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COVID 19

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Introduction to the COVID 19 Process

The process begins by testing whereby viral or antibody tests would be done. The viral examination assesses if the patient has the virus currently, while the antibody assesses if the person had the virus in the past. One is said to be infected if viral RNA is identified by the molecular testing called RT-PCR. Notably, the detection of the RNA does not mean the person would spread. Thus, other evaluations like the virus replication ability, signs, symptoms, and the environment are considered to determine the actions to be taken.

Indications for Mechanical Ventilation

Mechanical ventilation lowers the breathing work, ensuring the patient receives enough oxygen, and carbon dioxide is eliminated. The primary indicator of mechanical ventilation in acute respiratory alteration. It is caused by ventilatory where the respiratory drive is lowered, or the chest develops abnormalities or unreliable gas exchange processes due to intrapulmonary shunt and lowered FRC. Other indicators are when the breathing control system is insufficient, load-metabolic imbalances, alveolar patency, or artificial airway develop weird muscle loads.

NIV Vs. Invasive

COVID 19 patients could experience breathing challenges demanding using a ventilator, so the air movement of air in the lungs continues. They would be given either invasive or non-invasive type of ventilator. The invasive type is administered with a tube put in the windpipe via the mouth or nose. The non-invasive, on the other hand, the air is provided with a sealed mask put on the mouth, the nose, or the entire nose. In most cases, invasive ventilation is preferred though the non-invasive is also reliable as the patients could talk, swallow, and have lesser risks.

Oxygenation Vs. Ventilation

Oxygenation and ventilation are different processes, where clinicians need to assess the patients' needs before picking any. Ventilation is the capability to get oxygen and breath out carbon dioxide. On the other hand, oxygenation is where oxygen is carried from the lungs to tissues and body organs. To determine if the client needs ventilation, clinicians check the chest rise, compliance with the valve masks, respiratory rate, and capnography. There is no reliable method to assess oxygenation, so the providers have to check many things to determine. The providers need to evaluate the patient's suitable method to avoid cases where they need emergency services due to deteriorated signs.

ARDS

ARDS stands for Acute Respiratory Distress Syndrome, which is a severe lung condition. It develops when the air sacks in the organ fill up, reduce the oxygen amount, or add the bloodstream's carbon dioxide. The illness makes the body organs not get enough oxygen, which would result in organ failure. It mostly attacks seriously sick patients with signs like rapid breathing, muscle fatigue, reduced blood pressure, discolored skin, hacking cough, and fever. The people over 65 years and those with a history of alcohol misuse are at more risk than the rest. For example, if these populations contract COVID 19, the condition would quickly attack them and even cause death in some cases.

Non-ARDS

COVID 19 meets the above ARDS definition, but it is a specific illness having peculiar phenotypes. Its leading feature is the dissociation between severe hypoxemia and the ensuring of a relatively reliable breathing process. The average rate is 50ml/cm H₂O, and the clients with either higher or lower values experience similar severity. Considering the COVID 19

pathophysiology, patients would either develop non-ARDS, type 1, or type 2 ARDS (Ferrando et al., 2020). Nevertheless, more research is being done to get more precise information about it.

Mechanical Ventilator Settings

When determining the ventilator settings, the oxygenation and ventilation for carbon dioxide removal have to be considered. In most cases, oxygenation management depends on PEEP, FiO₂, while carbon dioxide production relies on the tidal volume and respiratory levels. Other than attaining the arterial blood gas aims, these settings need to emphasize lowering or controlling the ventilator causing injuries in ARDS and hyperinflation in the obstructive lungs' illnesses. Finally, the settings need to compromise between attaining blood gas limits while curbing hyperinflation.

Prone Position

The prone position is where patients are turned with precise and safe movements from the back to the abdomen, so they stay facing down. A study researched COVID 19 patients with the ARDS and concluded that respiratory compliance was low when the supine position is chosen. However, the prone position was better because the lungs' recruitment and oxygenation processes improved (Damarla et al., 2020). Therefore, they advised that the prone position should help the patients recover from the virus.

Personal Protection/Precautions

Washing hands with soap for about 20 seconds is one of the personal precautions against the virus. After being in a public gathering or after being in contact with any body organ with fluids like the nose, it should be done. If the water is not accessed, sanitizers with about 60 percent of alcohol should be used. Another method is wearing masks whenever interacting with the public and avoid close contact with others even when the mask is worn. Observe social

distancing is a reliable method due to fluids movements. Surfaces like tables, phones, and toilets need to be disinfected regularly. Finally, people should monitor their health, especially when the virus' signs are identified, so they seek medical attention and ensure isolation immediately.

Special Procedures and Techniques

Special procedures and techniques on COVID 19 insist on human rights while countering the pandemic. The leading principles communicated are non-discriminating practices, participation, empowerment, and responsibility (United Nations Human Rights, 2020). The vulnerable people like the aged and street families need to be prioritized to educate on precautions.

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