

Noninvasive ventilation for acute exacerbations of chronic obstructive pulmonary disease.

Brochard L, Mancebo J, Wysocki M, Lofaso F, Conti G, Rauss A, Simonneau G, Benito S, Gasparetto A, Lemaire F, et al.

Medical Intensive Care Unit, Henri Mondor Hospital, Creteil, France.

BACKGROUND. In patients with acute exacerbations of chronic obstructive pulmonary disease, noninvasive ventilation may be used in an attempt to avoid endotracheal intubation and complications associated with mechanical ventilation. **METHODS.** We conducted a prospective, randomized study comparing noninvasive pressure-support ventilation delivered through a face mask with standard treatment in patients admitted to five intensive care units over a 15-month period. **RESULTS.** A total of 85 patients were recruited from a larger group of 275 patients with chronic obstructive pulmonary disease admitted to the intensive care units in the same period. A total of 42 were randomly assigned to standard therapy and 43 to noninvasive ventilation. The two groups had similar clinical characteristics on admission to the hospital. The use of noninvasive ventilation significantly reduced the need for endotracheal intubation (which was dictated by objective criteria): 11 of 43 patients (26 percent) in the noninvasive-ventilation group were intubated, as compared with 31 of 42 (74 percent) in the standard-treatment group ($P < 0.001$). In addition, the frequency of complications was significantly lower in the noninvasive-ventilation group (16 percent vs. 48 percent, $P = 0.001$), and the mean (\pm SD) hospital stay was significantly shorter for patients receiving noninvasive ventilation (23 \pm 17 days vs. 35 \pm 33 days, $P = 0.005$). The in-hospital mortality rate was also significantly reduced with noninvasive ventilation (4 of 43 patients, or 9 percent, in the noninvasive-ventilation group died in the hospital, as compared with 12 of 42, or 29 percent, in the standard-treatment group; $P = 0.02$). **CONCLUSIONS.** In selected patients with acute exacerbations of chronic obstructive pulmonary disease, noninvasive ventilation can reduce the need for endotracheal intubation, the length of the hospital stay, and the in-hospital mortality rate.

Publication Types:

- Clinical Trial
- Multicenter Study
- Randomized Controlled Trial