

FULL TEXT LINKS



Crit Care Med. 2007 Jan;35(1):18-25. doi: 10.1097/01.CCM.0000251821.44259.F3.

## A multiple-center survey on the use in clinical practice of noninvasive ventilation as a first-line intervention for acute respiratory distress syndrome

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PMID: 17133177 DOI: 10.1097/01.CCM.0000251821.44259.F3

### Abstract

**Objective:** In randomized studies of heterogeneous patients with hypoxemic acute respiratory failure, noninvasive positive pressure ventilation (NPPV) was associated with a significant reduction in endotracheal intubation. The role of NPPV in patients with acute respiratory distress syndrome (ARDS) is still unclear. The objective was to investigate the application of NPPV as a first-line intervention in patients with early ARDS, describing what happens in everyday clinical practice in centers having expertise with NPPV.

**Design:** Prospective, multiple-center cohort study.

**Setting:** Three European intensive care units having expertise with NPPV.

**Patients:** Between March 2002 and April 2004, 479 patients with ARDS were admitted to the intensive care units. Three hundred and thirty-two ARDS patients were already intubated, so 147 were eligible for the study.

**Interventions:** Application of NPPV.

**Measurements and main results:** NPPV improved gas exchange and avoided intubation in 79 patients (54%). Avoidance of intubation was associated with less ventilator-associated pneumonia (2% vs. 20%;  $p < .001$ ) and a lower intensive care unit mortality rate (6% vs. 53%;  $p < .001$ ). Intubation was more likely in patients who were older ( $p = .02$ ), had a higher Simplified Acute Physiology Score (SAPS) II ( $p < .001$ ), or needed a higher level of positive end-expiratory pressure ( $p = .03$ ) and pressure support ventilation ( $p = .02$ ). Only SAPS II  $> 34$  and a  $Pao_2/Fio_2 < \text{or} = 175$  after 1 hr of NPPV were independently associated with NPPV failure and need for endotracheal intubation.

**Conclusions:** In expert centers, NPPV applied as first-line intervention in ARDS avoided intubation in 54% of treated patients. A SAPS II  $> 34$  and the inability to improve  $Pao_2/Fio_2$  after 1 hr of NPPV were predictors of failure.

### Comment in

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Crit Care Med. 2007 Jan;35(1):288-90. doi: 10.1097/01.CCM.0000251637.35325.F5.

PMID: 17197766 Review. No abstract available.