Preventable Complications Driving Rising Costs in Management of Patients with Critical Limb Ischemia

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Objectives: This study aimed to identify factors that drive increasing health-care costs associated with the management of critical limb ischemia in elective inpatients.

Methods: Patients with a primary diagnosis code of critical limb ischemia (CLI) were identified from the 2001-2011 Nationwide Inpatient Sample. Demographics, CLI management, comorbidities, complications (bleeding, surgical site infection [SSI]), length of stay, and median in-hospital costs were reviewed. Statistical analysis was completed using Students' t-test and Mann-Kendall trend analysis. Costs are reported in 2011 US dollars corrected using the consumer price index.

Results: From 2001 to 2011, there were a total of 451,823 patients who underwent open elective revascularization as inpatients for CLI. Costs to treat CLI increased by 63% ($12,560 in 2001 to $20,517 in 2011, P < 0.001 in trend analysis). Endovascular interventions were 20% more expensive compared with open surgery ($19,566 vs. $16,337, P < 0.001). Age, gender, and insurance status did not affect the cost of care. From 2001 to 2011, the number of patient comorbidities (7.56-12.40) and percentage of endovascular cases (13.4% to 27.4%) increased, accounting for a 6% annual increase in total cost despite decreased median length of stay (6 to 5 days). Patients who developed SSI had total costs 83% greater than patients without SSIs ($30,949 vs. $16,939; P < 0.001). Patients who developed bleeding complications had total costs 41% greater than nonbleeding patients ($23,779 vs. $16,821, P < 0.001). Overall, there was a 32% reduction in SSI rates but unchanged rates of bleeding complications during this period.

Conclusion: The cost of CLI treatment is increasing and driven by rising endovascular use, SSI, and bleeding in the in-patient population. Further efforts to reduce complications in this patient population may contribute to a reduction in health care-associated costs of treating CLI.

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