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Researches Classified – Panel Awards - Clinical

Factors associated to vascular pedicle width in ARDS

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Introduction: In previous studies, vascular pedicle width (VPW) was the best radiographic sign of intravascular volume status in critically ill patients and may enhance implementation and acceptance of the conservative fluid strategy into routine clinical practice.

Objective: Our aim was to find the relationship among VPW and parameters of mechanical ventilation (MV) and baseline data. The hypothesis was that pressures, tidal volume and baseline data, as age, could be related to VPW in acute respiratory distress syndrome (ARDS).

Methodology: It was a retrospective cohort study enrolled in the Open Lung Approach trial performed in moderate-severe acute respiratory distress syndrome recruited in São Paulo, Brazil. VPW was measured by two investigators in chest radiographs taken at diagnosis and after 24 hours of mechanical ventilation adjustments. The relationship between VPW, age, predicted body weight (PBW), positive end-expiratory pressure (PEEP), plateau pressure and tidal volume adjusted by PBW were evaluated. Results: 26 patients were included in analysis, with a total of 52 chest radiography analyzed. There was a significant change in VPW between diagnosis and after 24hours from MV adjustments ($r = 0.64$, $p < 0.01$). Age was related to VPW before and after adjustments in MV ($r = 0.57$, $p < 0.01$). No correlation was found between MV parameters (PEEP, plateau pressure and tidal volume) with VPW.

Conclusions: There was no correlation among pressures and tidal volume applied during MV and PDW, reinforcing this method as an easy, wide available and noninvasive way to estimate intravascular volume status in ARDS patients. Age was related to VPW, suggesting that the measure of VPW could be improved after correction based in this parameter.

Keywords: Acute respiratory distress syndrome; Vascular pedicle width; Mechanical ventilation.