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Covid-19 Pendemic (Incidence, Risk factors and Treatment)

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1. INTRODUCTION

At the end of 2019, the coronavirus disease (COVID-19) was observed in Wuhan, China. It has since distributed to over 220 countries and territories, prompting the World Health Organization (WHO) to announce it a worldwide outbreak . It is generated by the unique SARS-CoV-2 coronavirus and resulted in a global, unexpected, and substantial increase in hospitalizations for bronchitis with organ dysfunction illness. This brief article summarizes the existing studies on COVID-19 incidence, risk factors, and management.

2. Incidence

SARS-CoV-2, the virus that causes COVID-19, has been declared by the WHO as at a global pandemic, with over 233 million recorded cases and over 3.8 deaths globally worldwide (1). The United States (U.S.) had the highest rate of SARS-CoV-2 illnesses and COVID-19-related death rates, followed by Brazil and India. COVID-19 was the third most common cause in the United States in 2020, trailing only cancer and heart disease, with almost 375,000 confirmed deaths (2). The Alpha (B.1.1.7) variant has expand to 200 countries worldwide, the Beta (B.1.351) variant has been confirmed in 119 countries, the Gamma (P.1) variant has been identified in 71 countries, and the Delta variant (B.1.617.2) has distributed to 85 nations around the world, according to the WHO's weekly epidemiological update as of 22 June 2021. According to latest WHO reports, the newer version of SARS-CoV-2 known as (B.1.1.529) or Omicron, which is presumed more invasive than delta, has distributed to more than 38 countries. The existing WHO global mortality rate for COVID-19 is anticipated to be 2.2 %. However, maturity level, pre-existing health issues, and the severity of symptoms all play a significant role in the number of fatalities, which differs widely between countries (3)

3. Risk factors

COVID-19 severity has been associated with a multitude of considerations. Virus infection and illness are influenced by viral, ecologic, and host factors. The virus is transmitted and continues to spread through intimate interaction and droplets from respiratory secretions, nasal congestion, and loud speaking, as well as contact with infected particles (4). Crowding is extremely infectious among staff and patients in health care facilities and senior care centres because it is a major risk for contaminations. It is more common in the elderly (4, 5),males (4, 5), and people who have hyperglycemia, high blood pressure, heart disease, or cancer (4). Furthermore, severe overweight and active cancer were associated with a higher risk of a serious outcome (5).

4. Treatment

1: Asymptomatic infection : First, they must isolate themselves and monitor their clinical symptoms.

2 : Mild illness : According to the NIH guidelines, individuals with mild infection should be treated with SARS-CoV-2 neutralising antibodies such as REGN-COV2 (casirivimab and imdevimab) or bamlanivimab/etesevimab or sotrovimab for outpatients who are at risk of disease progression with a low threshold to consider hospitalisation for closer monitoring (3).

3 : Moderate infection : First, the people was admitted to the hospital for close observation. Second, if SpO2 is much less than 96 percent, supportive care, such as isotonic intravenous fluids if quantity is exhausted and oxygen therapy , must be started (6). Third, if an immune system is compromised, start antimicrobial treatment right away. Patients who are at significant risk of pulmonary embolism must be given anticoagulation. Fourth, for patients requiring oxygen therapy, Remdesivir and dexamethasone may be regarded (3)

4. Severe infection: First, hospital treatment, airflow, and antithrombotic pharmacotherapy should be considered. In cases of renal dysfunction, kidney replacement medication should be proceeded. HFNC or NIPPV can be used for people who do not involve mechanical ventilation. In patients admitted to intensive care units on HFNC or NIPPV who had proof of chronic illness, the NIH then suggested dexamethasone alone or in combination with remdesivir, baricitinib, or tocilizumab. Baricitinib plus remdesivir could be used in non-intubated people who undergo oxygen via non-invasive or invasive ventilation if corticosteroids cannot be used. To keep mean arterial pressure (MAP) around 60 and 65 mmHg, vasopressors must be initiated as soon. Norepinephrine is the preferred first vasopressor. If a secondary bacterial infection is possible, empiric antimicrobial pharmacological treatment is needed. Antibacterial drugs use must be reevaluated everyday for de-escalation, and medicine duration must be examined for suitability based on the diagnosis (3).

5. Vaccination

There have been currently over 64 vaccine nominees , the large percentage of which intend to stimulate antibody responses against the spike protein (s). These immunoglobulins will avert virus replication by preventing accumulation via the human ACE-2 receptor. Numerous vaccine technologies are used for vaccine development, each with its own sequence of benefits and drawbacks. Thirteen vaccine nominees have been evaluated in Phase iii clinical experiments, introducing the vaccine one step closer to authorization or permission for large-scale immunization (7).

6. Conclusion

The coronavirus epidemic has put a lot of stress on the world's financial, healthcare, and environmental health infrastructures. Only time will prove how the virus will actually impact us in the years ahead. Furthermore, zoonotic pathogen and virus epidemics are highly probable to develop in the future. As a result, extra measures should be taken to enhance organizational effectiveness preventative measures for future virus epidemics. Furthermore, understanding the underlying mechanisms of all different versions should be prioritized in enhancing the descriptions and establishment of efficient therapeutic approaches and immunisations. However, our ability to contain future outbreaks will be determined by the actions we take in light of previous pandemic lessons. These gaps are expected to be filled by research on the current COVID-19 pandemic.

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