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Dangerous Global Outbreak: Transmission, Prevention and Control of COVID-19

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Abstract: ***Coronaviruses (CoVs), a large family of ss-RNA viruses, can infect animals and also humans, causing respiratory, gastrointestinal and other effects. Globally there is a outbreak of the Covid-19 which is previously called 2019-nCoV originated from Wuhan, China. The symptoms of COVID-19 infection appear after an incubation period of approximately 5.2 days. This period is dependent on the age of the patient and status of the patient's immune system. The WHO also issued detailed guidelines on the use of face masks in the community, during care at home, and in the health care settings of COVID-19. Proper use and disposal of masks is important to avoid any increase in risk of transmission.***

Keywords: COVID-19, ss-RNA, Global outbreak

1. Introduction

Coronaviruses (CoVs), a large family of ss-RNA viruses, can infect animals and also humans, causing respiratory, gastrointestinal, hepatic and neurological diseases [1]. Globally there is an outbreak of the COVID-19 which is previously called 2019 – nCoV originated in china. SARS – CoV – 2 is a betacoronavirus that belong to the family Coronoviradae and the order Nidoviradae [2]. Severe acute respiratory syndrome (SARS-CoV) and Middle East respiratory syndrome (MERS-CoV) might cause fatal illness [3]. SARS-CoV 2 is the seventh member of the Coronavirus that infects humans [4]. As of now, total numbers of worldwide infected humans with corona virus are 3,229,966 with total deaths 228,376 while in India total no. of active cases are 23651, those who recovered are 8,325 and 1,074 death as per government. State with more numbers of cases is Maharashtra, Gujarat, Delhi and Madhya Pradesh respectively till 30th April, 2020. Wild animals and bats are considered as the natural reservoir hosts and play a crucial role in transmitting various viruses, including Ebola, Nipah, Coronavirus and others [5, 6]. SARS-CoV-2 is the seventh member of the family Coronaviruses, which is the beta-CoV with over 70% similarity in genetic sequence to SARS-nCoV [7]. Health officials have identified evidence of transmission along a chain of 4 "generations" (a person who originally contracted the virus from a nonhuman source infected someone else, who infected another individual, who then infected another individual), suggesting sustained human-to-human transmission [8, 9]. Respiratory droplet transmission is the main route of transmission, and it can also be transmitted through aerial droplets and contact [10].

2. Materials and methods

This review was conducted following the framework by meta-analysis with research objectives, searching and identification of relevant articles and data from various resources. Literature for this review article was identified on PubMed.

Symptoms

The symptoms of COVID-19 infection appear after an incubation period of approximately 5.2 days [11]. The period from the onset of COVID-19 symptoms to death ranged from 6 to 41 days with a median of 14 days [12]. This period is dependent on the age of the patient and status of the patient's immune system. It was shorter among patients> 70-years old compared with those under the age of 70 [12]. The most common symptoms at onset of COVID-19 illness are fever, cough, and fatigue, while other symptoms patients have Aches and pains, runny nose, sore throat, shortness of breath and diarrhoea shown in Figure 1. On 30th January 2020, the WHO declared the Chinese outbreak of COVID-19 to be a Public Health Emergency of International Concern posing a high risk to countries with vulnerable health systems. The emergency committee have stated that the spread of COVID-19 may be interrupted by early detection, isolation, prompt treatment, and the implementation of a robust system to trace contacts [13].

Transmission of virus

Current knowledge is largely derived from similar Coronaviruses, which are transmitted from human-to-human through respiratory fomites [14]. Infection is acquired either by inhalation of these droplets or touching surfaces contaminated by them and then touching the nose, mouth and eyes. The virus is also present in the stool and contamination of the water supply and subsequent transmission via aerosolization/feco-oral route is also hypothesized [15]

Prevention and control of COVID-19

WHO and US Centres for Disease Control and Prevention (CDC) have issued advice on Safety procedures and guidelines to prevent spread of COVID-19. For the general population, at this moment there is no vaccine preventing COVID-19. The best prevention is to avoid being exposed to the virus [16]. Air borne precautions and other protective measures have been discussed and proposed for prevention. Infection preventive and control (IPC) measures that may reduce the risk of exposure include the following: use of face masks; covering coughs and sneezes with tissues that are then safely disposed of (or, if no tissues are available, use a flexed elbow to cover the cough or sneeze); regular hand washing with soap or disinfection with hand sanitizer containing at least 60% alcohol (if soap and water are not available); avoidance of contact with infected people and

maintaining an appropriate distance as much as possible; and refraining from touching eyes, nose, and mouth with unwashed hands [17]. The WHO also issued detailed guidelines on the use of face masks in the community, during care at home, and in the health care settings of COVID-19. Proper use and disposal of masks is important to avoid any increase in risk of transmission [18]. In addition to scientific knowledge on ways to handle the COVID-19 outbreak, the guideline also suggests ways to eliminate panic among the general population [19].

3. Conclusions and Discussions

Coronaviruses, which is the beta-CoV with over 70% similarities in genetic sequence to SARS-nCoV. SARS-CoV 2 is the seventh member of the Coronavirus that infects humans. Total numbers of worldwide infected humans with corona virus are 3,229,966 with total deaths 228,376 while in India total no. of active cases are 23651, those who recovered are 8,325 and 1,074 death as per government. State with more numbers of cases is Maharashtra, Gujarat, Delhi and Madhya Pradesh respectively till 30th April, 2020. Human to Human transmission is accepted for COVID-19. It is really a dangerous outbreak which is claiming so many lives globally. Various bodies such as WHO and different NGOs are coming forward to help affected people all around the world. It is our duty to accept all guidelines for safety which were released by World Health Organisation and pay respect to all the healthcare personnel.

Conflict of interest

None of them

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