

The Symptoms, Diagnosis, Isolation and Treatment of COVID-19

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ABSTRACT

Coronavirus disease COVID-19 is caused by SARS-COV2 and represents the causative agent of a potentially fatal disease that is of great global public health concern, which causes serious respiratory illness such as pneumonia and lung failure and is most likely originated from zoonotic Coronavirus like SARS-COV which emerged in 2002. The outbreak of the novel Corona virus disease (COVID-19) in China spread all over the world, becoming an emergency of major international concern. Human to human transmission via droplets with incubation time of 2-14 days. Here, we review the current status of epidemiology, diagnosis, quarantine and supportive treatment including antiviral agents, Chloroquine and hydroxyl Chloroquine in this article. Drugs that are specifically efficacious against SARS-COV2 have yet to be established. Chloroquine and Hydroxy Chloroquine have garnered considerable attention for potential treat Coronavirus disease 2019.

Keywords: COVID-19, Diagnosis, Chloroquine, Hydroxy Chloroquine, Quarantine

INTRODUCTION

According to the World Health Organization, the viral epidemic is a serious issue to public health. In the past twenty years, two additional Coronavirus epidemics have occurred: SARS COV and MERS COV. They resulted in approximately 10,800 cases and 1600 deaths and they still cause sporadic cases [1,2].

On February 11, 2020, the WHO Director General, Dr. Tedros Adhanom, announced that the disease caused by new COV was COVID_19. This new virus seems to be very contagious and it has quickly spread globally. Aggressive isolation measures in China and other countries have led to a progressive reduction of cases in the last few months.

COVID-19 (Coronavirus) is developing and evolving rapidly, we work in agility to provide the highest quality of care [3].

Previous studies have indicated that SARS during gestation is linked with a high risk of miscarriage, preterm birth and intrauterine growth restriction. Now, studies in pregnant women with COVID-19 have indicated few maternal and neonatal complication. Importantly, viral respiratory illnesses can easily develop during pregnancy, which mean

pregnancy women more vulnerable to COVID-19 and require prioritized medical care [4,5].

SYMPTOMS

Symptoms of COVID-19

The onset of symptoms is usually with 14 days of exposure. Rang from mild to severe, including fever, cough, and sore throat, shortness of breath, myalgia and abdominal pain in some cases. Any patient with fever or any symptoms of COVID-19 should be referred to the Emergency Department after following the best practices to prevent or slow the spread of the virus. Now, we study some nuances that could play an important role in the spread of coronavirus; it is mainly transmitted among people through respiratory droplets. However, we discovered another mode of transition through vaginal discharge by 27 days when symptoms begin [5].

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At the Emergency Department, we should ensure protecting our staff and make sure that no visitors are allowed in the rooms of the patients. Also, a part of protection process; we should screen the close people of the patients by checking an infrared (non-touch) thermometer.

COVID-19 CAN USUALLY BE CATEGORIZED AS HAVING

- Mild disease (symptomatic with stable vital signs).
- Sever disease (respiration rate $>30/\text{min}$, resting saturated $\text{O}_2 < 93\%$, arterial blood oxygen partial pressure/oxygen concentration $< 300 \text{ mmHg}$).
- Critical disease (shock with organ failure, respiratory failure requiring mechanical ventilation) [5,6].

DIAGNOSIS

Diagnosis of COVID-19 is mainly based on reverse transcription polymerase chain reaction (RT-PCR) this test is routinely employed for the detection of the virus responsible for respiratory illnesses. In the RT-PCR Technique; viral isolates are used as a primary substrate to perform an assay that identifies a specific virus and its gene sequence. A sample taken from throat swabs, urine, saliva, stool or vaginal discharge can be used. If RT-PCR is not available; a serological test could also be used for diagnostic examination. [5,7,8].

There is another diagnosis of COVID-19 based on Computed Tomography (CT) scans which are considered to be more sensitive than RT-PCR; they can be used to confirm a positive RT-PCR test.

Patient with positive COVID-19 should not see any people unless they are negative COVIDs for the protection and safety of your community [9].

