Outcomes and Costs Associated with Peripheral Revascularization in Peripheral Artery Disease Patients With and Without Diabetes

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BACKGROUND

- Peripheral artery disease (PAD) and diabetes mellitus (DM) are each associated with heightened ischemic risk and a large economic burden.
- Whether the risks and costs are further increased in patients with both PAD and DM undergoing peripheral revascularization is not well described.

METHODS

- Patients undergoing peripheral revascularization from 1/1/09-9/30/14 in the Premier Healthcare Database were identified.
- Primary outcomes were 30-day and 1-year hospitalizations post-index discharge.
- Unadjusted mean patient costs for the index encounter and subsequent hospitalizations were calculated.
- Major adverse limb events (MALE) included major amputation, acute limb ischemia, or surgical peripheral revascularization.

RESULTS

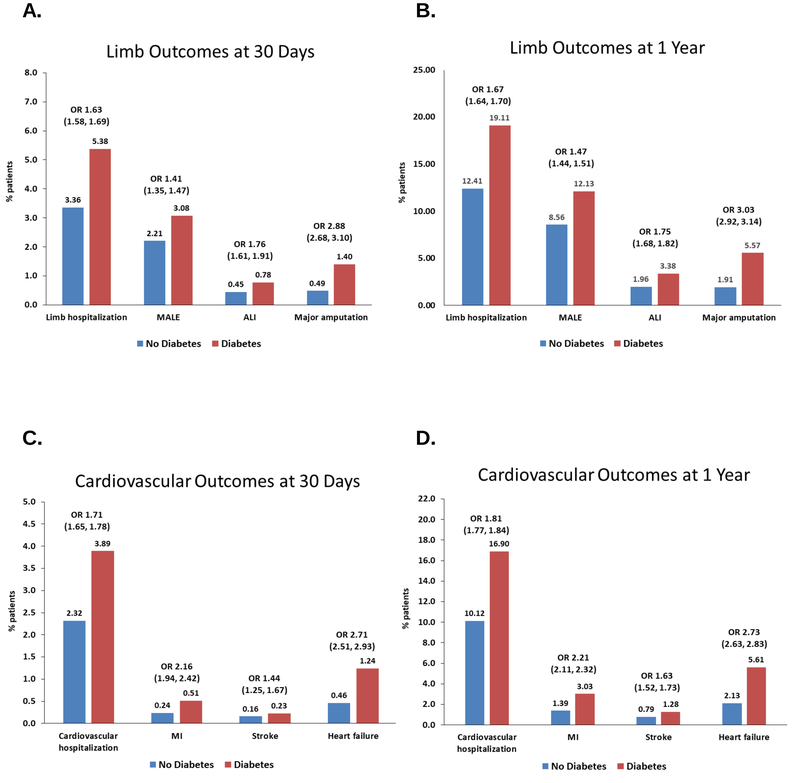
- 39.4% (n=148,443) of 374,776 revascularized PAD patients had DM.
- The average cost of the index encounter for patients with versus without DM was 27.1% higher ($19,176 vs $15,090, p<0.001).
- 30-day hospitalizations occurred in 10.2% (n=23,169) and 17.2% (n=25,558) of PAD patients without and with DM, respectively; at 1 year, these numbers increased to 32.4% (n=73,314) and 48.4% (n=71,846).

Table. Baseline Characteristics

Characteristic*	Without diabetes (n=226,333)	With diabetes (n=148,443)
Age (median, IQR), years	69 (61, 78)	68 (60, 76)
Female sex (%)*	41.7	41.7
White race (%)	77.2	66.3
Prior stroke/transient ischemic attack (%)	7.4	14.4
Renal insufficiency (%)	11.9	38.4
Hypertension (%)	57.7	91.0
Hyperlipidemia (%)	44.2	72.1
Heart failure (%)	12.5	31.7
Ischemic heart disease (%)	43.1	68.9
Current/former smoker (%)	34.0	38.5
Indication for revascularization (%) Symptomatic PAD Critical limb ischemia Acute limb ischemia	 77.4 19.0 3.6	 60.9 36.5 2.5
Inpatient revascularization (%)	57.8	79.7
Type of revascularization (%) Endovascular Surgical Hybrid	 77.8 11.5 10.6	 77.0 12.2 10.8
Hospital length of stay (median, IQR), days‡	3 (2, 7)	5 (2, 9)

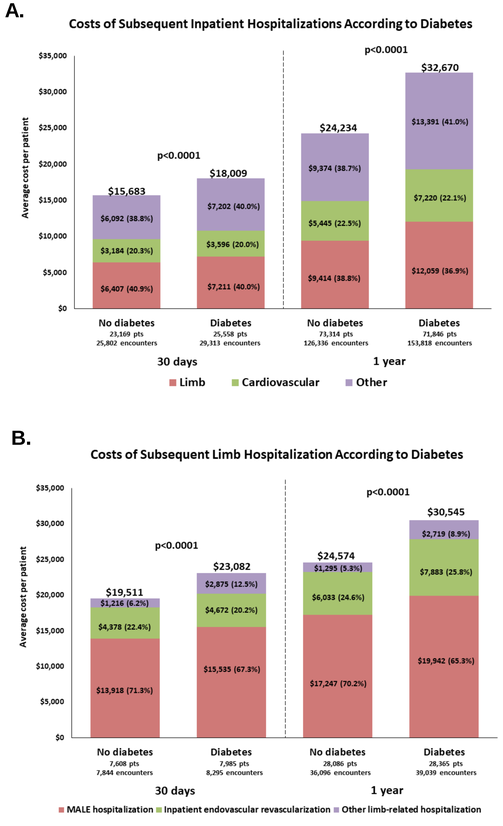
*All p-values <0.05 unless marked by an asterisk; ‡Among patients undergoing inpatient revascularization

Figure 1. Limb (A, B) and Cardiovascular (C, D) Outcomes After Peripheral Revascularization in Patients With and Without Diabetes



ALI, acute limb ischemia; MI, myocardial infarction; OR, odds ratio

Figure 2. Costs Associated with Subsequent (A) and Limb (B) Hospitalizations after Peripheral Revascularization in Patients With and Without Diabetes



LIMITATIONS

- The data are administrative and may be subject to errors in coding and potential misattribution.
- Hospitals are not required to submit all CPT codes to Premier, which could result in potential underreporting of some CPT-based procedures.
- Outcomes and associated costs occurring at non-Premier hospitals were not included.

CONCLUSIONS

- Concomitant DM in revascularized PAD is associated with worse cardiovascular and limb outcomes and 1/3 increased subsequent inpatient healthcare cost compared to PAD alone.
- Irrespective of DM, cardiovascular and limb hospitalizations, especially for MALE, were drivers of post-procedure hospitalization costs.

IMPLICATIONS

- These findings highlight the cardiovascular and limb ischemic risk facing patients with PAD and concomitant DM undergoing peripheral revascularization in contemporary practice.
- Efforts, especially those focused on preventing MALE hospitalizations, are needed to improve outcomes and reduce costs in this high-risk population.

DISCLOSURES

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