

Prehospital use of continuous positive airway pressure (CPAP) for presumed pulmonary edema: a preliminary case series.

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OBJECTIVE: To describe the prehospital use of a continuous positive airway pressure (CPAP) system for the treatment of acute respiratory failure presumed to be due to cardiogenic pulmonary edema. **METHODS:** Prospective case-series analysis. Paramedics administered CPAP via face mask at 10 cm H₂O to patients believed to be in cardiogenic pulmonary edema and in imminent need of endotracheal intubation (ETI). Data from run sheets and hospital records were analyzed for treatment intervals, vital signs, complications, admitting diagnoses, need for ETI, and mortality. **RESULTS:** Nineteen patients received prehospital CPAP therapy. Mean duration of therapy was 15.5 minutes. Pre- and post-therapy pulse oximetry was available for 15 patients and demonstrated an increase from a mean of 83.3% to a mean of 95.4%. None of the patients were intubated in the field. Two patients who did not tolerate the CPAP mask required ETI upon arrival in the emergency department (ED); an additional five patients required ETI within 24 hours. There was one death in the series and two additional adverse events (one aspiration pneumonia, one pneumothorax); none of these were attributable to the use of CPAP. The diagnosis of cardiogenic pulmonary edema was corroborated by the ED or in-hospital physician in 13 patients (68%). Paramedics reported no technical difficulties with the CPAP system. **CONCLUSION:** For patients with acute respiratory failure and presumed pulmonary edema, the prehospital use of CPAP is feasible and may avert the need for ETI. Future controlled studies are needed to assess the utility and cost-effectiveness of prehospital CPAP systems.

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