Noninvasive Ventilatory Support for Acute Cardiogenic Pulmonary Edema: A Review

There is a large number of anecdotal reports and case series that purport to show an efficacious role for noninvasive ventilatory support (NIVS) as adjunctive therapy for acute cardiogenic pulmonary edema. These authors critically analyzed the literature on this subject from 1983 to 1997. Abstracts from relevant meetings were also included. Randomized trials that compared standard therapy (pharmacologic) to standard therapy plus continuous positive airway pressure (CPAP) or other NIVS and that measured outcomes in terms of hospital survival, requirement for endotracheal intubation, or effects on left ventricular function were deemed pertinent.

Only three of 497 relevant articles were randomized controlled trials. All used CPAP as the NIVS mode. CPAP was associated with a decreased need for intubation and a trend toward lower inhospital mortality. There were insufficient data to compare the efficacy of NIVS modes or to identify potential harmful effects of therapy, such as adverse hemodynamic consequences.

Comment: This remains a wide-open area of inquiry. Patients generally report lessened dyspnea when supported with CPAP or other NIVS, but it has been difficult to quantitively objectively. NIVS modes such as bi-level positive airway pressure should be prospectively evaluated in larger studies.

— CV Pollack

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CITATION(S):