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MATRIC NO.: 18/MHS01/343

DEPARTMENT: ANATOMY

COURSE: ANA 204

**ASSIGNMENT:**

Explain the histological basic of upper respiratory system (conducting portion of the respiratory system) attacked by corona virus.

**Answer:**

COVID-19 is caused by a virus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV2).

COVID-19 latches its spiky surface proteins to the receptors on healthy cells especially those in the lungs, eventually kills some of the healthy cells. The illness starts with droplets from an infected person’s cough, sneeze or breath. They could be on the surface you touch before touching your eyes, nose or mouth that gives the virus a passage to the mucus membrane in your throat. Within 14 days your immune system may respond with early symptom like sore throat, a fever or dry cough. The virus moves down your respiratory tract The receptor for this coronavirus is abundantly expressed in certain progenitor cells. These cells normally develop into respiratory tract cells lined with hair like projections called cilia that sweep mucus and bacteria out of the lungs. As replications of the virus multiply, they infect neighboring cells. The symptoms often start in the back of the throat with a sore throat and a dry cough. They then move progressively down the bronchial tubes. When the virus reaches the lungs, their mucous membranes become inflamed. That can damage the alveoli or lung sacs. If swelling starts, it makes it that much more difficult for oxygen to move across the mucous membrane. The swelling and the impaired flow of oxygen can cause those areas in the lungs to fill with fluid, pus and dead cells. Pneumonia, an infection in the lung, can occur. Chest radiographs typically shows ground glass opacities and focal consolidation, especially in the **peripheral** **and sub pleural regions of the lower zones**. Those opaque areas can scatter and thicken in places as the illness worsens, creating what radiologists call a “crazy paving” pattern on the scan. Progressive involvement of both lungs is common and can take some few days to reach the upper respiratory tract, the trachea and other central airways.

The infection can spread through the mucous membranes, from the nose down to the rectum. While the lungs may seem like the only place being affected, it may also be able to infect cells in the gastrointestinal system, which causes symptoms like diarrhea or indigestion. Diarrhea is the most common extra pulmonary manifestation, accompanied by hepatic dysfunction, dizziness, which may be related to diastolic urinalysis.

The virus can also get into the bloodstream. Bone marrow and organs like the liver can become inflamed too. The virus will eventually reach organs like the heart, the kidney, the liver, and may cause some direct damage to those organs.

Hyaline membranes, inistitial infiltrates of inflammatory cells, bronchiolar injury with loss of cilia, bronchiolar epithelium denudation and focal deposition of fibrin were noticed. Other pulmonary complications may include secondary bronchopneumonia and invasive aspergillosis.

The elderly may present atypically without fever or respiratory symptoms. While children infected with the virus have milder symptoms than adults. The virus (SARS COV 2) in pregnant women have a high risk of mortality.

There is no known cure or antiviral agent for the virus yet so patients diagnosed with the virus have to be put on supportive care.