Caring for the ARDS-COVID-19 Patient in the Emergency Department
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These patients are very dependent on high pressures to keep their lower airway open, so minimizing pressure loss is essential. If you are going to break the circuit on a vent (to bag, drain water, or whatever else) you should be clamping the ET tube (which needs to be done with gauze on the tube to prevent damage). If they are being bagged make sure that you are using a flow inflating bag or a self-inflating that has a peep valve on it.

Suctioning needs to be quick and purposeful. Long periods of suctioning caused derecruitment. If a patient has a plug or needs aggressive suctioning then you should consider a bag suction on kids, and adults probably need to just have an inline bronch. Suctioning should only be done with an inline catheter.

These patients need to have humidification on their circuits. Running a dry vent increases mucus plugs, and these patients already have a hard time moving their secretions. If you have no available humidifiers an HME valve can be helpful.

These patients can also be very sensitive to vent changes, turning, et cetera. Assuming the patient is not a shunt dependent heart preoxygenation will probably be helpful, but keep in mind that FIO2 is only a small part of ventilation and respiration. Expect these patients to have a VQ mismatch or throw a plug with any changes and stay at the bedside for a bit in case they deteriorate.

As we start to look at stretching out vents these patients need a double limb circuit, the use of single limb vents needs to be for patients who require lower peep and are less sensitive to inconsistent ventilation.

Try to minimize fluid pooling in the circuit. If it Is pooling in the inhalation limb and they have a inline humidifier you can usually dump the fluid back into the humidifier. The expiratory limb typically needs to be broken and dumped out. If you don't use flow transducers that pooled water is going to make the vent read inaccurately which can lead to inappropriate flow and pressure from the vent. Even if you do have a flow transducer the pooled water can still alter the ventilatory delivery, although typically to a much smaller amount. If you are running a G5 keep in mind that they are also pretty sensitive to the angle of the initial portion of the vent tubing and should never be laid flat.

Treatments can be a bit of a mixed bag. Hypertonics can help thin secretions but can also be irritating to the lung and cause bronchospasm. Albuterol can help open patients with asthma or a reactive component, but also increases metabolism and can increase oxygen demand. Typically giving treatments through an oscillator is ineffective, but patients should be in the unit if that is being considered.

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