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Short Communication

An Update on Coronaviruses

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Coronaviruses (CoV) were first time discovered in the 1960s [1]. Coronaviruses are notorious for having lethal viral strains that trigger potentially tedious diseases in mammals (bats, camels, dogs, mice, cats and masked palm civets) as well as in birds [2,3]. Coronaviruses have a positive-sense, single-strand RNA genome (26 to 32 kilobases) [4]. Most of the coronaviruses cause serious respiratory tract infections and common symptoms involve fever, respiratory symptoms, and shortness of breath, cough and breathing difficulties. However, infection can cause severe acute respiratory syndrome, pneumonia, kidney flop and even death.

The first member of coronavirus was infectious bronchitis virus found in chickens and two viruses from the sample of human patients having common cold were human coronavirus 229E and human coronavirus OC43 [5]. Additionally, some other members of this family have been identified, such as SARS-CoV (severe acute respiratory syndrome) in 2003, HCoV NL63 (human coronavirus NL63) in 2004, HKU1 (human coronavirus U1) in 2005, MERS-CoV (Middle East respiratory syndrome) in 2012, and novel coronavirus found in 2019-20 is 2019-nCoV; most of these have been involved in serious respiratory tract infections.

Furthermore, in November 2002, SARS coronavirus arose in Guangdong (southern China) [6] that caused greater than 8000 human infections and roughly 774 deceases in 37 countries in 2002-03 [7]. However, MERS coronavirus was first identified in Saudi Arabia in 2012 [8] was accountable for 2494 cases of human infections and approximately 850 deaths since September 2012 [9].

Recently, since December 8, 2019, numerous cases of pneumonia of mysterious etiology have been identified in Wuhan, Hubei province, China [10,11]. Among them, most patients worked at or resided nearby the local Huanan seafood wholesale market where a large number of animals such as rabbits and birds were on sale before the epidemic. At initial stages of this pneumonia, acute respiratory infection symptoms arose, however, in certain patients speedily developing acute respiratory distress syndrome (ARDS), critical respiratory failure and several additional serious problems and eventually died. Additionally, On 7 January 2020, a new coronavirus was recognized by the Chinese CDC (Center for Disease Control and Prevention) by the throat swab sample of a patient and that was consequently named 2019-nCoV by WHO (world health organization) [12]. Tentatively named 2019-nCoV was identified with use of next-generation sequencing. Currently, evidence about the epidemiology and scientific characteristics of pneumonia triggered by 2019-nCoV is insufficient [11] however current evidence illustrates 27 (66%) of 41 initially infected patients had direct exposure to Huanan seafood market [13].

Consequently, public health administrators must investigate whether other coronaviruses exist where 2019-nCoV is probably to have initiated so as to prevent the epidemics in future, specifically if infections are occupational hazards. Scientists from the Saudi Arabia confirmed that MERS-CoV has ability to transmit from human-to-human. Like MERS-CoV, 2019-nCoV is also able to transmit from human-to-human, as Shenzhen-based family who visited infected family members in Wuhan and later developed the symptoms of acute respiratory disease syndrome, including fever shortness of breath, diarrhea and weakness [14]. The basic reproduction number of 2019-nCoV is evolving rapidly, with approximates in the mid-January of each case infecting 2.6 other people (improbability range 1.5-3.5) [15].

Till, 9 February 2020, there have been 814 confirmed deaths and more than 37,590 confirmed cases in the coronavirus pneumonia epidemic across 33 Chinese provinces [16]. In addition, 2019-nCoV has now been reported in different countries such as in Japan (96 cases), Singapore (40 cases), Thailand (32 cases), South Korea (27 cases), Hong Kong (26 cases), Taiwan (18 cases), Malaysia (17 cases), Australia (15 cases), Germany (14 cases) and the USA (12 cases) etc. Infections in family clusters and medical workers were also pointed out and human-to-human transmission has been established [14].

Unfortunately, there are no vaccines or antiviral drugs that are approved till now for prevention or treatment. Stopping the disease will be best achieved by prevention at the source. Likewise, precautions must be taken to avoid infection spread such as steady hand washing, covering mouth and nose once coughing and sneezing, cook meat and eggs properly and avoid close contact with patient having signs of respiratory illness like coughing and sneezing etc.

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