

# Real life NIV use in ACPE: preliminary results of a multicentric study on the treatment of ACPE in the Emergency Department

## Authors

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## Background

Although NIV in ACPE is considered a safe and effective treatment in addition to medical therapy, no multicenter real life studies have analyzed the impact of NIV in ACPE. The objective of this study was to assess epidemiology, treatment and prognostic factors in consecutive patients admitted to the ED with ACPE.

## Methods

A real life multicentric prospective web-based observational study was performed in 12 Italian ED ([www.acpe.it](http://www.acpe.it)). ACPE was defined as: acute dyspnoea plus bilateral rales plus congestion on X-ray. Demographic, clinical and laboratory findings were collected for every patient until hospital discharge.

## Results

Since May 2009 to June 2010, 360 ACPE patients were enrolled (191 males, mean age  $80 \pm 10$  years, mean pH  $7.29 \pm 0.13$ ). 248 (69%) patients were treated with non-invasive CPAP or Bilevel; 111 patients were treated with oxygen-therapy (31%), one patient was intubated before arrival in the ED. Mortality was 7.2% (27/360). Among the 111 patients treated with oxygen, 32 were switched to NIV. Baseline data according to treatment are reported in Table 1.

## Conclusion

Up to 30% of ACPE patients are still treated with oxygen and among them 1 out of 4 is switched to NIV; thus, stronger efforts are needed to implement current guidelines on the use of NIV in ACPE.

**Tabella 1. Baseline characteristic of study population (mean $\pm$ DS)**

Parameter	Oxygen	NIV	p value
pH	7.34 $\pm$ 0.12	7.26 $\pm$ 0.12	<0.01
PaCO <sub>2</sub> , mmHg	47 $\pm$ 16	53 $\pm$ 17	<0.01
PiO <sub>2</sub> /FiO <sub>2</sub> ratio	200 $\pm$ 74	199 $\pm$ 91	0.92
MAP, mmHg	111 $\pm$ 24	118 $\pm$ 25	0.02
Respiratory rate	29 $\pm$ 7	34 $\pm$ 7	<0.01
Lactate, mmol/L	2.5 $\pm$ 2.7	3.3 $\pm$ 2.4	0.06
Endotracheal intubation	1/111 (0.9%)	3/248 (1.2%)	0.79
Mortality	8/111 (7.2%)	19/248 (7.7%)	0.88