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| **Is Catheter Directed Thrombolysis safe and effective when initial therapy for Pulmonary Embolism fails? Outcomes from use of Catheter Directed Thrombolysis for rescue reperfusion.** |
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| **Introduction:** Initial treatment either with anticoagulation alone or in conjunction with systemic thrombolysis may be unsuccessful in intermediate/high-risk or high-risk pulmonary embolism (PE). Limited evidence exists regarding the role of catheter-directed treatment (CDT) as rescue reperfusion therapy (RRT) following failed initial therapy with anticoagulation±systemic thrombolysis. The Westmead Hospital Pulmonary Embolism Response Team (PERT) has utilised CDT as RRT for clinical deterioration as defined by decline in vital signs, severity of right ventricular (RV) dysfunction, tissue perfusion, and gas exchange.**Aim:**To review clinical characteristics and outcomes of RRT instituted via the PERT model in patients with unsuccessful initial treatment.**Methods:** Retrospective chart review of patients who received RRT (CDT) from August 2018-December 2022, following failed initial anticoagulation (intermediate/high-risk PE) or systemic thrombolysis (high-risk PE). Patients were risk-stratified as high, intermediate or low-risk. We assessed RV:LV ratio before and after RRT, 7 and 30-day mortality, treatment complications, and length of intensive care stay. Data are presented as mean±SD.**Results:** 18 patients, age 50±16.1 years; 12 females (67%); BMI 31±6.3kg/m2. PE Severity Index was 1.8±0.9, with 5 (38%) high-risk and 13 (72%) intermediate/high-risk PE. 6 patients (55%) had simultaneous deep venous thrombosis. Initial treatment included therapeutic anticoagulation alone for intermediate/high-risk PE (n=11) or systemic thrombolysis (high-risk PE; n=7). All patients reviewed had RRT for clinical deterioration following PERT consensus. ICU/HDU length of stay was 7±7.3 days (range 0-28). RV:LV ratio decreased following RRT in 14 of 18 patients (mean reduction -0.39; 95%CI:-0.65 to -0.12; p=0.006; paired t-test) from 1.7±0.4 (pre-RRT) to 1.3±0.3 (post-RRT). There was one death (5.5%) due to high-risk PE-related haemodynamic collapse. Complications of RRT were minor CDT insertion site bleeding (n=2), and minor pulmonary haemorrhage identified on repeat CTPA (n=1). **Conclusion:**RRT using CDT is a highly effective, relatively safe rescue intervention when initial PE therapy is unsuccessful. **Grant Support:** None. |