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A REVIEW ON CORONA VIRUS DISEASE-2019 (COVID-19)

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ABSTRACT

The China Health Authority alerted the World Health Organization (WHO) to several cases of pneumonia of unknown aetiology in Wuhan City in Hubei Province in central China On December 31, 2019. Since December 8, 2019, the cases had been reported, and many patients worked at or lived around the local Human Seafood Wholesale Market although other early cases had no exposure to this market. So far, on January 7, a novel Coronavirus was identified from the throat swab sample of a patient. This novel virus originally abbreviated as 2019-nCoV by WHO. By the Coronavirus Study Group, this pathogen was later renamed as severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) and by the WHO, the disease was named Coronavirus disease 2019 (COVID-19).

KEYWORDS

COVID-19, Epidemiology, Sign and Symptoms.

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INTRODUCTION

According to world health organisation (WHO), Coronaviruses make up a large family of viruses that can infect birds and mammals, including humans[1]. Also these viruses have been responsible for several outbreaks around the world, including the severe acute respiratory syndrome (SARS) pandemic of 2002-2003 and the Middle East respiratory syndrome (MERS) outbreak in South Korea in 2015. Most recently, a novel Coronavirus (SARS-CoV-2, also known as COVID-19) triggered an outbreak in China in December 2019, sparking international concern. While some coronaviruses have caused devastating epidemics,

others cause mild to moderate respiratory infections, like the common cold[2].

At least 830 cases had been diagnosed in nine countries in January 24, 2020 they are China, Thailand, Japan, South Korea, Singapore, Vietnam, Taiwan, Nepal, and the United States[3]. Twenty-six fatalities occurred, mainly in patients who had serious underlying illness. Many details of the emergence of this virus such as its origin and its ability to spread among humans remain unknown[3,4].

An increasing number of cases appear to have resulted from human-to-human transmission given the severe acute respiratory syndrome Coronavirus (SARS-CoV) outbreak in 2002 and the Middle East respiratory syndrome Coronavirus (MERS-CoV) outbreak in 2012. The 2019-nCoV is the third Coronavirus to emerge in the human population in the past two decades an emergence that has put global public health institutions on high alert[4].

After discovery of the causative agent, China responded quickly by informing the World Health Organization (WHO) of the outbreak and sharing sequence information with the international community[5].

EPIDEMIOLOGY

On December 12, 2019, the first case of the COVID-19 epidemic was discovered with un explained pneumonia. Although on December 31, 2019, 27 viral pneumonia cases with 7 being severe were officially announced. Etiologic investigations have been performed in patients who applied to the hospital due to similar viral histories. These patients have strengthened the likelihood of an infection transmitted from animals to humans[6]. On January 22, 2020, novel CoV has been declared be originated from wild bats and belonged to Group 2 of beta-Coronavirus that contains Severe Acute Respiratory Syndrome Associated Coronavirus (SARS-CoV)[7].

Although COVID-19 and SARS-CoV belong to the same beta coronavirus subgroup, similarity at genome level is only 70%. The novel group has been found to show genetic differences from SARS-CoV[8]. Similar to the SARS epidemic, this outbreak has occurred during the Spring Festival in China, which is the most famous traditional festival in China, during which nearly 3 billion people travel countrywide. SARS-CoV-2 was transmitted from China to other countries via international travellers[7].

These conditions caused favourable conditions for the transmission of this highly contagious disease and severe difficulties in prevention and control of the epidemic[8].

The first case of SARS-CoV-2 infection was confirmed outside China in Thailand on 13 January 2020. And the first infected case was confirmed in Japan on 16 January 2020[9].

So far, 16 March 2020, more than 150 countries and territories have been affected, with major outbreaks in central China, South Korea, Italy, Iran, France, and Germany[8,9].

SYMPTOMS

The symptoms of COVID-19 infection appear after an incubation period of approximately 5.2 days. The period from the onset of COVID-19 symptoms to death ranged from 6 to 41 days with a median of 14 days. This period is dependent on the age of the patient and the patient's immune system[9,10].

The most common symptoms of COVID-19 includes: illness and fever, cough, fatigue, while other symptoms include sputum production, headache, haemoptysis, diarrhoea, dyspnoea and lymphopenia. Less common symptoms include headache, dizziness, abdominal pain, diarrhoea, nausea, and vomiting[10,11].

Clinical features revealed by a chest CT scan presented as pneumonia, however, there were abnormal features such as RNA anaemia, acute respiratory distress syndrome, acute cardiac injury, and incidence of grand-glass opacities that led to death. Severe complications such as hypoxemia, acute ARDS, arrhythmia, shock, acute cardiac injury, and acute kidney injury have been reported among COVID-19 patients. It is important to note that there are similarities in the symptoms between COVID-19 and earlier beta coronavirus such as fever, dry cough, dyspnea and bilateral ground-

glass opacities on chest CT scans. However, COVID-19 showed some unique clinical features that include the targeting of the lower airway as evident by upper respiratory tract symptoms like rhinorrhoea, sneezing and sore throat[11-13].

