

**P142 A COMPARISON OF THE SIMPLIFIED PULMONARY EMBOLISM SEVERITY INDEX WITH THE EUROPEAN SOCIETY OF CARDIOLOGY SEVERITY SCORE FOR ACUTE PE**

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**Introduction** Risk stratification in acute pulmonary embolism (PE) is useful in identifying low risk patients suitable for ambulatory care and those at high risk in need of intensive monitoring.

In this study we compared two of the most well used scoring systems, the European Society of Cardiology (ESC) criteria and the simplified pulmonary embolism severity index (sPESI).

**Methods** We retrospectively identified patients admitted to NHS Tayside over a 4 year period with radiologically confirmed PE and calculated their ESC and sPESI scores.

RV dysfunction was defined by RV/LV ratio >1 on CTPA or by echocardiography. As per the ECS criteria, patients with shock (defined as SBP<90mmHg) and RV dysfunction or myocardial injury (defined as troponin I >0.045) were classified as high risk, RV dysfunction or myocardial injury without shock as intermediate risk and patients with none of the above criteria classified as low risk.

**Patients** with any one of the six sPESI risk factors (age>80, cancer, chronic lung disease, SpO<sub>2</sub> <90%, SBP<90mmHg, HR>110) were classified as high risk.

The primary outcome was 30-day mortality or requirement for thrombolysis.

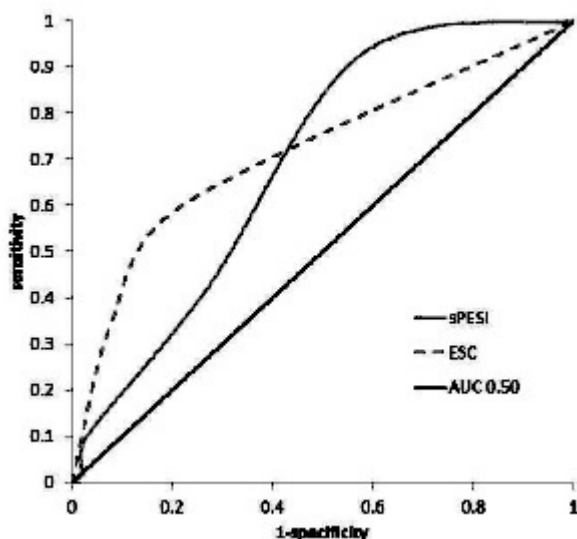
**Results** 291 patients (45.8% male) were identified with a median age of 67 years (interquartile range 54–78 years).

Low risk sPESI patients had a 2.2% risk of mortality or requirement for thrombolysis, in high risk patients (1 or more risk factors) the rate was 15.2%. Using ESC criteria, low risk patients had a 7.0% risk or mortality or thrombolysis with high risk patients having a risk of 21.2%.

The positive likelihood ratio for ESC was 2.2 vs 1.6 for sPESI. The negative likelihood ratio was 0.18 for sPESI compared to 0.7 for ESC.

The area under the receiver operator characteristic curves for both scores is shown in Figure 1. Both had moderate overall predictive value (AUC 0.68, 95% CI 0.63–0.73) for both scores,  $p<0.0001$ .

**Conclusion** The sPESI score is superior to the ESC score in identifying patients with acute PE who are at low risk of poor outcome, while ESC is superior to sPESI at identifying high risk patients.



Abstract P142 Figure 1

**P143 A RETROSPECTIVE STUDY OF ECHOCARDIOGRAPHY AND FOLLOW-UP AFTER ACUTE PULMONARY EMBOLISM – ARE WE MISSING CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION?**

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**Introduction** Pulmonary Hypertension (PH) is defined as raised Pulmonary Arterial Systolic Pressure  $\geq 25$ mmHg at rest on Right Heart Catheterisation.<sup>1</sup> Chronic Thromboembolic Pulmonary Hypertension (CTEPH) is a recognised complication of pulmonary embolism (PE), with a reported annual cumulative incidence of 3.1%.<sup>2</sup> Patients with evidence of PH or Right Ventricular Dysfunction (RVD) during admission should be referred for echocardiography usually 3–6 months after discharge to establish PH resolution.<sup>1</sup>

**Objective** To identify patients at risk of CTEPH, evaluate their follow-up plans and establish the proportion with evidence of acute RVD/PH who are investigated for persistent PH.

**Methods** Retrospective analysis of all diagnoses of PE on Computed Tomography Pulmonary Angiography (CTPA) in 2010 in a single Trust. Patients were stratified according to size and location of PE, and any reported radiological evidence of RVD. Echocardiography reports were reviewed for evidence of PH.

**Results** 19.3%(329/1702) of CTPA scans revealed PE: Massive (28.6%); Submassive (28.0%); Peripheral (44.4%). Only 17.6%(58/329) had inpatient echocardiography, with 55.1%(32/58) suggesting PH (PASP  $\geq 36$  mmHg). 78.1%(25/32) of these patients survived to 6 months and follow-up echocardiography was performed within 6 months for 40%(10/25) of this subset.

Overall, 80.9% (266/329) of patients with confirmed PE survived past 6 months. Follow-up echocardiogram was performed within 6 months on 20.3% (54/266) of survivors; PH was demonstrated in 18.5%(10/54).

RV strain was reported in 15.2% (50/329) of CTPA scans. Follow-up echocardiogram was performed within 6 months on 19.5% (8/41) of those alive at 6 months.

84.2%(154/183) of individuals diagnosed with a massive or submassive PE survived to 6 months. Respiratory or cardiology follow-up was planned for 23% (36/154).

**Conclusions** Our findings suggest follow-up after acute PE is sub-optimal, potentially missing early PH due to a low number of early echocardiograms. The relatively high percentage of PH on echocardiography compared to reported rates is likely due to selection bias. The results suggest there may be a missed cohort at risk of developing PH, i.e. those with RV strain on CTPA or high thrombus load, being denied early or more aggressive interventions such as pulmonary endarterectomy.

**References**

1. Galié et al. *EurRespirJ* 2009; **34**:1219–63.
2. Pengo et al. *NEJM* 2004; **350**:2257–64.

**P144 CASE SERIES: CHOOSING THROMBOLYSIS IN ACUTE PULMONARY EMBOLISM (PE) – MASSIVENESS OR INSTABILITY?**

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**Background** PE has significant mortality risk particularly in “PE with haemodynamic instability” or “massive PE” where blood pressure, attributable to PE, is sustained below 90mmHg.<sup>[1,2]</sup> Thrombolysis in this patient group is associated with reduced mortality and faster restoration of lung perfusion with approval by NICE<sup>[1,2]</sup> Another important group of patients with apparent haemodynamic stability but documented right ventricular (RV) compromise or