

[TJS3]TSCCM-JSICM Symposium3

Mechanical ventilation

Chair: Toru Kotani (Department of Intensive Care Medicine, Showa University, Japan), Adisorn

Wongsa (Phramongkutklao Hospital, Thailand)

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[TJS3-4] Trouble shooting in mechanical ventilation

Boonsong Patjanasontorn (Division of Pulmonary and Critical Care Medicine, Department of Medicine, Khon Kaen University, Thailand)

【ライブ配信】

Ventilator troubleshooting during are serious problems happening while on mechanical ventilation. The problems could be the patient related or the machine related factors. The clinically deteriorating in mechanically ventilated patient includes hemodynamic instabilities, high pressure alarms, low pressure alarms, low exhaled tidal volume, and desaturation.

Etiology of troubleshooting could be the patient related factor such as volume depletion, pain, anxiety, and pulmonary or extrapulmonary disease process or the machine related factors such as improper ventilator settings, endotracheal tube problems, ventilator circuit problems, or ventilator dysfunction. Some of the problems may be life threatening. It requires logical and systematic search for the source of a problem in order to solve it.

The initial priority in dealing with ventilator troubleshooting is to assess the patient how severe is the problem by look at the O₂ saturation and hemodynamic instabilities. The next step is to diagnose the problem by manually bagging the patient with a self-inflating resuscitator to separate between the ventilator/circuit problems or the endotracheal tube/patient problems.

For hypotensive patient, the most important causes occurring soon after the initiation of mechanical ventilation are relative hypovolaemia, reduction in venous return exacerbated by positive intrathoracic pressure, or drug induced vasodilation and myocardial depression. It is possibilities that auto-PEEP or dynamic hyperinflation is the contributing factors those need to get rid.

Patient-ventilator dyssynchrony are less serious but it is important to identify and treat dyssynchrony for facilitate liberation process and no simply to sedate the patient more heavily those may prolong ICU course.