**GREEN GRACE IGBOGI**

**18/MHS07/021**

**PHARMACOLOGY**

**ANA 202 ASSIGNMENT**

**QUESTION**

**Convid-19 is the ongoing viral pandemic in the world and the reason you are at home. Discuss the anatomical implication of this virus on the respiratory system of human.**

The virus, officially named SARS-CoV-2, enters the body generally through the mouth or nose. From there, the virus makes its way down into the air sacs inside your lungs, known as alveoli.

Once in the alveoli, the virus uses its distinctive spike proteins to “hijack” cells. The primary genetic programming of any virus is to make copies of itself, and COVID-19 is no exception. The virus is an RNA virus. Now once the virus’ RNA has entered a cell, new copies are made and the cell is killed in the process, releasing new viruses to infect neighbouring cells in the alveolus.

This process can occur initially without a person being aware of the infection, which is one of the reasons COVID-19 has been able to spread so effectively. The process of hijacking cells to reproduce causes inflammation in the lungs, which triggers an immune response. As this process unfolds, fluid begins to accumulate in the alveoli, causing a dry cough and making breathing difficult.

For 80-85% of people infected by COVID-19, these symptoms will run their course much as they would with a case of the flu. In 15-20% cases, the immune system’s response to inflammation in the lungs can cause what is known as a [“cytokine storm”](https://www.npr.org/sections/health-shots/2020/04/07/828091467/why-some-covid-19-patients-crash-the-bodys-immune-system-might-be-to-blame). This runaway response can cause more damage to the body’s own cells than to the virus it is trying to defeat, and is thought to be the main reason for why the conditions of young, otherwise healthy individuals can rapidly deteriorate.

If enough alveoli collapse, a patient to be placed on a ventilator for breathing assistance. Both acute respiratory distress syndrome (ARDS) and high-altitude pulmonary edema (HAPE) are being investigated as causes.

At this stage, the surfactant that helps keep alveoli from collapsing has been diluted, and fluid containing cellular debris is impairing the gas exchange process that supplies oxygen to our bloodstream.

In the most severe cases, systemic inflammatory response syndrome (SIRS) occurs as the protein-rich fluid from the lungs enters the bloodstream, resulting in septic shock and multi-organ failure. This is often the cause of death for people who have succumbed to a COVID-19 infection.