







# The impact of arterial hypertension on the treatment outcomes in patients with chronic obstructive pulmonary disease undergoing two different non-invasive ventilation methods

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**Introduction:** In individuals with chronic obstructive pulmonary disease (COPD), evaluating the severity of hypercapnia and/or acidosis following the start of non-invasive ventilation (NIV) is a key predictor of NIV failure.<sup>1</sup> This study sought to investigate how arterial hypertension affects the treatment outcomes of patients admitted for COPD exacerbation.

**Patients and Methods:** This prospective study involved 80 patients who were divided into two groups of 40, based on the mode of non-invasive ventilation (NIV): CPAP (continuous positive airway pressure) and BiPAP (bilevel positive airway pressure). A 1:1 randomization approach was employed to determine the NIV mode for each patient. The research took place at the General Hospital "Prim. Dr Abdulah Nakaš" in Sarajevo and included patients admitted to the Non-surgical Intensive Care Unit with a history of chronic hypercapnic respiratory failure (HRF) related to one of the three COPD phenotypes.

**Results:** The average age of patients on BiPAP was  $66.6 \pm 8.6$ , while for CPAP it was also  $66.6 \pm 8.6$ . There were no significant differences in the use of ACE inhibitors, beta-blockers, diuretics, or vasodilators between the two patient groups. In the BiPAP group, the impact of arterial hypertension on the reduction of pCO<sub>2</sub> compared to admission was not observed. The chi-square test demonstrated that in the CPAP group, arterial hypertension did influence the reduction of pCO<sub>2</sub> compared to admission ( $p=0.019$ ).

**Conclusion:** Arterial hypertension significantly affects the efficacy of both NIV modalities concerning a single outcome – the reduction of pCO<sub>2</sub>. The absence of hypertension enhances the positive effect of BiPAP on lowering pCO<sub>2</sub>. In the BiPAP group, the influence of arterial hypertension on the reduction of pCO<sub>2</sub> compared to admission was not evident. In the CPAP group, arterial hypertension significantly correlated with a more frequent reduction of pCO<sub>2</sub> compared to patients without arterial hypertension.

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## LITERATURE

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