One person out of 200 people who are exposed to COVID-19 is a positive individual. In close contact with COVID-19, the percentage of the positive people having the infection is 10%. 15% may require medical care and 5% may seek critical care. The incubation period is 2 to 14 days [10-12].

MANAGEMENT

There is no specific antiviral treatment recommended for COVID-19 and no vaccine is available yet. Therefore, the treatment is symptomatic, and oxygen therapy represents the major treatment intervention for patients who seek critical care. Perhaps, the mechanical ventilation is necessary in cases of respiratory failure; the mechanical ventilation should be with lower tidal volume (4 to 6 ml/kg predicted body weight). Other therapies as systemic corticosteroids for the treatment of pneumonia or acute respiratory distress syndrome are not recommended.

Several approaches have been proposed such as Lopinavir/Tonavir (400/100 mg every 12 h), approved by the Food and Drug Administration (FDA), have been evaluated for antiviral activity against SARs COV and MERs COV. In addition, the human immunodeficiency virus 1 (HIV-1) protease inhibitor was combined with Ritonavir [5].

Managing COVID-19 in pregnancy: Pregnant women with suspected COVID-19 should be isolated and then transferred to a hospital with sufficient health in order to provide appropriate treatment after completing examination. Pharmaceutical care in pregnancy are twice: Daily antiviral treatment with Lopinavir/Ritonavir (400 mg/100 mg) + an interferon (5 million IV in 2 mL of sterile water for injection), Lopinavir/Ritonavir being a pregnancy category C drug (there are no adequate studies in pregnant women), but potential benefits may warrant use of the drug despite potential risks [10,13,14].

We tested a range of several drugs from repurposed FIV treatment to malaria treatment as doctors. Doctors in Syria, China, South Korea, France are now giving the drug of Malaria [Chloroquine and hydroxy chloroquine] with promising result so far. The preliminary studies in primate cells suggested that the drugs of malaria could effectively treat COVID 19 [15].

EPIDEMIOLOGY

In 2005, a study found that Chloroquine could prevent or block the spread of SARS-COV, which means that SARS-COV, is closely related to corona virus [16].

On 17th April, twenty-one clinical patients of COVID-19 were treated with Chloroquine (500 mg every 12 h) and Hydroxy Chloroquine (200 mg every 12 h). However, we still study whether taking hydroxy chloroquine can protect people from infected COVID-19. In France, a number of patients with COVIDs 19 received hydroxyl Chloroquine with Azithromycin.

On the other hand, a small study done in China suggests that the new Coronavirus can persist in the body of the patients after symptoms are clearly up.

The Food and Drug administration currently approved the patients with severe COVID-19 disease to use Remdesivir, which can be compassionate [17].

VACCINES

The structure of SARS COV 2 S protein has been revealed. The majority of the vaccines being developed for Corona virus's target the spike glycoprotein or S protein. Vaccine developing is still a long process, and no vaccines are available at the time of the pandemic outbreak [18,19].

ISOLATION

Classical public health measures, including isolation, quarantine and social distancing can be used to curb the pandemic of respiratory infection. In the COVID-19 pandemic, China issued the largest quarantine in history. All the residents living in mainland China were locked in, and trains, ferries, airports and buses were shut down. The Chinese government scaled up such effort to keep pace with the rapid increase and geographical spread [20,21].

PREVENTION

- Avoid close contact with patients suffering from acute respiratory infection.
- Avoid contact with farm or wild animals.
- Frequently, follow hand washing, avoiding infected individuals, crowded places and public gatherings.
- Check your temperature regularly and immediately inform the doctor.
- Keep up to date with the last COVID_19 information and guideline from WHO.
- Take preventive measures, especially in pregnant women.
- Focus on symptomatic treatment, as there is no specific treatment for COVID_19 yet.
- Provide prioritized care for pregnant women [18, 22].

