose and Throat surgery body of United Kingdom*. Retrieved 28 March 2020.
- [7] Velavan, T. P.; Meyer, C. G. (March 2020). "The COVID-19 epidemic". *Tropical Medicine & International Health.* n/a (n/a): 278–80. doi:10.1111/tmi.13383. PMID 32052514.
- [8] "Q&A on coronaviruses". World Health Organization (WHO). Archived from the original on 20 January 2020. Retrieved 27 January 2020.
- [9] Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)". ArcGIS. Johns Hopkins CSSE. Retrieved 12 April 2020.
- [10] Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, et al. (February 2020). "Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study". *Lancet.* 395 (10223): 507–513. doi:10.1016/S0140-6736(20)30211-7. PMC 7135076. PMID 32007143.
- [11] Han X, Cao Y, Jiang N, Chen Y, Alwalid O, Zhang X, et al. (March 2020). "Novel Coronavirus Pneumonia (COVID-19) Progression Course in 17 Discharged Patients: Comparison of Clinical and Thin-Section CT Features During Recovery". *Clinical Infectious Diseases.* doi:10.1093/cid/ciaa271. PMID 32227091.
- [12] Campbell C (20 January 2020). "The Wuhan Pneumonia Crisis Highlights the Danger in China's Opaque Way of Doing Things". *Time*. Archived from the original on 13 March 2020. Retrieved 13 March 2020.
- [13] Lucey D, Sparrow A (14 January 2020). "China Deserves Some Credit for Its Handling of the Wuhan Pneumonia". *Foreign Policy*. Archived from the original on 15 January 2020. Retrieved 13 March 2020.
- [14] Coronavirus disease 2019 available at https://en.wikipedia.org/wiki/Coronavirus_disease_2019 retrived on 4/13/2020
- [15] Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19) available at <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf> retrived on 4/13/2020
- [16] COVID-19 Scientific Resources available at <https://www.cerahgeneve.ch/resources/covid-19-free-online-scientific-resources/> accessed on 4/13/2020
- [17] Coronavirus disease (COVID-19) available at <https://www.google.com/covid19/> accessed on 4/13/2020