COVID-19 HAS NOW BEGUN TO SHOW NEWER SYMPTOMS AND SYNDROMES

In addition to the well-known breathing problems, blood clots are a significant danger for COVID-19 patients. Clots are causing patients with COVID-19 to have heart attacks and strokes; form strange rashes on their skin; and get red, swollen wounds that look like frostbite on their fingers and toes. On autopsy, the small vessels of the lungs and bowels, liver, and kidneys of COVID-19 patients are choked with clots[12-14].

As more people around the world are infected with Covid-19, were learning that the novel corona virus can not only cause severe respiratory illness, but also can attack just about every major organ system in the body. And lately doctors have been sounding the alarm about a disturbing new outcome: blood clots and strokes, which are striking even healthy young people with no known risk factors and sometimes no other, symptom of the virus[14,15].

An April 28 report in the *New England Journal of Medicine* details the cases of five people, ages 33 to 49, in New York City who had strokes and subsequently tested positive for COVID-19. All of them had large-vessel strokes outside of the hospital before experiencing other severe symptoms of the virus; one of them has since died[11].

"It was very surprising to see the increase in this large-vessel stroke in young people," Thomas Oxley, a neurosurgeon at Mount Sinai in New York and a co-author of the new report, tells Vox. As he explains, "The bigger the vessel, the bigger the stroke"[15].

It's the biggest story emerging" about Covid-19, he adds. The rate of large-vessel stroke victims under 50 they saw was seven times higher than before the pandemic.

Blood clots are also causing other unexpected problems for COVID-19 patients. For example, Broadway actor Nick Cordero, who has been hospitalized since March with severe COVID-19, had his right leg amputated earlier this month after doctors were unable to control clotting there. And many patients are developing small clots in their lungs, reducing the amount of oxygen they can move into their bodies. For others, their blood is clogging dialysis machines (which has been a problem due to the amount of kidney failure this illness is also causing).

"I'm a hematologist and this is unprecedented," says Jeffrey Laurence of Weill Cornell Medical College, who has been in the field for three decades. "This is not like a disease we've seen before"[16].

Nearly every patient he has seen for blood disorders in the past month and a half has had COVID-19. "I've never had so many consults in my life. These people are clotting and we can't shut it off".

THESE SYMPTOMS ARE NOT ALL INCLUSIVE. THERE ARE NEW SOME NEW SYMPTOMS OF COVID-19

The 7 lesser known COVID-19 symptoms that everyone should be aware of, as the highly infectious novel coronavirus continues to sweep the globe, countries around the world are struggling to flatten the curve even with strict lockdown and social distancing protocols. With more than 75,000 (and counting) confirmed cases in India itself, the enigmatic pathogen is wreaking havoc in unprecedented ways.

The lesser-known symptoms

While scientists and medical researchers are working at breakneck speed to develop a vaccine for COVID-19, medical workers are still struggling to tabulate and an exhaustive list of novel coronavirus symptoms. As per the World Health Organization, most people may experience mild to moderate illness and will recover from the disease without requiring hospitalization[14,15].

Initially, lingering dry cough, fever, breathless and fatigue were believed to be the telltale symptoms of

COVID-19, but as the disease continues to spread its fang across people of different age groups, newer symptoms are emerging. As we continue to learn more about how the virus behaves, we are compiling all lesser-known symptoms of COVID-19 which are known till now[13,14].

Diarrhoea, vomiting and nausea

An editorial published in the British Medical Journal explained that the initial manifestation of infection can cause diarrhoea by infecting the gastrointestinal tract. It may also cause symptoms such as vomiting, nausea and abdominal pain through neurological involvement or production of cytokines. It is important to note that as per a report published in the World Health Organization nausea and vomiting has been reported in a small percentage of patients (5%)[10,13].

Conjunctivitis

A recent study in China suggests that the COVID-19 disease may cause ocular symptoms in some patients and lead to pink eye (conjunctivitis) as well. Conjunctiva is a clear thin membrane that lines the inner surface of the eyelid. Infection in conjunctiva can be seen in patients with more severe disease[15,16].

Rashes and blood clots

As per the reports, a new syndrome is being reported in kids which appears to be linked to COVID-19 disease. This symptoms of this rare syndrome include rash, peeling palms or soles in addition to fever, peeling lips and inflamed eyes.

Moreover, an early report from Italy also states that in a group of 88 confirmed positive patients, 20 percent developed varied skin symptoms such as a patchy red rash, hives, urticaria, blisters and even blood clots. Your body's reaction to the virus may trigger skin rashes[12,13,15].

