Ventilator Troubleshooting and Management

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**Background:** The purpose of ventilator setting and adjustment is to maintain suitable level of oxygen and carbon dioxide in patients’ red blood according to their lung pathology. In addition, the ventilator must be setup to work in synchronizing with patient’s breathing.

**Objective:** To demonstrate how to use ventilator graphics to guide ventilator adjustment.

**Methods:** Patient-ventilator interaction is reviewed.

**Results:** It is known that patient-ventilator asynchrony is one of the major problems for unsuccessful ventilator settings. This might be due to patients’ high central drive or requirement of higher minute ventilation, but their lung pathology cannot correspond with these demands. Moreover, the ventilator settings may not conform to patient’s physiologic needs. For example, flow-in rate is too low, and inspiration time is too short or too long. The presentation will show a demonstrated COPD case. In the patient with emphysema, the machine has to be setup in the way to avoid air-trapping in alveoli or higher dynamic hyperinflation from air volume oversupply, with slower respiration rate so that the expiratory time is long enough to release higher volume of air from alveoli. As a result, less air is trapped.

**Conclusion:** Ventilator graphics help guide ventilator adjustment to avoid dynamic hyperinflation in COPD patients

**Keywords:** Patient-ventilator interaction, Asynchronization, Ventilator troubleshooting