Site Variability in 30-Day Amputation Rates Among Patients with Critical Limb Ischemia Undergoing Endovascular Intervention

Insights from a National Electronic Health Record Database

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BACKGROUND

- Peripheral vascular intervention (PVI) reduces the risk of amputation among patients with critical limb ischemia (CLI), although considerable variation in amputation risk remains across health centers
- After controlling for patient characteristics, the magnitude of 30-day amputation risk attributable to site variability is uncertain

AIMS

- This study sought to quantify variability in 30-day amputation after PVI between clinical sites before and after adjusting for patient factors

METHODS

- Using the Cerner Health Facts database, patients undergoing PVI for CLI between 2010 and 2018 were identified using administrative codes
- Patient-level adjustment for post-PVI amputation risk was performed for each center, then the median odds ratio for 30-day amputation was compared across centers

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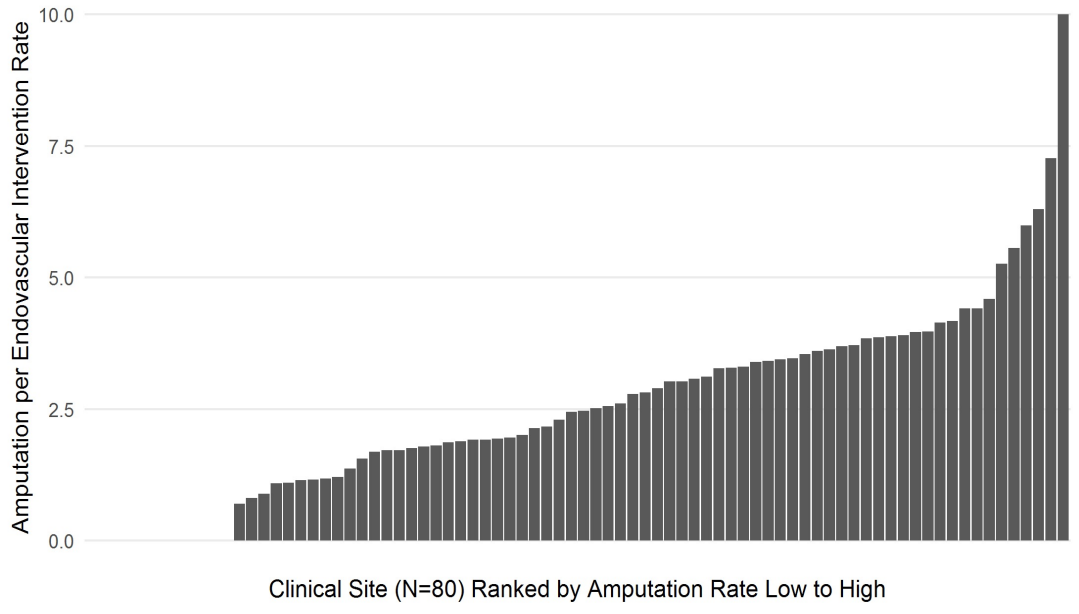
For patients with critical limb ischemia, median 30-day amputation rate was 2.46%; substantial site variability in amputation rate remained after adjusting for patient factors

Figure 1. Percent Amputation by Site in Patients with Critical Limb Ischemia Undergoing Peripheral Vascular Endovascular Intervention



RESULTS

- Among 185 sites with 16,247 unique patients undergoing PVI with documented CLI; 80 sites had performed at least 50 PVIs
- The median amputation rate was 2.46% (Interquartile Range 1.20%-3.62%) (Figure 1) and ranged from 0.0% to 10.0%
- The MOR for the unadjusted model was 1.40 (95% Confidence Interval, 1.35-1.46)
- After adjusting for patient characteristics, the odds of post-PVI amputation at 30 days varied by 30% by site (adjusted MOR 1.30 [95% Confidence Interval, 1.20-1.34]) (Table 1)

Table 1. Median odds ratios for unadjusted and adjusted models documenting variability in 30-day amputation rate between sites

Model	Sites	Median Odds Ratio (95% Confidence Interval)
Model 1: Unadjusted	N = 185	1.40 (1.35-1.46)
Model 2: Adjusted for Patient Characteristics[1]		1.30 (1.20-1.34)

1. Patient characteristics include dichotomous age greater than or less than 65 years, biological sex, white race vs. non-white race, marital status, documented coronary artery disease, depressive disorder, diabetes, heart failure, previous lower limb amputation, malignant cancer, hypertension, kidney disease, malnutrition, osteomyelitis, sepsis, and previous transient ischemic attack.

CONCLUSIONS

- There is substantial variability for 30-day amputation rates between vascular centers that is not entirely explained by patient-level characteristics
- These results highlight the need for systematic treatment pathways for CLI to further reduce amputations

DISCLOSURES

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