

COVID-19: Epidemic Wave in the World

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The coronavirus disease outbreak (COVID-19), in Wuhan, China, December 2019. The infection was spread to all most all countries in 2020. The World Health Organization has been officially declared that Covid-19 is pandemic with unprecedented health issues. Local transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) rapidly started in USA, Brazil and India. As of September 2020 the total number of cases in the world are 27, 486 960 and death rate number is 894 983. The total 216 countries and territories are effected with COVID-19.

The number of studies shows that coronavirus disease is pandemic. Scientists have applied “random mixing” models to assume that an infectious individual may spread the disease to any susceptible member of the population, as originally proposed. Presently 169 countries doing experiments on corona virus vaccine. Out of 169 countries, 26 countries are in human trial phase. All scientists are working on vaccine and drug development collaboration with World health organization.

The clinical symptoms associated with COVID-19 are fever, cough, indigestion, and pneumonia. Lungs infection is the main factor of respiratory failure and severe mortality. The asymptomatic patients contributes as super-spreaders. The common comorbidities are diabetes, cardiovascular disease (CVD), digestion, cerebrospinal, hypertension, cancer, rheumatoid arthritis and neurological debility. Clinical studies are going on COVID-19 infection. However, clinical, laboratory, and computed tomography studies have suggested vertical intrauterine transmission of COVID-19 in from infected pregnant women to fetus.

Currently no evidence of intrauterine transmission. But due to the COVID-19 infection, possibility of developing the congenital disease in the fetus. Further, the prevalence of COVID-19 and severe disease associated with sex and smoking correlate with high expression of the ACE2 receptor. Some studies.

Presently number of Clinical trials going on Covid-19 in the world. Some studies shows that antiviral agents such as antimalarial drugs (chloroquine and sister molecule hydroxychloroquine), remdesivir, Lopinavir/ritonavir, Favipiravir, Ribavirin, angiotensin convertin enzyme (ACE2) blockers has shown efficient in treating COVID-19 infection with acceptable safety standards in multicenter clinical trials. Immunotargeting of epitopes provide new paradigm of therapy against coronavirus. Nearly, 120 epitopes present on B and T cells, determined by considering high similarity between SARS-CoV-2 and SARS-CoV.

Immune system hyperactivity seen in COVID-19 patient that may be the leading cause of hyperinflammation (cytokine storm nomenclature) and macrophage activation syndrome (MAS). MAS is seen in outside the lung and is an activation of the intravascular coagulation cascade for lymph enlargement, hepatosplenomegaly, anaemia, cytopenias, liver function disorders, and inflammation. Hyperinflammation therapy is the critical need to decrease mortalities. Hyperinflammatory syndrome is a secondary hemophagocytic lymphohistiocytosis (SHLH), characterized by malignant hypercytosis and MAS with multiorgan failure.

This paper summarizes the COVID-19 background, pathogenesis, method of transmission, on the progress of new therapies, including antivirals and vaccines with proven safety profiles, current treatment, and clinical studies on antiviral drugs.

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