A Comparative Analysis of Re-thrombosis Rates in Acute Lower Limb Ischemia Patients Undergoing Percutaneous Mechanical Thrombectomy vs. Open Thrombectomy

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Background: Patients presenting with acute or acute-on-chronic lower limb ischemia often have limited time before viable tissue becomes ischemic. There are several treatment options for acute and subacute ischemia of the lower extremity including local thrombolysis, surgical thrombectomy and percutaneous thrombectomy. While local thrombolysis and surgical thrombectomy approaches have remained relatively unchanged for decades, percutaneous thrombectomy is a constantly evolving modality attributable to the improvements in endovascular technology, yet safety and efficacy of this approach are not well-established. Additionally, patients with Rutherford Classifications of IIb and III are at an increased risk of permanent deficits and/or amputation. Other comorbidities, including obesity, smoking, previous vascular interventions, hypercoagulable state, HLD, and HTN can often lead to a poorer prognosis. The aim of this work is to compare long-term outcomes such as amputation free survival following open versus endovascular thrombectomy within the limb threatening ischemia cohort.

Project Methods: This retrospective cohort study analyzed patients who underwent either percutaneous mechanical thrombectomy or open thrombectomy for acute lower limb ischemia. We identified comorbidities that may impact the complexities of their treatment and utilized the Charlson Comorbidity Index as well as the Rutherford Classification of Ischemia to help further categorize patients both by their risk of 10-year mortality and severity of their limb ischemia. Pertinent long-term factors that were assessed include whether the patients underwent arterial reintervention, amputation, and ambulatory status

Results: Peri-operative mortality and ipsilateral tissue loss were significantly lower in patients who underwent endovascular intervention. The patency of repair was significantly higher for those who underwent endovascular repair. Percutaneous mechanical thrombectomy leads to shorter recovery times, patients being able to become ambulatory sooner, shorter hospital visits, and lower rates of complications.

Potential Impact: This data can help establish the safety and efficacy of a newer surgical approach in percutaneous thrombectomy which has the ability to ease long term recovery

following intense procedures of peripheral vascular disease and has the ability to reduce rates of complication in this patient population.