

Characteristics and outcome of elderly patients admitted to the emergency department with acute pulmonary cardiogenic edema treated with NIV: a prospective study (ACPE study).

Authors

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Introduction

Acute cardiogenic pulmonary edema (ACPE) is a common cause of presentation in the Emergency Department (ED), particularly affecting the elderly population. Non-invasive-Ventilation (NIV) is a first line treatment. However, little is known on the subgroup of very elderly patients with ACPE treated with NIV, who carry many comorbidities and often are considered not-to-be-intubated.

Aim

The aim of our study was to better understand characteristics and outcome of elderly ACPE patients treated with Non-invasive-Ventilation (NIV) in the Emergency Department.

Methods

We conducted a prospective, observational, multicentric study on consecutive patients admitted to the ED with ACPE. Data were collected via web (www.acpe.it) from 12 Italian EDs. History, clinical and laboratory data were collected until hospital discharge.

Results

From May 2009 to June 2010, 248 patients were analysed. Mean age was 80 years (SD \pm 10 years), 129 male (52%). One third of the study population was older than 85 years (see figure 1). Clinical and laboratory data on admission are shown in table 1. No significant differences of baseline data between the two populations except for systolic blood pressure were observed. Overall in-hospital mortality was 7.7 % (19/248). Mortality in the elderly group was 13.6% (11/81), while in the other group was 4.8% (8/167) ($p < 0.05$) (see Figure 1).

Conclusion

A remarkable proportion of ACPE patients is represented by very elderly patients. This subgroup of patients carry a worse prognosis with around a 3fold higher in-hospital mortality rate. However, a mortality rate of 14% is comparable to one reported in the literature for the overall population with ACPE treated with NIV; therefore, NIV seems to be useful also in patients with who carry multiple comorbidities and often are considered not-to-be-intubated, such as the very elderly population.

Parameter	Age < 85	Age 85	p
pH	7.26 ± 0.12	7.27 ± 0.12	0.79
PaCO ₂ , mmHg	54 ± 17	51 ± 16	0.27
PiO ₂ /FiO ₂ ratio	194 ± 88	209 ± 96	0.25
HR	110 ± 21	110 ± 22	0.83
Respiratory rate	34 ± 7	33 ± 6	0.37
SBP	171 ± 37	161 ± 35	0.04

Table 1. Baseline characteristics of the two populations

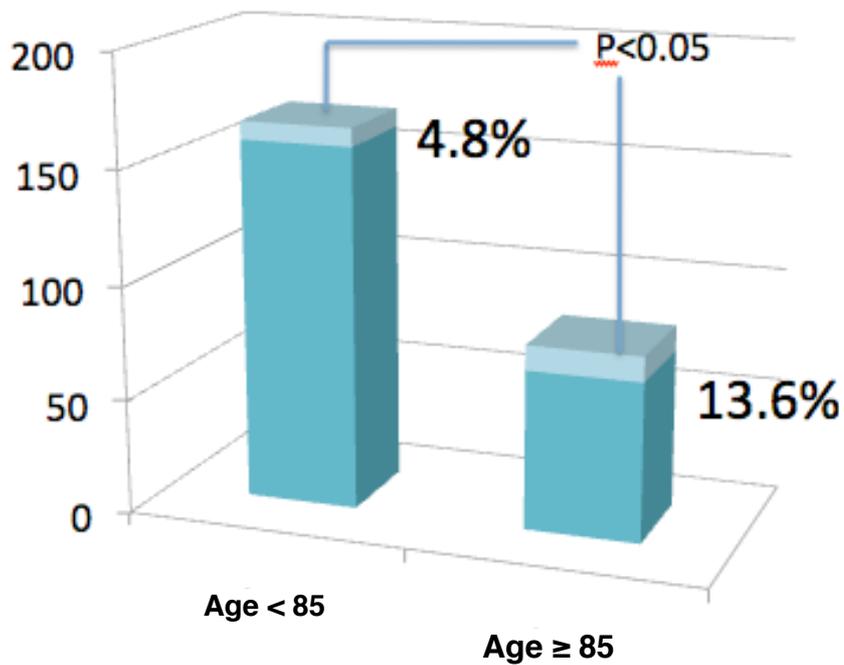


Figure 1. In-hospital mortality of the two populations