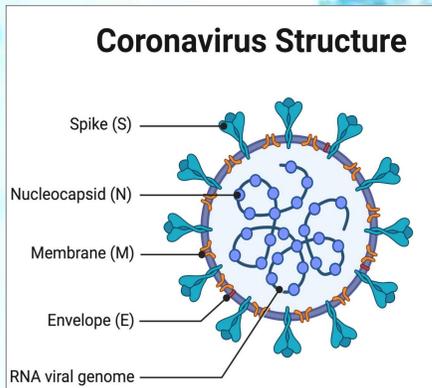


Introduction

- A novel coronavirus (CoV) named '2019-nCoV' or 2019 novel coronavirus or COVID-19 by WHO is in charge of the current outbreak of pneumonia that began at the beginning in Dec, 2019 near in Wuhan city, China. Being considered as pandemic, it has reached more than 150 nations, where compared to seasonal influenza, it has higher rate of fatality and without antidote and vaccination
- Though related to SARS, but the fatality rate is higher in older ages and for males in comparison to SARS.



Structure

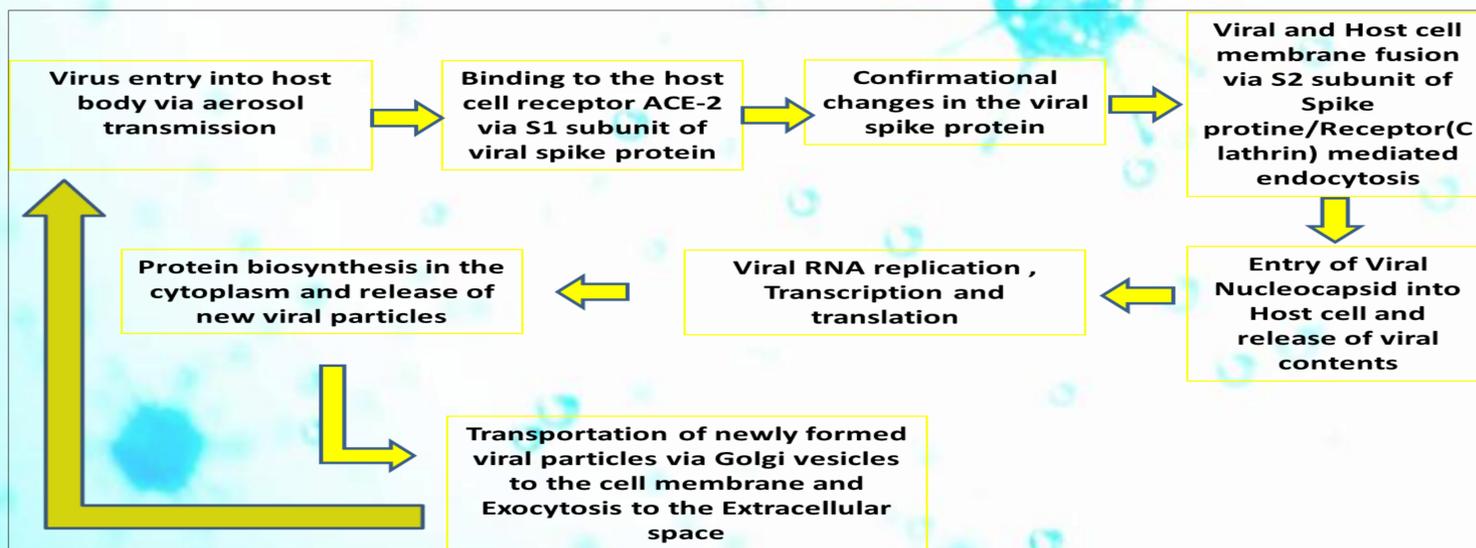
- CoVs of the family coronaviridae are enveloped, positive-sense single-stranded RNA viruses.
- Its genome comprises 14 open reading frames (ORFs), two thirds of which encode 16 non-structural proteins (nsp 1-16) that make up the replicase complex.
- The remaining one third encodes nine accessory proteins (ORF) and four structural proteins: spike (S), envelope (E), membrane (M), and nucleocapsid (N) of which spike mediates SARS-CoV entry into host cells.

Transmission and Pathogenicity of Covid :

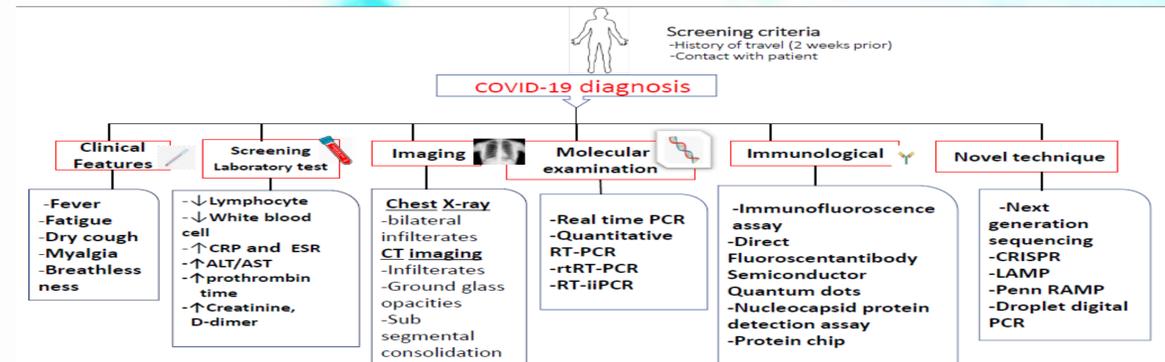
- The binding of a receptor expressed by host cells is the first step of viral infection followed by fusion with the cell membrane.
- It is reasoned that the lung epithelial cells are the primary target of the virus.
- It has been reported that human to human transmissions of SARS-CoV occurs by the binding between the receptor – binding domain of virus spikes and the cellular receptor which has been identified as angiotensin-converting enzyme 2 (ACE2) receptor.

Pathogenicity & Life cycle:

- The main pathogenesis of Covid-19 infection of a respiratory system targeting virus was severe pneumonia, RNAemia, combined with incidence of ground-glass opacities, and acute cardiac injury.
- Patients infected with COVID-19 showed higher leukocyte numbers, abnormal respiratory findings, and increased levels of plasma pro-inflammatory cytokines



Diagnosis



Microbiological measures for its prevention

- Wash hands with alcohol based hand wash/soap/water
- Maintain at least 1/3rd feet distance while interacting
- Do not touch your nose, hand or ears
- Wear mask while you sneeze or cough, preferably with your bent elbow or tissue
- Try to find early medical attention, if you have fatigue, cough and trouble breathing
- Use sanitizers to sterilize your hands

Treatment

- Vaccines are designed to protect people they are exposed to a virus in this case SARS-CoV-2. A vaccine basically trains the immune system to recognize and attack a virus, even one it hasn't seen before. While vaccine imitate an infection, they almost never cause illness.
- Various drugs are being given to the patients: Remdesivir-over 12 years of age (Sotrovimab/casirivimab+imdevimab) – high risk patients 2-deoxy-D-glucose (developed by DRDO)

Conclusion

- The transmission of novel COVID-19 is increasing with an unexpected speed for humans to humans around the world. Noticeably, mode of transmission contributes to accelerating the spreading of COVID-19 which may assist a scientist to discover effective therapeutic measures. In this pandemic situation



Dr. Geetanjali Basak



Ansuman Ray



Susmita Garai



Prerona Laha



Shohini Ghosh



Suprabha Mondal