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A BRIEF REVIEW ON COVID-19 PANDEMIC

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ABSTRACT

Corona virus 2019 (COVID-19) syndrome was caused by novel severe acute respiratory syndrome coronavirus- 2 (SARS- CoV-2) which is first found in wuhan, province hubei, china, has spread to many other countries. First case of covid-19 was declared on 31st December 2019 in china. The syndrome is transmitted by inhalation or contact with previously affected person. There have been globally around 6,416,828 reported cases of coronavirus disease and 382,867 reported death to 4 June 2020. In this literature review, history, causative agent, meteorological study, diagnosis, treatment and management of disease are all reviewed.

KEYWORDS: COVID-19, SARS-CoV-2, China.

HISTORY

China health authority alerted the world health organisation several cases of Pneumonia of unknown aetiology in Wuhan city, Hubei province, in central china on 31 December 2019.[1,2] On January, novel coronavirus named as 2019 nCoV by WHO. The syndrome was diagnosed by patient's throat swab sample. This pathogen was latter remained as severe acute respiratory syndrome Coronavirus 2 (SARS-2 CoV-2), and later this disease was named coronavirus disease 2019 (COVID-19) by WHO. (18) This disease has high mortality rate as per information available in public report. The first people with COVID 19 had links to an animal and seafood market. This fact suggested that animal initially transmitted the virus to human however, people with a more recent diagnosis had no connections with or exposure to the market, confirming that humans can pass the viruses to each other. (26,27,31SS) RNA viruses ranging from 60 nm to 140 nm in diameter. Under the electronic microscope surface giving crown like appearance hence the name as corona virus. Four corona viruses HKU1, NL63,229E and OC43 found in humans and generally causes mild respiratory disease.[4,5,6]

METEOROLOGICAL STUDY

In meteorological study we are discuss about temperature and humidity. Meteorological study is crucial and controversial for the COVID 19. Due to cold environment of European countries the spread of COVID 19 is high. As compared to other countries European countries have number of high cases of COVID 19. Temperature and humidity both were negatively related to the daily new cases and daily new death. To analyse the effect of meteorological parameters on COVID 19 various methods have been used. Data collection, calculation of relative humidity, control variables, statistical methods and sensitivity analysis. However active measures must be taken to control the source of infection, block transmission and prevent further spread of COVID 19.[4,23]

DIAGNOSIS

Different of diagnosis criteria for suspected cases and confirmed cases. In early stage of disease condition there is decrease total white blood cell count and a decrease in lymphocyte count. The cases are divided into severe cases, mild cases, ordinary cases and critical cases. In suspected cases to examine, "Common respiratory pathogens" rapid antigen detection, multiple PCR nucleic acid test and other method should be adopted. The FDA approved two types of test for diagnosing.[1,2,13]

Molecular test – This test detects genetic material of the virus using lab technique called polymerase chain reaction also called as PCR test, a health care worker collect fluid from a nasal or throat swab or from saliva. Results may be available in minute if analysed on site or one to two days if sent to an outsider lab. Molecular test is considered very accurate when properly performed by healthcare professional, but the rapid test appears to miss some cases.[2]

Antigen test- These newer COVID 19 tests detects certain proteins that are part of the virus. Using a nasal or throat swab to get a fluid sample, antigen test can produce results in minute. Because this test is faster and less expensive than molecular test is, some experts consider antigen test more practical to use for large number of people. A positive antigen test result is considered very accurate, but there as an increases chance of false negative results – Meaning it's possible to be infected with the virus but have negative antigen test results. So, antigen test isn't as sensitive as molecular test are. Depending on the situation, the doctor may recommend a molecular test to confirm a negative antigen test result.

Nucleic acid detection test – At present nucleic acid detection technique like reverse transcription polymerase chain reaction (RT-PCR) are considered as an effective method for confirming the diagnosis of COVID 19. Nucleic acid of SARS-CoV-2 can be detected from the sample like bronchoalveolar lavage fluid (sputum nasal swab, fibre bronchoscope brush biopsy, blood, pharyngeal swab, are tested.

A swab test- The lab will take a special cotton swab and sample the inside of the throat or nose.

A nasal aspartate test- The lab will inject a saline solution into your nose, then remove the sample with gentle suction.

A tracheal aspartate – A thin, light tube called a bronchoscope goes into your lungs, where sample will be collected.[20]

A sputum test – Sputum is variation of mucus from your lungs that can be coughed out or sampled from the nose with a swab.[20]

TREATMENT

At this time, there are no specific vaccine or treatment for COVID 19. However, there are many ongoing clinical trials evaluating potential treatment.[1,13,15,16]

Treatment according to confirm and suspected cases – In confirmed cases they are quarantined or isolated in hospital under the observation of physician. Suspected cases are strictly home quarantine or institutional quarantined for 14 days.

Antiviral treatment – In antiviral treatment no effective treatment is used. There is some antiviral drug like Chloroquine phosphate (500 mg twice/day), Arbidol (200 mg for adult, 2-3 times/day). The combination of ribavirin and interferon or lopinavir/ritonavir are recommended. Lopinavir or ritonavir (12 mg, twice daily for one to two weeks). Ribavirin (Maximum 500 mg every time, 2-3 times daily for children). This recommended antiviral drugs should not be used more than 10 days. Relative drug treatment should stop if undesirable side effect occurs.

Convalescent plasma therapy – This treatment is recommended for severe rapidly developing and critical cases. It involves transfusing certain component from the blood of

people who have recovered from corona virus attack into people who are very sick with the corona virus are at high risk. In tails giving patients a transfusion with plasma or serum from those who have developed antibodies to a virus or bacteria. This process grants the patient some passive immunity convalescent blood is an option if there are no medicines or vaccines to treat an infectious disease. According to WHO, use of convalescent plasma can be a potentially useful treatment for COVID 19. Potential risk of therapy remains unknown. USFDA rules say suitable donors are those who infection begun 28 days prior. A study from Wuhan published in march showed that 10 adult who were severely ill with COVID 19 tolerated the transfusion well and started developing antibodies that helped reduce the viral load within 7 days.[2,28]

PRECAUTION– By taking some simple precautions you can reduce chances of spreading COVID 19 pandemic.[15,21]

Regularly and thoroughly clean your hand with an alcohol-based soap and water, because washing your hand with soap and water kill viruses that may be on your hand.

Maintain at least 1 meter or 3 feet distance between your face and others, because when some on cough, sneezes or speak they spray small liquid droplet from there nose or mouth which may contain virus.[17]

Avoid going to crowded places, because in such places chances of spreading of COVID 19 virus is more and the maintain the social distancing is very difficult.

Avoid touching eyes, nose and mouth, because this virus remains on the surface for 2-14 hrs therefore this virus can enter your body and infect you.

If you feel unwell then stay at home, avoid contact with people who are seek.

Make sure you and people around you follow good respiratory huigene. That means covering your mouth and nose with mask.

If you show symptoms like cough, headache, mild fever, then stay home and self-isolate, until you recover.

If you have a symptom such as fever, cough, and difficulty in breathing seek medical attention but inform your local health authority by telephone.

Check up to date latest information from trusted sources, WHO or local and national health authority.

CONCLUSION

Globally COVID–19 pandemic is headache of all health organisation in world. There has been recently updated information about COVID 19, how respiratory track infected and causes disease, and pathology of pandemic. Temperature and humidity both were negatively related to COVID 19 pandemic.

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