Abstract Group: 2.2. Noninvasive Ventilatory Support
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Title: Predictors of failure of noninvasive ventilation in acute cardiogenic pulmonary edema

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Body: Noninvasive ventilation (NIV) appears to be benefit in the immediate treatment of acute cardiogenic pulmonary edema (ACPE) as an adjunct to pharmacological therapy. Aims: Evaluate efficacy and identify predictors of failure of NIV, defined as need of intubation or death during hospitalization, in acute cardiogenic pulmonary edema. Methods: Observational study. Analyzed clinical and arterial blood gas data of 105 episodes of NIV with Philips Respironics® V60. Results: Included 100 patients, 51% male, mean age 76.2Y (±10.2). Co-morbid conditions present in 53% of success and in 68% of failure group. In most patients NIMV was started simultaneously with standard pharmacological therapy. NIV success in 75.2% (group 1) and failure in 24.8% (group 2). Mean pretreatment pH in success group 7,283 (minimum pH 7,01) vs 7,248 in failure group (p>0,05). Initial PaO2/FiO2 ratio was significantly lower in failure group (229,2±68,6 vs 189,6±64,8, p<0,05). There was no significant difference in age, baseline NT-proBNP, pH level and PaCO2 between failure and success group. Initial vital signs were also not significantly different between groups. Two hours after starting NIV pH level was significantly lower in failure group (7,32±68,6 vs 189,6±64,8, p<0,05) but there was no significant difference in PaCO2, PaO2/FiO2 ratio and vital signs. Mean time of NIV was 4,5±5,1 days. The average hospital stay was 14,7±15,8 days. One patient underwent invasive mechanical ventilation and the overall mortality was 23,8%. Conclusions: Iniicial PaO2/FiO2 and inadequate response in pH after two hours of NIV are factors associated with NIV failure. NIV has been applied successfully in ACPE with critical values of pH and hypercapnia.