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Decreasing Term of Intrusive Mechanical Ventilation for Preterm New-born Children

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INTRODUCTION

Mechanical ventilation is a life-saving intervention that supports individuals with respiratory failure, ensuring oxygenation and carbon dioxide removal. It has played a critical role in modern medicine, especially during the COVID-19 pandemic, where ventilators were in high demand. However, like any medical intervention, mechanical ventilation is not without its drawbacks and potential complications. In this article, we will explore the drawbacks of mechanical ventilation, shedding light on the challenges healthcare professionals and patients may face when this treatment is required. One of the primary drawbacks of mechanical ventilation is the risk of barotrauma and Ventilator Associated Lung Injury (VALI). Barotrauma occurs when high pressures delivered by the ventilator cause damage to the lung tissue. Over distension and alveolar rupture can lead to pneumothorax, a potentially life-threatening condition. VALI encompasses a range of complications, including inflammation and impaired gas exchange, making the patient's condition worse over time. Ventilator Associated Pneumonia (VAP) is another significant concern. Patients on mechanical ventilation are at an increased risk of developing pneumonia due to the introduction of artificial airways and the colonization of bacteria. VAP can lead to increased hospital stays, antibiotic use, and mortality rates, making it a critical drawback of prolonged mechanical ventilation [1-3]. Patients on mechanical ventilation for extended periods may develop Ventilator Induced Diaphragmatic Dysfunction (VIDD).

DESCRIPTION

This condition results from reduced diaphragmatic activity due to ventilator support. As a consequence, patients may experience muscle weakness and difficulty weaning from the ventilator, prolonging their dependence on the machine. Infection risk is a prevalent drawback associated with mechanical ventilation. The insertion of an endotracheal tube or tracheostomy can introduce pathogens into the airway, leading to ventilator-associated infections. These infections can include not only pneumonia but also sinusitis and bloodstream infections, posing a serious threat to patient health. Patients receiving mechanical ventilation often require sedation to tolerate the discomfort and anxiety associated with the procedure. However, prolonged sedation can lead to delirium, which is a common drawback. Delirium can cause confusion, agitation, and long-term cognitive impairment in some cases, further complicating patient recovery. While mechanical ventilation is life-saving, prolonged dependence on the ventilator can lead to a significant drawback ventilator dependency. Patients may struggle to wean off mechanical support, which can result in a protracted stay in the intensive care unit and a decreased quality of life [4,5]. Mechanical ventilation can impact a patient's hemodynamic, particularly in individuals with compromised cardiovascular systems.

CONCLUSION

Positive pressure applied during inspiration can affect cardiac output and venous return, leading to fluctuations in blood pressure and potential harm to patients with heart conditions. Mechanical ventilation can also affect the gastrointestinal system. Positive pressure can lead to increased abdominal pressure, potentially causing gastrointestinal bleeding, ulcerations, and even bowel necrosis. These complications can lead to malnutrition and prolonged hospital stays. Another critical drawback of mechanical ventilation is the financial and resource burden it imposes on healthcare systems and patients. The cost of mechanical ventilation, including equipment, staff, and infrastructure, can be substantial. Prolonged stays in the ICU can significantly impact healthcare expenses and resources, leading to difficult decisions regarding resource allocation. The psychological impact of mechanical ventilation on patients is

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often underestimated.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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