# Evaluating the Safety of Intermediate Care Unit Monitoring for Patients with Intermediate-High Risk Pulmonary Embolism Following Aspiration Thrombectomy

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## BACKGROUND

- Pulmonary embolism (PE) represents the third leading cause of cardiovascular mortality in the United States [1].
- Intermediate-high risk pulmonary embolism (PE) is associated with a significant 30-day mortality rate of 9.1% when managed with medical therapies alone. Consequently, the initial treatment for these patients is typically conducted in the intensive care unit (ICU).
- Novel aspiration thrombectomy devices can rapidly stabilize patients' hemodynamic parameters, improve oxygenation, and reduce thrombus burden in the pulmonary tree.
- It remains uncertain whether advancements in PE treatment can enable safe monitoring in an intermediate care unit (IMCU) setting.

## AIM of the STUDY

- Our purpose of the study was to evaluate the safety of intermediate care unit monitoring for patients with intermediate-high risk pulmonary embolism who underwent aspiration thrombectomy.

## CONFLICTS of INTEREST

- No authors report conflict of interest pertinent to the context of the abstract.

## METHODS

- All patients with acute intermediate-high risk PE who were treated with aspiration thrombectomy from October 2022 to October 2024 were identified.
- Both mechanical and manual aspiration thrombectomy devices were utilized.
- Patients deemed stable at the conclusion of the procedure in the catheterization laboratory were admitted to the IMCU at the operator's discretion.

## RESULTS

- During the study period, from October 2022 to October 2024:
- Total of 42 patients with acute intermediate-high risk pulmonary embolism (PE) were treated with aspiration thrombectomy and admitted to the IMCU
- The in-hospital mortality rate was 2.3% (1/42)
- All patients who were contacted after discharge (66% - 27/41) were alive at the 30-day follow-up

## DISCUSSION

- Existing validated risk stratification tools such as the PE Severity Index Score or *PESI Score* have enabled the rapid identification of patients with low versus high-risk of mortality due to PE.

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## DISCUSSION

- Intermediate-high risk PE is defined as pulmonary embolism with hemodynamic instability, evidence of right ventricular dysfunction and elevated cardiac biomarkers [2].
- Patients with intermediate-risk PE account for 35% to 55% of hospitalized patients presenting with PE and have an associated mortality rate of 5% to 24% [1,3].
- The therapeutic management of intermediate-high risk pulmonary embolism in the acute setting is challenging and requires a close monitoring of hemodynamics in the MICU or IMCU units.
- Management of the intermediate-high risk PE includes systemic anticoagulation and mechanical or aspirational thrombectomy.

## CONCLUSIONS

- Aspiration thrombectomy for patients with acute intermediate-high risk pulmonary embolism facilitates rapid improvement in overall patient status and enables safe monitoring in the IMCU.
- This approach demonstrates excellent in-hospital and intermediate-term outcomes, reducing hospital stay costs and optimizing the use of limited resources for critically ill patients.

## REFERENCES

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