

Table 11: Complications of Invasive Mechanical ventilation

Adverse Physiologic Effects

- Impaired cardiac function
- Increased intracranial pressure
- Gastric distension
- Respiratory alkalosis
- Renal and hepatic dysfunction

Dynamic Hyperinflation and Auto-PEEP

Clinical Barotrauma (ventilator-related extra-alveolar air)

- Pulmonary interstitial emphysema
- Systemic air embolism
- Pneumomediastinum
- Pneumothorax
- Pneumoretroperitoneum/pneumoperitoneum

Complications of Intubation, Tracheostomy, and Artificial Airways

During intubation or performance of tracheotomy

- Difficult intubation; loss of airway
- Tissue injury; hemorrhage

While tube is in place

- Increased airway secretions
- Loss of endogenous humidification system
- Impaired mucociliary clearance
- Mucosal injury

Table 11, continued:

Alteration of mouth flora/lower airway colonization

Increased work of breathing

Loss of ability to speak

During extubation or decannulation

After extubation or decannulation

Immediate (laryngeal edema, vocal cord dysfunction)

Early (aspiration, pneumonia)

Late (tracheal stenosis)

Consequences of Ventilator Malfunction

Ventilator-Associated Pneumonia

Agitation and Respiratory Distress developing during mechanical ventilation

Worsening Oxygenation During Mechanical Ventilation

Ventilator-related problems

Progression of underlying disease

Onset of new medical problem

Effects of interventions/procedures

Medications

Technological/Communication Problems