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USE OF THE PRONE POSITION IN PATIENTS WITH EXACERBATED COPD AND REFRACTORY HYPOXEMIA: CASE REPORT

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INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a progressive respiratory condition characterized by persistent airflow limitation and associated with episodes of acute exacerbation, which can progress to hypoxemic and hypercapnic respiratory failure, representing a significant clinical challenge. In cases of hypoxemia refractory to conventional support, the prone position has been used as an adjunctive strategy to improve ventilation-perfusion ratio and oxygenation, although it is more frequently associated with the management of Acute Respiratory Distress Syndrome (ARDS).

OBJECTIVE

To report the case of a patient with exacerbated COPD, managed with prone positioning as an adjunctive intervention to mechanical ventilation.

CASE REPORT

Female patient, 59 years old, with no history of smoking or alcoholism, but with a history of exposure to secondhand smoke. A transthoracic echocardiogram (TTE) performed on January 24, 2023 showed a left ventricular ejection fraction (LVEF) of 60%, preserved systolic and diastolic function, slightly enlarged left atrium, mild tricuspid regurgitation, and estimated pulmonary artery systolic pressure (PASP) of 34 mmHg. She progressed to a very serious condition, presenting with severe dyspnea at 11 a.m., using a high-flow nasal catheter (HFNC) with FiO2 of 100%. Arterial blood gas analysis showed respiratory acidosis (pH 7.312 / pCO2: 53.5 mmHg), refractory to initial measures, requiring orotracheal intubation and initiation of mechanical ventilation. At 5:30 p.m., with a PaO2/FiO2 ratio < 150 and FiO2 > 60%, in addition to diffuse bilateral opacities on chest X-ray, prone positioning was indicated, characterizing ARDS. The patient was kept sedated with Midazolam and Fentanyl, neuromuscular blockade with Cisatracurium, in VCV ventilatory mode with FiO2 90%, respiratory rate of 18 bpm, PEEP of 5 cmH2O, and SpO2 of 92%. She was hemodynamically unstable, normocardic (HR 68 bpm), and hypertensive (BP 146x52 mmHg). Nutrition was provided via an orogastric tube, and elimination was via an indwelling urinary catheter. Physical examination revealed hypochromic skin, grade 2 pressure ulcer (PU) with blister in the sacral region, scabs on both breasts, globular and flaccid abdomen with hypoactive hydroaerial sounds, and 3+/4+ edema in the lower limbs.

FINAL CONSIDERATIONS

This case report highlights the use of the prone position as an adjunctive strategy in the ventilatory management of a patient with severe exacerbation of COPD, associated with diagnostic criteria for Acute Respiratory Distress Syndrome (ARDS). Although prone positioning is traditionally indicated for patients with ARDS, its use in individuals with severe COPD and refractory hypoxemia has proven to be a viable alternative for optimizing oxygenation, even in complex and unstable clinical conditions. This case reinforces the importance of an individualized approach and the judicious use of advanced interventions in patients with severe respiratory failure, especially in contexts where conventional therapies prove insufficient.

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