

Delays to Surgery Increase Mortality and Limb Loss in Patients with Acute Limb Ischemia Treated with Open Thrombectomy

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Introduction

- Acute limb ischemia (ALI) is a life- and limb-threatening insult that requires immediate intervention.
- Despite advances in endovascular therapies, open surgical thrombectomy remains the gold standard procedure with the goal of limb preservation.
- Prior studies have documented the rates of in-hospital amputation and mortality following an episode of acute limb ischemia.
- However, the impact of patient factors and time to operative intervention on short- and long-term outcomes remains unclear

Research Aim

We sought to assess the impact of patient factors and procedural timing on early and long-term amputation and mortality rates following open thrombectomy.

Methods

Population: Patients undergoing open thrombectomy for ALI in the BMC2 Vascular Surgery Regional Collaborative between 2018 and 2021.

Acute Limb Ischemia: Defined as an urgent or emergent clinical scenario whereby an intervention is necessary to prevent limb loss.

Analysis: Baseline characteristics, time from hospital arrival to intervention, 30-day and 1-year amputation and mortality rates were analyzed independently and as a composite outcome.

Results

Total Patients: 954
Hospital Arrival to Incision: 4-22 hours (IQR)

Age, yrs (IQR)	55 - 77
Male Gender	53.7% (512)
White Race	79.6% (759)
Active Smoker	44.4% (424)
Coronary Artery Disease	34.8% (332)
Diabetes Mellitus	31.9% (304)

Table 1: Patient Characteristics
(%, No.)

Aspirin	48.5% (463)
Beta Blocker	46.7% (445)
Statin	56.3% (537)
Clopidogrel	17.3% (165)
DOAC	17.3% (165)
Warfarin	8.9% (85)

Table 2: Preoperative Medications
(%, No.)

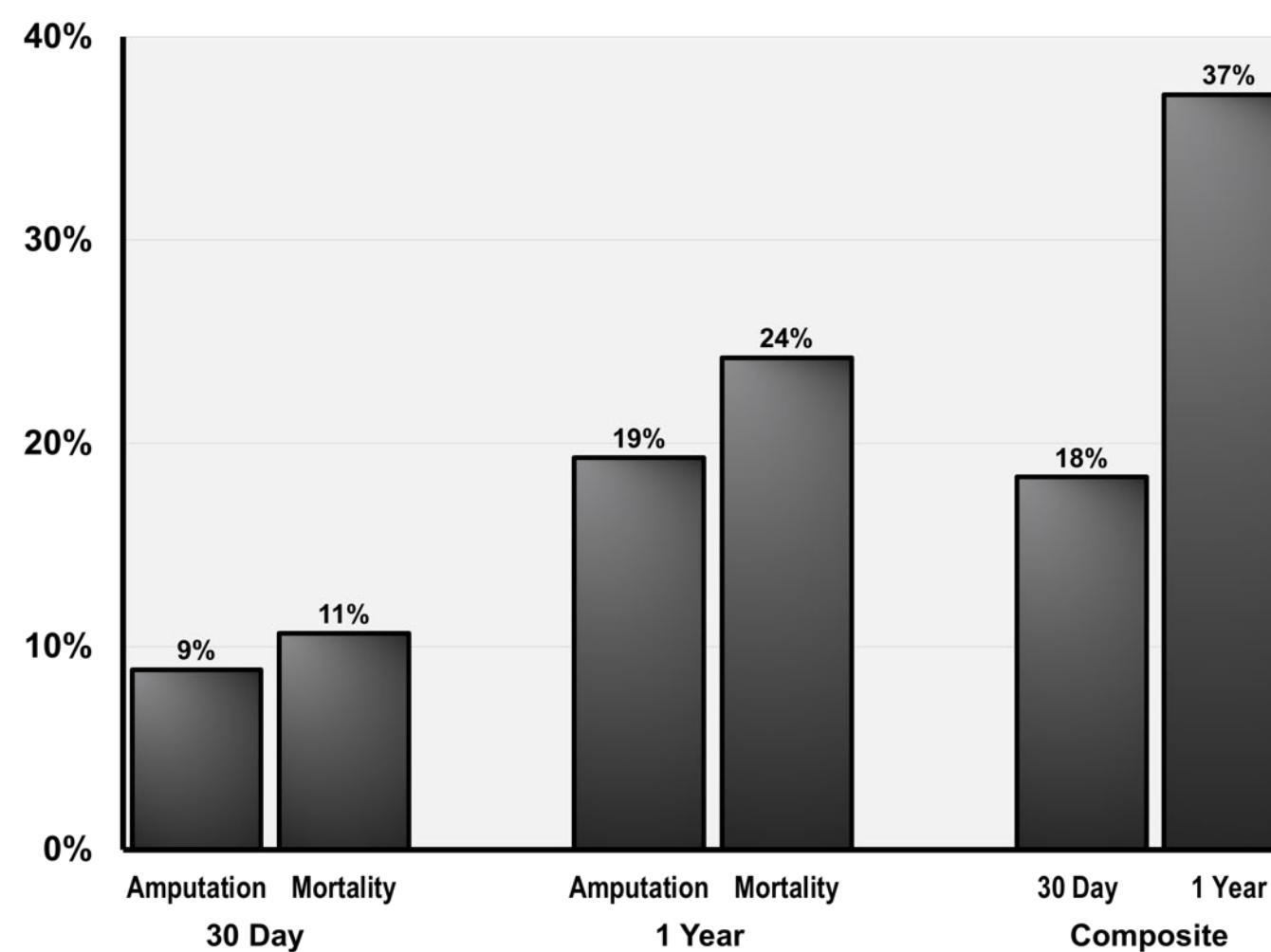


Fig. 1: 30-Day, 1-Year, and Composite Rates of Amputation and Mortality after Open Thrombectomy

