

## High-risk acute pulmonary embolism in a Portuguese centre: are we doing enough?

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**Introduction:** For high-risk acute Pulmonary Embolism patients (HR-PE pts), reperfusion treatment is imperative to improve mortality. Although systemic thrombolysis (ST) is generally an appropriate first-line therapy, several population-based studies report its underuse. Data on epidemiology, management and outcomes of HR-PE in Portugal is scarce.

**Purpose:** Estimate the reperfusion rate in HR-PE pts, the reasons for non-reperfusion (NR) and how it influences outcomes.

**Methods:** Retrospective single-centre registry of consecutive HR-PE pts between 2008–2018, defined by the 2019 ESC guidelines criteria. Independent predictors for NR were assessed by multivariate logistic regression. The cumulative incidence of PE-related mortality at 30 days was calculated according to the Kaplan-Meier method and differences stratified by reperfusion were assessed using the log-rank test.

**Results:** Of a total of 1955 pts admitted with acute PE, 74 (3.8%) had HD instability at admission (mean age  $68 \pm 15$  years). The majority of pts (68.5%) came from the emergency department while the remaining 31.5% were already hospitalized for other reasons. The total reperfusion rate was 50% - 35pts were submitted to systemic thrombolysis, 1pt to first-line percutaneous embolectomy and 1pt to rescue endovascular treatment.

Age was an independent predictor of NR ( $63 \pm 17$  vs  $73 \pm 12$ ,  $p=0.02$ ) with  $>75$  years representing 15 times the risk of non-treatment (OR 15.5, 95% CI 3.23–74.25,  $p<0.001$ ). Absolute contraindication for thrombolysis was present in 29.7% (22pts), with recent major surgery (13pts) and recent cerebral event (8pts) as the most common reasons. The presence of an absolute contraindication for systemic thrombolysis was also an independent predictor of NR (66.7% vs 13.6%; OR 13.3, 95% CI 2.51–70.65,  $p=0.002$ ). Being hospitalized was associated with the presence of absolute contraindications for thrombolysis (68.2% vs 14.0%,  $p<0.001$ ) and was also an independent predictor of NR (38% vs 77.3%; OR 8.49, 95% CI 1.56–46.11,  $p=0.013$ ). PE-related death at 30 days was 28.4% (21pts), which was significantly lower in the reperfusion group (17.1% vs 38.9%,  $p=0.042$ ). At a mean follow-up of  $2.5 \pm 3.3$  years, survival rate was 33.8% (figure 1).

**Conclusions:** Low reperfusion rate due to contraindications for thrombolysis was associated with high PE-related mortality. This data suggests that it is necessary to implement interventional alternative strategies, at a national level, to improve outcomes.

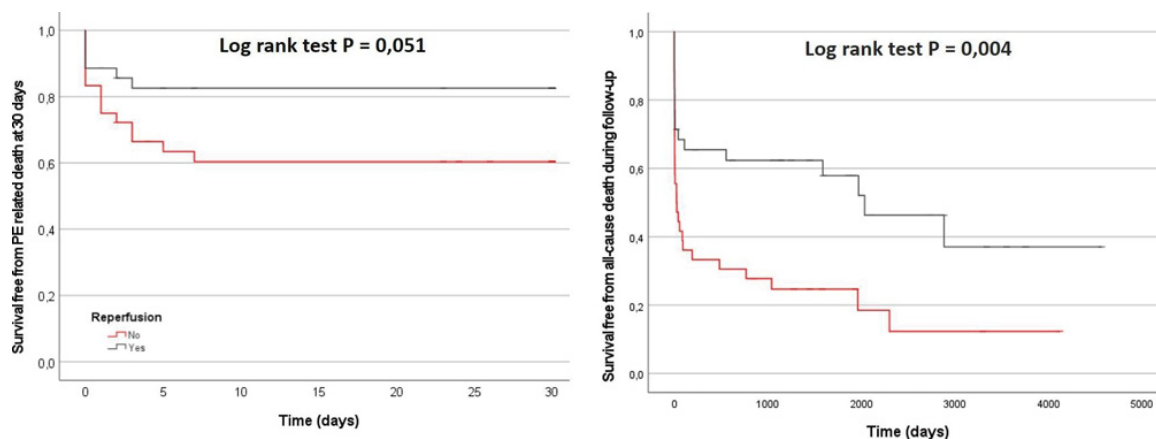


Figure 1. Survival rate according to reperfusion.