

BLOOD PRESSURE

J. Lundja

RFC, Kinshasa, Congo

Background: Negative air pressure ventilation has been used to maintain adequate functional residual capacity in patients with chronic muscular disease and to decrease transpulmonary pressure and improve cardiac output during right heart surgery. High-frequency oscillation (HFO) exerts beneficial effects on gas exchange in neonates with acute respiratory failure. We examined whether continuous negative extrathoracic pressure (CNEP) combined with HFO would be effective for treating acute respiratory failure in an animal model.

Methods: The effects of CNEP combined with HFO on pulmonary gas exchange and circulation were examined in a surfactant-depleted rabbit model. After induction of severe lung injury by repeated saline lung lavage, 18 adult white Japanese rabbits were randomly assigned to 3 groups:

Group 1, CNEP (extra thoracic negative pressure, -10 cmH₂O) with HFO (mean airway pressure (MAP), 10 cmH₂O);

Group 2, HFO (MAP, 10 cmH₂O); and

Group 3, HFO (MAP, 15 cmH₂O).

Physiological and blood gas data were compared among groups using analysis of variance.

Results: Group 1 showed significantly higher oxygenation than, Group 2 and the same oxygenation with significantly higher mean blood pressure compared to Group 3.

Conclusion: Adequate CNEP combined with HFO improves oxygenation with less impact on blood pressure than high-frequency oscillation alone in an animal model of respiratory failure