A77 - Right ventricular dysfunction is associated with mortality in patients with pneumonia admitted to intensive care

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Introduction:
In patients with pneumonia requiring intensive care (ICU) admission, we hypothesise that abnormal right ventricular (RV) function is associated with an increased 90-day mortality. RV dysfunction in critically ill patients has a well-known association with adverse outcomes [1]. However, its impact on mortality in patients with pneumonia has not been directly studied.

Methods:
Patients admitted to the Queen Elizabeth Hospital Birmingham ICU between April 2016 and July 2019 with a diagnosis of pneumonia who had a formal cardiologist TTE were included. Abnormal RV function was defined by either depressed function, dilated size or moderate to severe risk of pulmonary hypertension (pHTN). Abnormal LV function was defined by an LV ejection fraction £ 45% or grade II or more diastolic dysfunction. Patients with a clinical suspicion of pulmonary embolism were excluded. The primary outcome was 90-day mortality. Continuous data is presented as median (IQR). Categorical data is presented as % and analysed using a chi-squared test.

Results:
942 patients were admitted to ICU with pneumonia, of which 347 (37%) had a TTE. Patients were 59% male, had a median age of 67 (46-88) and 90-day mortality of 31%. Abnormal RV function was present in 30% (n=103), with 15% depressed, 15% dilated and 14% with moderate to severe risk of pHTN. RV dysfunction was associated with an increased 90-day mortality compared to normal RV patients (62% vs. 18%, p<0.0001). LV function was abnormal in 25% (n=88) and was not associated with a higher 90-day mortality compared to normal LV patients (38% vs 29%, p = 0.20). RV dysfunction was associated with a higher 90-day mortality than LV dysfunction (62% vs 38%, p = 0.001).

Conclusion:
This is one of the first studies to demonstrate that abnormal RV function is associated with an increased mortality in ICU patients with pneumonia. Interestingly, abnormal LV function was not associated with an increased mortality.

References: