



High frequency percussive ventilation and low FiO₂.

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BACKGROUND: High-frequency percussive ventilation (HFPV) is an effective rescue therapy in ventilated patients with acute lung injury. High levels of inspired oxygen (FiO₂) are toxic to the lungs. The objective of this study was to review a low FiO₂ (0.25)/HFPV protocol as a protective strategy in burn patients receiving mechanical ventilation greater than 10 days.

METHODS: A single-center, retrospective study in burn patients between December 2002 and May 2005 at the LAC+USC Burn Center. Demographic and physiologic data were recorded from time of admission to extubation, 4 weeks, or death.

RESULTS: 32 subjects were included in this study, 1 patient failed the protocol. 23 of 32 (72%) patients were men and mean age was 46±15 years. Average TBSA burn was 30±20 with 9 of 32 (28%) having >40% TBSA involved. Average burn index was 76±21. 22 of 32 (69%) had inhalation injury and 23 of 32 (72%) had significant comorbidities. Average ventilator parameters included ventilator days 24±12, FiO₂ 0.28±0.03, PaO₂ 107±15 Torr, PaCO₂ 42±4 Torr, and PaO₂/FiO₂ ratio 395±69. 16 of 32 (50%) patients developed pneumonia and 9 of 32 (28%) died. No patient developed ARDS, barotrauma, or died from respiratory failure. There was no association between inhalation injury and mortality in this group of patients.

CONCLUSION: A low FiO₂/HFPV protocol is a safe and effective way to ventilate critically ill burn patients. Reducing the oxidative stress of high inspired oxygen levels may improve outcome.

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