Journal of
Biological Sciences

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Mini Review
Practical Measures to Prevent COVID-19: A Mini-Review

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Abstract

In view of the global COVID-19 pandemic, this study focuses on the most up-to-date epidemiology, transmission, clinical manifestations, effective management, prevention and maintaining social distancing worldwide. The current outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19 disease was first reported from Wuhan, China, in December, 2019. Till now this pandemic had spread to 209 countries and territories around the world and 2 international conveyances with 1,455,519 confirmed cases, including 83,664 deaths, as of April 08, 2020, so the World Health Organization declared it as a Public Health Emergency of worldwide (https://www.worldometers.info/coronavirus/). The main clinical manifestations are included fever, coughing, sore throat, fatigue, headache, diarrhea, hemoptysis, trouble breathing, blue lips or face, persistent pain or pressure in the chest, confusion and excessive drowsiness. Preventive measures such as; masks, frequent hand washing, staying at home, avoid public contact and quarantines are being recommended for reducing the transmission. To date, no specific antiviral treatment is proven yet. The countries with a high risk of infection, they need proper awareness and management for good protection.

Citation: Mehmet Ozaslan, Muhamad Safdar, I. Halil Kilic, Rozhgar A. Khailany, 2020. Practical measures to prevent COVID-19: A Mini-Review. J. Biol. Sci., 20: 100-102.

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Coronavirus (COVID-19) is an enveloped RNA virus that is diversely found in humans and wildlife. A total of six species have been identified to cause disease in humans. This pandemic had spread to 209 countries and 1,455,519 are confirmed cases, which are including 83,664 deaths to date. It is about 3.4% worldwide. Similarly, Middle East respiratory syndrome coronavirus (MERS-CoV) had become a worldwide health concern. MERS-CoV originally reported in 2012[1]. It has affected more than 2000 people in 27 countries and 4 sub-continents in the Middle East. While the epidemic of SARS, affected 26 countries and resulted in more than 8000 cases in 2003[1]. Since then, a small number of cases have occurred as a result of laboratory accidents or possibly, through animal-to-human transmission (Guangdong, China)[1].

Coronaviruses cause illness in people and it can circulate among mammals and birds. Rarely animal coronaviruses can spread to human and then the human can spread to other humans. SARS-CoV-2 was first identified in Wuhan city, Hubei province, China, in December, 2019. Since then, it has spread to 209 countries all over the world when WHO declaring it a pandemic. The case fatality rate is approximately 2.3% based on initial information[2]. It is spherical to pleomorphic enveloped particles. Its envelope is studded in glycoproteins associated with nucleoprotein. The virus enters into the host cell and its genome is translated and transcribed. The translation is usually done by airborne droplets to the nasal cavity. Virus divides into the epithelium cells and causes total inflammation.

To date, no specific antiviral treatment is proven effective, hence, infected people initially rely on symptomatic treatments that showed encouraging profile for blocking the new coronavirus in early clinical trials, but preventive measures are the best treatment at this stage. This review aimed to focus the epidemiology, infection transmission, clinical characteristics, prevention and management of the SARS-CoV-2, so that it can help readers to have the latest understanding and practical measures of COVID-19.

EPIDEMIOLOGY

On 31 December, 2019, the WHO was informed of a cluster of cases of pneumonia of unknown cause detected in Wuhan, China. On 12 January, 2020, it was announced that a novel coronavirus had been identified in samples obtained from these cases and that initial analysis of virus genetic sequences suggested that this was the cause of the outbreak. As of 8 April, 2020, more than 1,467,471 cases have been diagnosed globally, with over 85,382 fatalities (https://www.worldometers.info/coronavirus/).

TRANSMISSION

The main danger or source from human to human is direct contact or infectious respiratory droplets. According to the currently available evidence, transmission through smaller droplet nuclei (airborne transmission) that propagate through the air at distances longer than 1 m is limited to aerosol-generating procedures during clinical care of COVID-19 patients[3,4].

CLINICAL SYMPTOMS

The clinical manifestations which are seen till now are fever, coughing, sore throat, fatigue, headache, diarrhea, trouble breathing, blue lips or face, persistent pain or pressure in the chest, confusion and excessive drowsiness has been observed in a few cases. SARS-CoV-2 infection is more common in aged people between 60-80 years. These people are at high risk of primary infection with death rates, people from 20-59 years are at high risk of secondary infection and people are at least risk at the age of less than 20 years. Additionally, people with the weak immune system are the most prone to COVID-19[5-7].

PREVENTIVE MEASURES

WHO continues to recommend that everyone performs hand hygiene frequently, follows respiratory etiquette recommendations and regularly cleans and disinfects surfaces. Furthermore, people should take personal preventive equipment like gloves, gowns, masks and tissues (for sneezing and cough). In the severe condition, respirator (N95) is used along with disposal gowns, surgical gloves, goggles or face shields and wearing an isolated dress[6-8].

CONCLUSION

COVID-19 is a deadly fatal and is transmitted worldwide. It caused diseases in people on a large scale. People must have awareness about its signs and symptoms mainly in travelers. They must report to health care centers about the signs and symptoms if they observe. Thus, proper measures should be taken to avoid the spread of infection and treat properly. The health officials should establish awareness programs,

implement effective preventive policies and better hygiene setup, which is necessary for the eradication of the COVID-19.

SIGNIFICANCE STATEMENT

COVID-19 is a new strain of corona virus that had previously not been identified in humans. It first emerged in Wuhan, China, in December, 2019 and has since been declared as; an outbreak by WHO. In children and young people, the disease is not fatal. Older people or patients who already have diseases such as diabetes or heart problems may be vulnerable to becoming severely ill because of this virus. This study will help the researchers and public to uncover the critical areas of this disease that were not known to them. Thus, a new theory on COVID-19 epidemiology and management may be arrived at.

ACKNOWLEDGMENTS

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