CHILBLAINS

COVID-19 patients may also develop multiple lesions on their toes, soles or fingers that resemble chilblains. It is more common in younger adults and children. This discolouration of fingers or toes is now called as COVID-19 toe[16].

Headache

COVID-19 seems to affect different people differently and according to a World Health Organization report, 14 per cent of the people infected with COVID-19 experience headache. A throbbing headache could be the result of the production of cytokines in the body as your immune system gears up to fight the disease[14-16].

Dizziness

A research conducted by the Huazhong University of Science and Technology in Wuhan found out that 36 percent of COVID-19 patients experienced headache and dizziness. While some patients displayed dizziness in addition to respiratory symptoms, others only had neurological symptoms including dizziness.

It is important to note that if you experience severe light headedness or dizziness, it is essential to contact your doctor right away[16].

Loss of taste or smell

Initially thought as a less common symptom, loss of taste and smell may actually be one of the most telltale signs of COVID-19. Recent findings suggest that these symptoms should be added to the list of main symptoms of the novel Coronavirus[14].

Difficulty in walking and talking

The WHO has listed difficulty in walking and talking as one of the most serious symptoms of COVID-19. If you experience any of these symptoms, it is strongly advisable to seek medical attention immediately.

Some people may experience worsened symptoms, such as worsened shortness of breath and pneumonia, about a week after symptoms start[4,5,9,15].

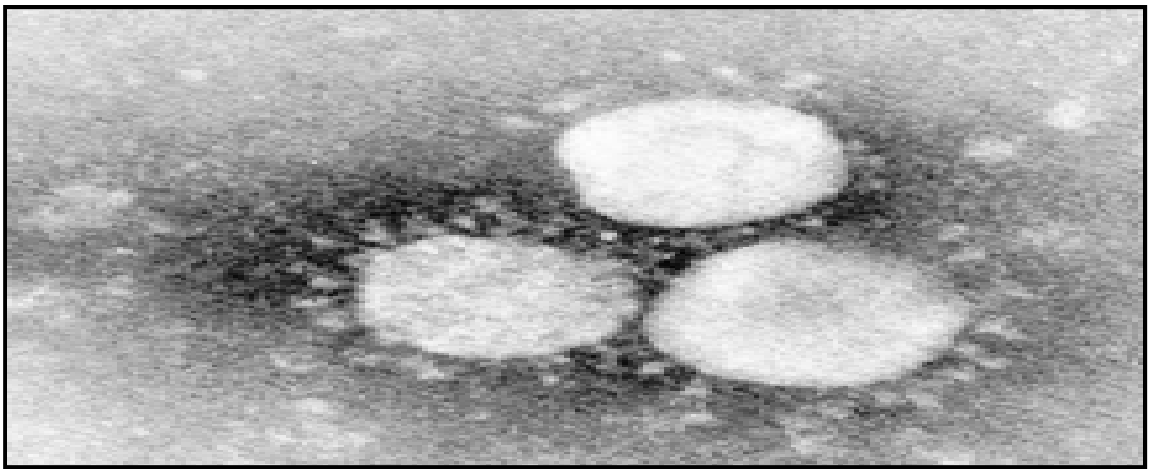
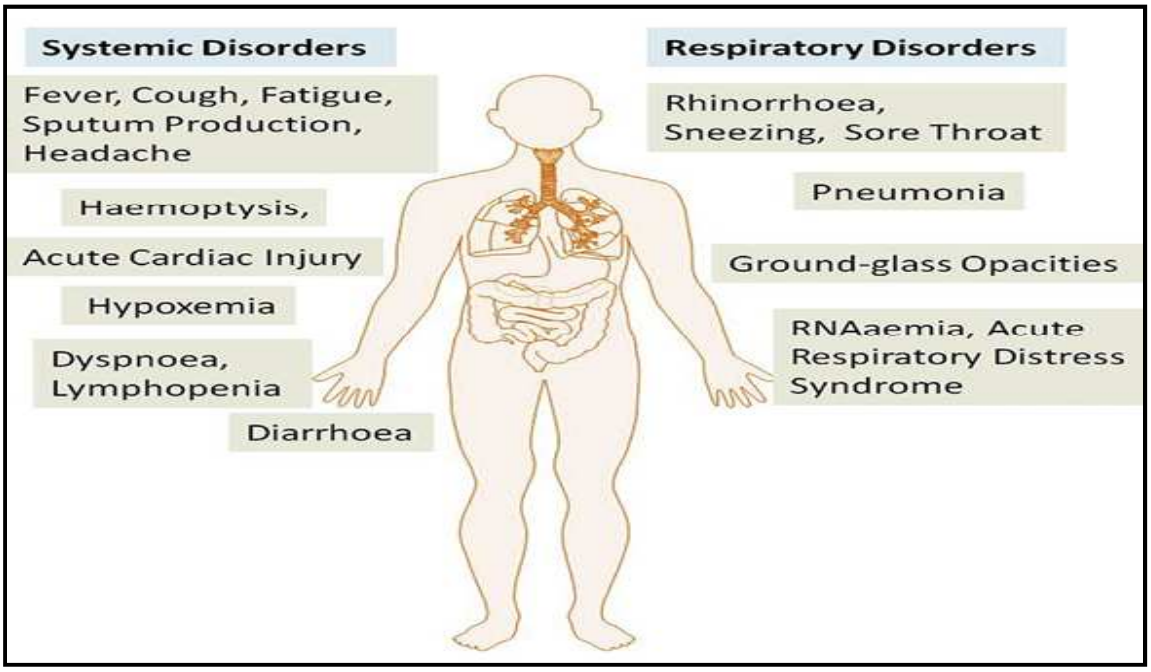