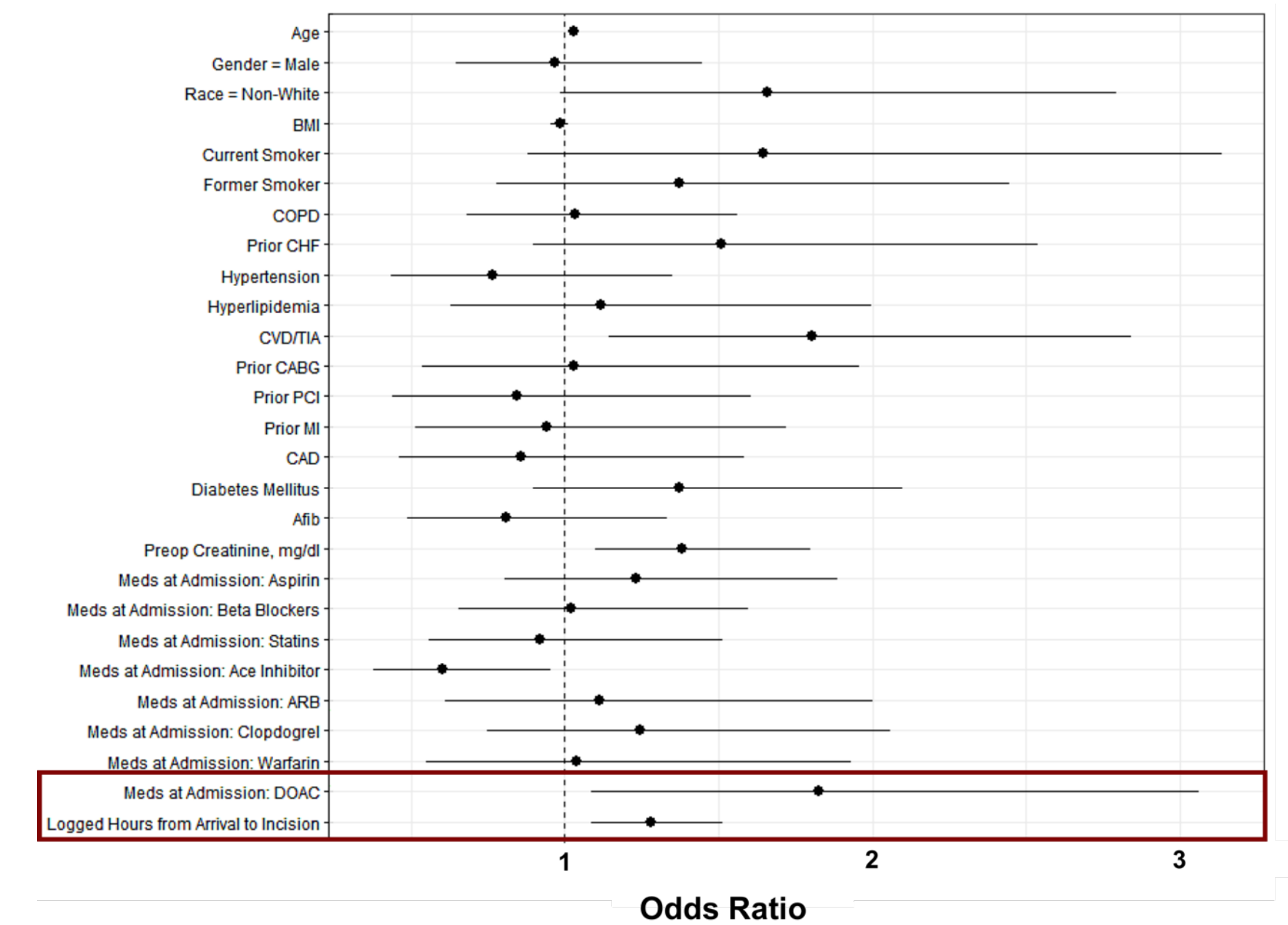


Fig. 2: Patient Factors and 1-Year Composite Outcomes

Conclusions

- Acute limb ischemia requiring surgical thrombectomy is associated with significant morbidity and mortality.
- The risk of amputation and mortality extend beyond the short-term period and persist one year following surgery.
- Additional work to identify modifiable patient and procedural factors is necessary to improve both short- and long-term outcomes.
- Further study into why DOACS, but not warfarin, portend an increased risk of amputation and mortality is also necessary.