

Title: Utilization of EKOS in patients with pulmonary embolism

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Introduction: Current guidelines recommend utilization of ultrasound-assisted, catheter-directed thrombolysis as a treatment for patients with acute sub-massive or massive pulmonary embolism (PE) who cannot receive systemic thrombolytic therapy.

Methods: This single-center, retrospective study evaluated patients ≥ 18 years of age with an acute sub-massive or massive PE and a baseline RV/LV diameter ratio ≥ 1 . The primary outcome evaluated change in RV/LV diameter ratio from baseline to time of follow-up. The secondary outcomes evaluated need for further intervention after EKOS, major bleeding within 72 hours and 6 months after initiation of EKOS, all-cause mortality at discharge, and all-cause 30-day readmission rate.

Results: Overall, 41 patients received EKOS for management of sub-massive PE. Of the 26 patients evaluated for the primary outcome, the RV/LV diameter ratio decreased by an average of 0.56 ($P < 0.05$). Of the 41 patients evaluated for the secondary outcomes, one patient required thrombectomy after EKOS intervention, one major bleed occurred within 72 hours, one major bleed occurred within 6 months, all patients survived to discharge, and three patients were readmitted within 30 days.

Conclusions: EKOS intervention reduced right heart strain and resulted in few complications providing evidence that EKOS is effective and safe long-term for management of sub-massive PE. Use should be considered in patients who cannot receive systemic thrombolytic therapy.