

# The interventional treatment of intermediate-to-high risk acute pulmonary embolism at University Hospital of Split: current experiences and future directions

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**Introduction:** Catheter-based strategies should be considered in all cases of intermediate-to-high risk acute pulmonary embolism (PE) in whom systemic thrombolysis has failed or is contraindicated and in patients with PE who experience hemodynamic deterioration despite receiving full therapeutic systemic anticoagulation.<sup>1,2</sup>

**Patients and Methods:** We first show data on 27 consecutive patients that were treated with catheter-directed thrombolysis (CDT) via transcutaneous venous access and customized local protocol of 30 mg total alteplase delivered locally. We also report on our initial experiences with a dedicated percutaneous mechanical thrombectomy (PMT) system (INARI FlowTrieve®) that we used in 5 consecutive patients via transfemoral route.

**Results:** The mean age of 27 patients with PE treated with CDT was 60.6 years and 48% were female. Procedural success was achieved in all patients (100%) while mean pulmonary artery pressure (mPAP), Shock Index, and Miller obstruction score decreased significantly from before to after the CDT intervention ( $p < 0.001$  for all endpoints), as follows: 36 to 21 mmHg, 1.01 to 0.66, and 25.7 to 11.8, respectively. Bleeding complications occurred in 2 out of 27 patients (7.4%); out of these, only one event required a transfusion of 1 unit of packed RBCs. Access site complications and death events were not observed. The mean age of the PMT-treated cohort was 57.4 years, three were male and two were female. Complete procedural success was achieved in 4/5 patients with 1 patient having partial procedural success, however, this patient had chronic thromboembolic pulmonary hypertension. A significant reduction of mPAP was achieved in all patients ( $p < 0.001$ ), with a mean value of 34 mmHg before the procedure and 15 mmHg after the procedure (average 45% reduction). In two cases, the temporary "lollipop effect" was observed during the procedure meaning that the thrombotic mass was too large to enter the catheter lumen via suction. No deaths, bleeding events, or procedural complications associated with PMT were observed.

**Conclusion:** Both CDT and PMT were effective, safe, and complementary interventional options to treat patients with intermediate-to-high-risk acute PE with contraindications to or failure of systemic thrombolysis.

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## LITERATURE

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