REFERENCES

1. Babymed (2019) 2019-nCoV COVID-19 and pregnancy. Available online at : <https://www.babymed.com/infections/coronavirus-ncov-COVID-19-and-pregnancy>. Accessed 9 Mar 2020
2. Lu R, Zhao X, Li J, Niu P, Yang B, et al. (2020) Genomic characterization and epidemiology of 2019 novel coronavirus : Implications for virus origins and receptor binding. *Lancet* 395 : 565-574.
3. Top 10 countries outside China with highest number of coronavirus cases. Available online at : <https://www.forbes.com/sites/kenrapoza/2020/03/05/top-10-countries-outside-china-with-highest-number-of-coronavirus-cases/#10ce66c0661b>
4. Wong SF, Chow KM, Leung TN, Ng WF, Ng TK, et al. (2020) Pregnancy and perinatal outcomes of women with severe acute respiratory syndrome. *Am J Obstet Gynecol* 191 : 292-297.
5. Zhu H, Wang L, Fang C, Peng S, Zhang L, et al. (2020) Clinical analysis of 10 neonates born to mothers with 2019-nCoV pneumonia. *Transl Pediatr* 9: 51-60.
6. Liang H, Acharya G (2020) Novel corona virus disease (COVID-19) in pregnancy : What clinical recommendations to follow ? *Acta Obstet Gynecol Scand* 99 : 439-442.
7. Centers for Disease Control and Prevention (2019) Coronavirus disease 2019 (COVID-19). Accessed on : March 14, 2020. Available online at : <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>
8. Corman VM, Landt O, Kaiser M, Molenkamp R, Meijer A, et al. (2020) Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR. *Euro Surveill* 25 : 2000045.
9. Emery SL, Erdman DD, Bowen MD, Newton BR, Winchell JM, et al. (2004) Real-time reverse transcription-polymerase chain reaction assay for SARS-associated coronavirus. *Emerg Infect Dis* 10 : 311-316.
10. Ai T, Yang Z, Hou H, Zhan C, Chen C, et al. (2020) Correlation of chest CT and RT-PCR testing in coronavirus disease 2019 (COVID-19) in China : A report of 1014 cases. *Radiology*.
11. Li Q, Guan X, Wu P, Wang X, Zhou L, et al. (2020) Early transmission dynamics in Wuhan, China, of novel Coronavirus-infected pneumonia. *N Engl J Med* 382 : 1199-1207.
12. Backer JA, Klinkenberg D, Wallinga J (2020) Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travellers from Wuhan, China, 20-28 January 2020. *Euro Surveill* 25 : 2000062.
13. Jiang X, Rayner S, Luo MH (2020) Does SARS-CoV-2 has a longer incubation period than SARS and MERS ? *J Med Virol* 92 : 476-478.
14. Gao J, Tian Z, Yang X (2020) Breakthrough : Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies. *Biosci Trends* 14 : 72-73.
15. Expert consensus on chloroquine phosphate for the treatment of novel coronavirus pneumonia. *Zhonghua Jie He He Hu Xi Za Zhi* 43 : 185-188.
16. Colson P, Rolain JM, Lagier JC, Brouqui P, Raoult D (2020) Chloroquine and hydroxychloroquine as available weapons to fight COVID-19. *Int J Antimicrob Agents* 55 : 105932.
17. Vincent MJ, Bergeron E, Benjannet S, Erickson BR, Rollin PE, et al. (2005) Chloroquine is a potent inhibitor of SARS coronavirus infection and spread. *Virology* 332 : 69.
18. Omer S, Ali S, Babar ZD (2020) Preventive measures and management of COVID-19 in pregnancy. *Drugs Ther Perspect* 36 : 246-249.

19. Arabi YM, Mandourah Y, Hameed FA, Sindi AA, Almekhlafi GA, et al. (2018) Corticosteroid therapy for critically ill patients with Middle East Respiratory Syndrome. *Am J Respir Crit Care Med* 197 : 757-767.
20. Du L, He Y, Zhou Y, Liu S, Zheng BJ, et al. (2009) The spike protein of SARS-CoV: A target for vaccine and therapeutic development. *Nat Rev Microbiol* 7 : 226-236.
21. Smith AW, Freedman DO (2020) Isolation, quarantine, social distancing and community containment: Pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *J Travel Med* 27 : taaa020.
22. Zhong NS, Zeng GQ (2008) Pandemic planning in China : Applying lessons from severe acute respiratory syndrome. *Respirology* 13 : S33-S35.