



Aspiration embolectomy for pulmonary embolism: lessons learned in 2 years

 **Marin Pavlov***,
 **Tomislava Bodrožić
Džakić Poljak**,
 **Aleksandar Blivajs**,
 **Šime Manola**

Dubrava University Hospital,
Zagreb, Croatia

KEYWORDS: pulmonary embolism, aspiration embolectomy.

CITATION: *Cardiol Croat.* 2024;19(11-12):482. | <https://doi.org/10.15836/ccar2024.482>

***ADDRESS FOR CORRESPONDENCE:** Marin Pavlov, Klinička bolnica Dubrava, Avenija Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-99-2360-286 / E-mail: marin.pavlov@gmail.com

ORCID: Marin Pavlov, <https://orcid.org/0000-0003-3962-2774>

Tomislava Bodrožić Džakić Poljak, <https://orcid.org/0000-0002-7293-3972>

Aleksandar Blivajs, <https://orcid.org/0000-0003-3404-3837> • Šime Manola, <https://orcid.org/0000-0001-6444-2674>

Goal: To evaluate data on patients treated with aspiration embolectomy (AE) for acute pulmonary embolism (PE) in Dubrava University Hospital from March 2022 until September 2024.

Patients and Methods: All patients listed in a prospective AE registry were eligible for the analysis. Patients with biomarker positive acute PE and signs of right ventricle strain (intermediate-high risk PE¹) were admitted in Intensive Care Unit and observed for 24-48 h. Patients with high-risk PE and contraindication for lytic therapy were also considered. Unfractionated heparin was the treatment of choice. Clinical and echocardiographic controls ensued. Patients that remained symptomatic (hypoxia, tachycardia, dyspnea or with deterioration and no other contributing condition) were discussed among Pulmonary Embolism Response Team (PERT) for interventional treatment. Intervention was performed in catheterization laboratory by experienced interventional cardiologists.

Results: Total of 37 patients in 38 procedures were treated with aspiration embolectomy (35.1% females, aged 68 (57-76)). In one case, in addition to PE, a thrombus in transit was an indication for the procedure. A total of 4 patients were treated due to high-risk PE. On one occasion Indigo Penumbra system was used, in other instances Inari Flowtriever was used. Malignancy was present in 8.3% of the patients, history of thromboembolism in 25.0%, concomitants deep vein thrombosis in 80.0%. Initial N-terminal pro B-type natriuretic peptide levels were 5011 (1560-7863) pg/mL and high sensitivity troponin I 545 (146-569) ng/L. Sheathless approach was used in 36.8% with two instances of access site thrombus strangulation requiring access site change. One patient (a thrombus in transit case) experienced cardiovascular collapse requiring resuscitation and mechanical circulatory support. All patients survived the procedure and initial periprocedural period. None of the intermediate-high risk patients died during follow-up. All of the high-risk PE patients died during follow-up, none due to PE.

Conclusion: In highly selected PE patients, AE provides effective treatment for symptom relief, hemodynamic and oxygenation improvement. Learning curve for the procedure is acceptable, particularly within the teams accustomed to large bore interventions.

RECEIVED:
October 13, 2024

ACCEPTED:
October 31, 2024



LITERATURE

1. Konstantinides SV, Meyer G, Becattini C, Bueno H, Geersing GJ, Harjola VP, et al; ESC Scientific Document Group. 2019 ESC Guidelines for the diagnosis and management of acute pulmonary embolism developed in collaboration with the European Respiratory Society (ERS). *Eur Heart J.* 2020 Jan 21;41(4):543-603. <https://doi.org/10.1093/eurheartj/ehz405>