

# Navigating the Controversy of Thrombolysis in Intermediate-Risk Pulmonary Embolism: A Case Study

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## INTRODUCTION

Intermediate-risk pulmonary embolism (PE) involves hemodynamically stable patients with right ventricular (RV) dysfunction. Based on PESI Class III–IV and troponin levels, it is classified as intermediate-high (elevated troponin) or intermediate-low (normal troponin). About 9.6%–10% of normotensive PE patients are intermediate-high risk, with a 30-day mortality rate of 7%–10%, mostly due to PE.

## CASE DESCRIPTION

A 73-year-old woman with diabetes, hypertension, ischaemic stroke, and previously treated provoked left lower limb deep vein thrombosis (DVT) presented with lethargy and 3 days of recurrent left leg pain (calf to thigh). She was alert but tachypnoeic, and hypoxic, requiring high-flow nasal cannula (HFNC). Vital signs: BP 132/89 mmHg, HR 112 bpm. Respiratory examination revealed minimal crepitations, and she also reported tenderness in the left calf. Bedside ultrasound revealed non-compressibility of the left popliteal and femoral veins, suggestive of recurrent DVT. Bedside echocardiography showed signs of right heart strain, including a dilated right ventricle and interventricular septal flattening, with preserved cardiac contractility. CT pulmonary angiography revealed a large acute right-sided pulmonary embolism (PE) with pulmonary infarction in the right middle lobe and signs of right heart strain. Troponin was positive. Thrombolysis with non-accelerated dose of streptokinase was initiated in the Emergency Department. The patient was admitted for 10 days, remained hemodynamically stable throughout the hospital stay, and was discharged in good condition.

## DISCUSSION

RV outflow obstruction, elevated RV pressure, hypoxic vasoconstriction, and decreased cardiac output all contribute to right heart strain and RV ischemia. This creates a vicious cycle, leading to hypotension and severe respiratory failure. The European Society of Cardiology (ESC) guidelines emphasize the importance of early thrombolysis before the patient progresses to shock. Trials such as the MOPET and PEITHO studies have shown that thrombolysis can reduce pulmonary hypertension and help preserve cardiopulmonary function, but they still do not demonstrate a clear benefit in terms of short-term mortality.

## CONCLUSION

The decision to initiate thrombolysis with streptokinase in this case remains highly controversial. Thrombolysis was able to stabilize the patient's condition and prevent further deterioration, with no signs or symptoms of bleeding observed.

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