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RIGHT VENTRICULAR FUNCTION ACROSS DIFFERENT RESPIRATORY SUPPORT STRATEGIES IN SEVERE COMMUNITY-ACQUIRED PNEUMONIA

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Introduction. Severe community-acquired pneumonia (CAP) often causes acute respiratory failure. The right ventricle (RV) is sensitive to increases in pulmonary vascular resistance from hypoxemia, hypercapnia and acidosis. Non-invasive respiratory support may add positive pressure and raise RV afterload. We evaluated, in PSI IV–V CAP, (1) the association between oxygenation modality—non- invasive ventilation (NIV), high-flow nasal cannula (HFNC), Venturi Mask—and RV systolic function by tricuspid annular plane systolic excursion (TAPSE) and lateral systolic velocity (TDI); (2) the relationship with length of stay (LOS).

Materials and Methods. Monocentric observational study in an Internal Medicine Unit. Consecutive severe CAP were enrolled; we excluded conditions independently altering RV load. NIV was pressure-support with PEEP; HFNC used high flow and FiO2; Venturi Mask delivered oxygen without positive pressure.

Results. Seventy patients: NIV 21, HFNC 22, Venturi Mask 27. RV performance differed across groups (Kruskal–Wallis $p<0.001$). NIV had the lowest TAPSE/TDI, Venturi Mask preserved mechanics. LOS was longer with NIV and HFNC than Venturi Mask ($p<0.001$). TAPSE and TDI inversely correlated with LOS.

Conclusions. In severe CAP, respiratory strategy influences RV systolic function and hospitalization. Early RV-focused echocardiography may support hemodynamically protective oxygenation choices in Internal Medicine.