

Reappraisal of continuous positive airway pressure therapy in acute cardiogenic pulmonary edema. Short-term results and long-term follow-up.

Lin M, Yang YF, Chiang HT, Chang MS, Chiang BN, Cheitlin MD.

Department of Emergency and Medicine, Veterans General Hospital-Kaohsiung, Taiwan, ROC.

To investigate whether serial incremental continuous positive airway pressure (CPAP) has any short-term or long-term advantages over face-mask oxygen therapy by way of intrapulmonary shunt reduction, 100 patients admitted to the coronary care unit for the treatment of acute cardiogenic pulmonary edema were studied. All patients received Swan-Ganz catheterization. Hemodynamic and pulmonary function parameters were recorded over the next 6 h, and the patients were followed until hospital discharge. All survivors received regular follow-up at 1-month intervals in the outpatient clinic. During the first-stage investigation period (3 h) PaO₂ in the CPAP group showed a significant increase, whereas the intrapulmonary shunt and alveolar-arterial oxygen tension gradient (P[A-a]O₂) was significantly reduced ($p < 0.005$). The CPAP group had significantly lower rate-pressure product and higher stroke volume index compared with the control group. The therapeutic failure rate over 6 h was 24% in the CPAP group and 50% in the control group ($p < 0.01$). The CPAP group had a significantly lower incidence of tracheal intubation and ventilator therapy than the control group; however, there was no significant difference in short-term mortality and hospital stay between the two groups. In conclusion, although study size was not large enough to demonstrate a difference in mortality, CPAP therapy resulted in physiologic cardiovascular and pulmonary function improvement and significantly reduced the need for intubation; however, it did not decrease mortality in patients with acute cardiogenic pulmonary edema, and a much larger study is needed to investigate this possibility.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial