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Assignment:

Discuss the etiology, origin and structure and pathophysiology of COVID-19

Answer.

Overview:

Covid -19 as commonly called is a pandemic viral infection caused by coronavirus. Corona virus belongs to the family cornaviridae in the Nidoviradaes order. which is a family of enveloped rna[ribonucleic acid] virus that has its tropism for the respiratory tract. They are common in humans as well as animals [camels, cattle, cats, and bats. There are seven different strains of corona virus. 229E, NL63[alpha corona viru], OC43, HKUI[beta coro na virus], MERS-CoV e.t.c.

Etiology:

The strain of virus for the pandemic situation n is the SARS-CoV-2 and it is designated as the cause of severe acute respiratory syndrome. In 2019 it wasto as the cause of the upper and lower respiratory tract infections in wuha, a city in the hu bei province of china. It rapidly spread resulting in the epidemic throughout china nd now a pandemic through out the world. cause: it is unclear exactly how this virus spread bu it appears to spread from person to person among those i n close contact. It may spread through respiratory droplets released whe n the person that has the virus coughs or sneezes. Civet palm is the secondary host

Origin

The corona virus emerged in Wuhan, china and sprad around the world. Genomic analysis show that SARS COV-2 IS phylogenetically relate d to sever acute respiratory syndrome like sars like bat viruses , therefore bats could be a primary reservoir.

The intermediate source of origin to humans is not known, however the rapid human to human transfer has been confirmed widely.

Structure

Corona represents crown like spikes on the outer surface of the virus; thus is named cororna virus. Corona virus are minute in size [65-125nm in diameter] and contain asingle stranded RNA as a nucleic material, size ranging from 26kbs to 32kbsin length.

Pathophysiology

Pathophysiology and virulence mechanisms of this virus havelinks with the function of the nsps and structural protein. Nsp is able to block the the host innate immune response. Among functions the envelope has acrucial role in virus pathogenecity as it promotes viral assembly and release. The spike glycoprotein composed of two sub unit guides linking to the host receptors. It contains a fushion peptide, a transmembrane domain, a cytoplamic domain is highly conserved therefore its target for antiviral compounds.it enters through the mucuosaal membrane to the lungs via the circulatory system, goes into the pneumocyte type 2 calls causing a release of interleukins, prteases, fighting cells such as neutrophil ansd mast cells. Translation, transcription and replication occurs. New viruses are produced and this produce s new viruses and the cycle contines.

References

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