ODUKOYA TREASURE EWAOGOOLUWA

18/MHS05/010

PHYSIOLOGY

ANA 202

Question

COVID 19 is an ongoing viral pandemic in the world and the reason you are at home. Discuss the anatomical implications of the virus on the respiratory system of humans.

Answer

Lately, for most patients, COVID 19 starts and ends in the lungs, because like the flu it is a respiratory disease. The virus might start out with fever or cough that progress to pneumonia or worse.

Coronaviruses mostly affect the respiratory system, which is a group of organs and tissues that allow the body to breathe, it also typically infects the lining of the throat, airways, and lungs. Early symptoms of coronavirus may include coughing or shortness of breath. In some cases, it can cause severe damage to the lungs.

Usually, the immune system identifies and responds to coronavirus early by sending special proteins, or antibodies, to fight the infection. But the immune response to infection has side effects for the body, including fever. During an infection, white blood cells release pyrogens, a substance that causes fever.

Sometimes other symptoms will occur alongside a fever, including; runny nose, head and body aches, difficulty sleeping, sore throat, sweats, chills. These symptoms will usually last until the body fights off the coronavirus and symptoms might not show up straightaway. For example, people with COVID-19 may get symptoms 2 to 14 days after infection.

COVID 19, according to the early data, cause milder symptoms in 82% of cases, while the remainder are severe or critical.

In the early stage of the infection, the corona virus rapidly invades the human lung cells. These lung cells come in two classes, ones that make and ones with hair like batons called cilia.

Mucus helps protect lung tissues from pathogens and make sure breathing organs do not dry out. The cilia cells beat around the mucus, clearing out debris like pollen and viruses.

In a study, Frieman explains the SARS loved to infect and kill cilia cells, which then leave the patient’s airways filled with debris and fluid, and he hypothesizes the same in corona virus. This is because the earliest studies on COVID 19 have shown patients develop pneumonia in both lungs, accompanied by symptoms like shortness of breath.

This is then when the immune system kicks in. Aroused by the presence of a viral invader, our bodies step up to fight the disease by flooding the lungs with immune cells to clear away the damage and repair the lung tissue.

When working properly, this inflammatory process is tightly regulated and confined only to infected areas. But sometimes the immune system goes haywire and those cells kill anything in their way, including healthy tissues.

So this cause more damage to be done instead of less from the immune response. Even more debris clogs up the lungs and pneumonia worsens.

After these the lung damage continues to build which results in respiratory failure. Even if death doesn’t occur, some patients survive with permanent lung damage.

Also according to the WHO, SARS punched holes in the lungs, giving them “a honey comb-like appearance” and these legions are present in those afflicted by corona virus too.

These holes are likely created by the immune system’s hyperactive response, which create scars that both protect and stiffen the lungs. And when that occurs, patients often have to be put on ventilators to assist their breathing. Meanwhile, inflammation also make the membranes between the air sacs and blood vessels more permeable, which can fill the lungs with fluid and affect their ability to oxygenate blood. In severe cases, the lung is basically flooded and one can’t breathe that how people are dying with.