Aerosol droplets can transmit SARS COVID 2 or COVID-19 from the affected person as well as contact with contaminated surface and skin. COVID 2 infection a complicated issue of public health. It is a pandemic and the virus can induce Severe acute respiratory syndrome. The COVID-19 is a virus with a single strand RNA enveloped in a lipid bilayer. It has a long incubation period, it is highly contagious and spreads rapidly. SARS, MERS, and COVID may have broad clinical spectrum from mild to severe depends on the fragility of the patients, and the comorbidities [1].

The case fatality rate of SAR is 11%. The fatalities rate of COVID 19 is still under investigation.

The COVID-19 infection has resulted in a high number of deaths. Globally, the overall record until the 29th of April was 3.179.494 cases with 2.261.73 death.

The virus enters the cell by the interaction of the spike protein S protein to the human receptor ACE2, which is the same as SARS COVID 1.

How is lung injury in COVID 2?

After the necropsy performed by the Italian physicians, they described a complex lung injury with elevated inflammatory cytokines (cytokine storm) with high circulating dimer D and C reactive protein.

The COVID-19 lung injury is similar to that characterized by COVID 1, diffuse alveolar damage with edema, hyaline membrane, inflammation, and pneumocyte hyperplasia [2].

The long-term effect is unclear. Comorbidities are important hypertension, diabetes, cardiovascular disease, obesity, COPD, and renal failure. The overexpression of the ACE receptor in the alveolar epithelium is the key. Moreover, endotheliitis, induction of apoptosis, pyroptosis is the mechanism of endothelial injury [3].

The complex ACE 2 receptor with spicular proteins of COVID has two units. S1 is the region of contact and S2 is the region of the protein that allows of fusion of the virus with the plasma membrane of the cell.

Morphologic and molecular changes in the peripheral lungs are described. In a small sample of seven patients: severe endotheliitis, microthrombosis, alveolar capillary damage, new vessel with the mechanism intussusception angiogenesis. Intravascular thrombi with elevated D dimer, PCR, ferritin, IL6, suggest “cytokine storm” and multiple organ failure [4].
Covid-19 in Lungs

Lungs images x-ray, portable chest CT, are useful in COVID and early stages with different pattern ground-glass opacities, consolidation bilateral bronco gram, posterior lobes predilection, and sub pleura involvement [5].

The new stethoscope or sonoscope is new novel apparatus that allows ultrasounds studies with personal protective equipment in ICU, outpatient follows up, intubation protocol, invasive ventilation in patients with respiratory failure with COVID 2. In lungs, you can see four different patterns, lines lungs are clear, b lines lungs wet interstitial pattern with two phenotypes L and consolidation pattern with air bronco gram, and pleural effusion pattern. In ICU, it is useful in the short neck, mallapanty type 4, obesity patients, in the prone position for prognosis in severe respiratory distress, and extubation protocol [6].

The new portable ventilator, the new anticoagulation therapy nondependent of vitamin k, the news drug for pulmonary hypertension, ECMO for severe distress with CHF, and lungs transplantation in severe patients, severe shook patients is possible.

Remdesivir is not the future, but the COVID is with us for how long?

What is the appropriate target? Spike protein? Monoclonal antibodies? Convalescent plasma? Immunoglobulins? The vaccine is not easy; we need to know the vaccines generate protective antibodies because the immunity in COVID patients is uncertain till today.

Bibliography

1. John Hopkins university c5secovid19das.board.