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Novel Corona-virus Transmission and Prevention

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Abstract

The novel coronavirus 2019-nCoV has been recognized as a highly pathogenic virus that infects the human respiratory tract and has high morbidity and mortality. The 2019-nCoV is a huge burden on health-care facilities, causing approximately 2.1% mortality so far.

Worldwide countries are at risk of developing respiratory pneumonia due to this Corona Virus from China. Hospitals in most regions of China reporting new cases of disease every day, the disease is fast spread among human, due to the assessment of transmission methods still not totally clear, this research review will evaluate the possible transmission method of novel coronavirus considering the following points: (i) improving preparedness with enhanced surveillance in particular regions; and (ii) targeting certain sentinel groups for surveillance in hot spots.

Keywords: Wuhan virus; Respiratory pneumonia; Coronavirus transmission

Introduction

Republic people of China reported the first case of new Corona Virus 2019-nCoV in December, 2019. The numbers of infected people still raise everyday up to date and no effective method of treatment or vaccine for this disease has been yet invented due to limit information on web and also limited published data concern this virus.

As clinically reported, majority of infected patients with 2019-nCoV present with signs and symptoms of lower respiratory infection which include (high grade fever, headache, cough and dyspnea). The former are just the early symptoms of the disease, but later may develop sever complication such respiratory failure and multiple organ dysfunction syndrome (MODS) and the end stage is death.

Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae and the order Nidovirales and broadly distributed in humans and other mammals [1]. Cases arise from unknown sources in the community and from within hospitals in the Chinese regions and other limited worldwide that have cared for laboratory-proven cases. Surveillance systems in parts of the world outside the China remain deliberately inactive. Deaths, sick persons who recover, and asymptomatic carriers continue to be found.

It is necessary to learn about the source of infection and transmission mechanism of Wuhan pneumonia. The most probable source of Middle East respiratory syndrome coronavirus (MERS-CoV) was bats [2], and Wuhan pneumonia virus is also related to bats as well as sea food contact, however, this transmission occurs from bats to human and then human to human transmission is reported if with close contact about 6 feet without having protective equipment.

Interestingly, unlike the SARS and MERS, novel coronavirus 2019-nCoV is transmitting from human to human during the incubation period even the sign and symptoms has not yet occurred on the infected individual patient [3].

How will the situation evolve? Will the current regions of geographically limited transmission persist indefinitely in China? Will the contiguous virus crosses the borders and spread far and wide due to neither definite treatment nor vaccine? Or spread immediately or after delay? [4].

Prevention and Treatment

Preparedness to face the new corona virus impendence in China or other world countries is depending on their experience on the management of SARS outbreak in 2003 [5,6].

Prevention can be first start in the main city and neighborhood cities across the China and also a look should be taken at all immigrants who have just come back from endemic area after middle of last December this include isolation for (10-14) days which the incubation period of virus until proven not carry the disease, and not the last increase

number of experienced health care provider especially those who has experience during SARS and MERS outbreak.

The available data for disease treatment in china is treating the symptoms with antipyretic, antiviral oseltamivir with/without amoxicillin if body temperature lower than 37 °C and CRP less than 10 mg/L and high temperature above 37.3 and CT proven is viral pneumonia administration of moxifloxacin 0.4 or levofloxacin 0.5 QID is the first strategy or ceftriaxone plus azithromycin is second strategy in both scenario high volume of oxygen is given.

Risk groups worth attention for surveillance purposes

Health-care workers [7] are a high risk group to acquire 2019-nCoV as it has been reported on Chinese media three healthcare doctors had been infected with the corona virus. Ten studies that addressed Middle East respiratory syndrome corona virus (MERS-CoV) found that, among those infected, 24.4% (90/369) were health-care workers [8].

The role of the asymptomatic health-care workers in the incubation period and of minimally sick health-care workers who continue to offer clinical services thus propagating the disease transmission have also been documented. In addition, travelling health-care workers, irrespective of whether they are symptomatic can be selected for virological testing.

Elder people of age of forty years to sixty years are at great risk of being infected with Wuhan pneumonia most due to their immune system weaker than those who are during ages of twenties or thirties.

Strategy for regions out of hotspot

What is going on with Wuhan pneumonia or (2019-nCoV) so far? This question still need more to be answered since the disease is in early outbreak, and virological test should be readily available but as virological testing is not readily available in less developed countries as reported by WHO, but they might use serological methods. Even with the limits of

serological tests, results from multiple tests may yield important information [9].

Conclusion

The Wuhan coronavirus is a dangerous virus the affect human and easily transmits from person to person either by respiratory droplet or touch; in this paper we discussed the coronavirus, ways of transmission and current management protocol and prevention. The virus is still in the early stage and still under study and we recommend more study on transmission methods and development of vaccination.

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