Figure No.1: Electron micrograph showing human Coronavirus



CONCLUSION

The current COVID-19 pandemic now becomes an international public health problem. So we should have to know about the knowledge of its pathogen, how it infects cells and causes disease and clinical characteristics of disease. Despite some diversity in initial symptoms, most COVID-19 patients have fever and respiratory symptoms. As per WHO guideline avoid the contact with sick person and also avoid the market or public place as per possible.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

BIBLIOGRAPHY

1. Sahin A R, *et al*. 2019 Novel Coronavirus (COVID-19) Outbreak: A Review of the Current Literature, *EJMO,* 4(1), 2020, 1-7.
2. Woo P C, Huang Y, Lau S K, Yuen K Y. Coronavirus Genomics and Bioinformatics Analysis Viruses, *Viruses,* 2(8), 2010, 1804-1820.
3. Adhikari S P, *et al*. Epidemiology, Causes, Clinical Manifestation and Diagnosis, Prevention and Control of Coronavirus Disease (COVID-19) during the early outbreak period: a scoping review, *Infectious Diseases of Poverty,* 9(29), 2020, 1-12.
4. Cheng C C V, *et al*. Severe Acute Respiratory Syndrome Coronavirus as an Agent of Emerging and Reemerging Infection, *Clinical Microbiology Reviews,* 20(4), 2007, 660-694.
5. WHO, Clinical Management of Severe Acute Respiratory Infection (SARI) when COVID-19 disease is suspected, *Interim Guidance,* 2020.
6. Dharmendra Kumar, Rishabha Malviya, Pramod Kumar Sharma. Corona Virus: A Review of COVID-19, *EJMO,* 4(1), 2020, 8-25.
7. Shrikrushna, *et al*. A Review on Coronavirus (COVID-19), *Wjpls,* 6(4), 2020, 109-115.
8. Peiris J S, *et al*. Coronavirus as a Possible Cause of Severe Acute Respiratory Syndrome, *The Lancet,* 361(9366), 2003, 1319-1325.
9. Said Nadeem. Coronavirus COVID-19: Available Free Literature Provided by Various Companies, *Journals and Organizations Around the World,* 5(1), 2020, 7-13.
10. Yosra A, Helmy, *et al*. The COVID-19 Pandemic: A Comprehensive Review of Taxonomy, Genetics, Epidemiology, Diagnosis, Treatment and Control: Review, *Journal of Clinical Medicine,* 9(4), 1225, 2020, 1-29.
11. Jiang Fang, *et al*. Review of the Clinical Characteristics of Coronavirus Disease 2019 (COVID-19), *JGIM,* 35(5), 2020, 1545-1549.
12. Harapan H, *et al*. Coronavirus disease 2019 (COVID-19): A literature review, *Journal of Infection and Public Health,* 13(5), 2020, 667-673.
13. Chen N, *et al*. Epidemiological and Clinical Characteristics of 99 cases of 2019 Novel Coronavirus Pneumonia in Wuhan, China: a descriptive study, *Lancet,* 395(10223), 2020, 507-513.
14. Hussin A, Rothan, Siddappa N, Byra reddy. The Epidemiology and Pathogenesis of Coronavirus Disease (COVID-19) Outbreak: Review, *Journal of Autoimmunity,* 109, 2020, 102433.
15. COVID-19 has now begun to show newer symptoms and syndromes, 2020. https://www.wionews.com/world/covid-19-has-now-begun-to-show-newer-symptoms-and-syndromes-298424.
16. Coronavirus's New Mystery: It's Causing Strokes in Healthy People, 2020. https://www.vox.com/2020/5/1/21244171/stroke-coronavirus-symptoms-blood-clots.

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