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Title: Effects of non invasive ventilation on left and right hemodynamic parameters during acute respiratory failure secondary to COPD exacerbation

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Body: Non Invasive Ventilation (NIV) is a technique used in different forms of acute respiratory failure that allows the patient to provide a full or partial ventilatory support without intubation. NIV has obvious effects on lung mechanics, but the changes that brings to the pulmonary vascular circulation, and to the right and left ventricle are more less investigated. Based on this assumption, we studied 32 patients (18 men, 14 women, mean age 72.0 ± 7.5 years) with respiratory failure secondary to COPD exacerbation who required NIV and we submitted to transthoracic echocardiography at the admission and at the resolution of respiratory failure. We have therefore shown that NIV not only has positive outcomes on right ventricular function (reduction of Pulmonary Insufficiency, Tricuspid Regurgitation, and four-chambers Right Ventricular Systolic and Diastolic Areas and short-axis Diameters with secondary improving of Tricuspid Annular Plane Systolic Excursion), but had a statistical positive effect also on left ventricular function (Ejection Fraction increase, $p < 0,05$). Minimizing the effect of ventricular interdependence and deflating the lung, NIV not only has positive results on right hemodynamic parameters but, increasing venous return to the left ventricle and recovering the stroke volume, also improves its performance.