

Does Body Mass Index Influence Postoperative Outcomes After Below-Knee Amputation?

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Introduction

Below-knee amputation (BKA) is a surgical treatment option for lower limbs deemed unsalvageable, often due to infection, neuropathy, or trauma. BKA is associated with significant postoperative morbidity. Obesity is often considered a risk factor for adverse surgical outcomes. This study evaluated the association between body mass index (BMI) and postoperative complications following BKA.

Methods

A single-site retrospective review of 139 patients undergoing BKA between 2020 and 2024 was conducted. Patients were grouped as non-obese (BMI < 30, n=70) and obese (BMI ≥30, n=69). Continuous variables (operative time, estimated blood loss) were analyzed using Mann-Whitney U tests, while categorical outcomes, including postoperative complications and reoperation (revision BKA, revision AKA, or debridement/irrigation), were analyzed using Fisher's exact tests.

Results

Operative time (55.5 vs. 60.0 minutes; p=0.78) and estimated blood loss (15 vs. 20 mL; p=0.54) did not differ significantly between groups. Reoperation rates were similar in non-obese and obese patients (21.4% vs. 23.2%; p = 0.84). Among complications, only sepsis was significantly different between groups, occurring more frequently in non-obese patients (38.6% vs. 18.8%; p=0.014; OR 0.37, 95% CI 0.16–0.85). No significant differences were observed in superficial or deep incisional infection, deep vein thrombosis, myocardial infarction, shock, acute renal failure, pneumonia, pressure injury, or 90-day mortality.

Conclusion

Obesity was not associated with prolonged operative time, increased blood loss, reoperation, or most postoperative complications following BKA. Sepsis occurred more frequently in non-obese patients. These findings suggest that BMI alone may be insufficient for risk stratification after BKA. Larger studies are warranted to further clarify the relationship between obesity and surgical outcomes in this population.