Preoperative Anemia is not Associated with Mortality or Amputation after Lower Extremity Bypass

**Objectives**
Preoperative Anemia is associated with increased postoperative morbidity and mortality. The purpose of this study is to examine the impact of preoperative anemia on outcomes among patients with peripheral arterial disease who have undergone open lower extremity bypass (LEB).

**Methods**
Data was obtained from the 2013 American College of Surgeons NSQIP database for year 2013 was used for this analysis, using Procedure Participant User File. Patients were organized into three groups: severe anemia (Hgb <10 g/dl), mild anemia: (Hgb: 10-12 g/dl females and 10-13 g/dl males), and no anemia: (Hgb > 12 g/dl). Bivariable analysis was performed for pre-, intra- and post-operative risk factors among patients with anemia. Multivariable analysis was used to determine associations of independent variables with risk factors associated with mortality and limb loss. Primary outcomes: mortality and limb loss.

**Results**
A total of 2,381 patients (31.9% Females, 68.1% Males) were identified. Among these patients, 328 (14.0%) had severe anemia, 898 (38.3%) had mild anemia, and 1120 (47.7%) did not have anemia. Patients with severe anemia were more likely to have a history of hypertension, diabetes, dialysis dependence, congestive heart failure and critical limb ischemia presenting as tissue loss (p <0.05). They were also more likely to have a hospital stay > 7 days, cardiac arrest requiring CPR, post-operative acute renal failure, return to the operating room, have unplanned reoperation related to lower extremity bypass, and have bleeding requiring transfusion (p <0.05).

On multivariable analysis, the following factors were found to have a significant association with death/mortality: dialysis (OR 4.1, CI 0.5-2.2, p <0.05), MI or stroke (OR 9.4, CI 1.3-5.3, p <0.05) and LOS >7 days (OR 1.9, CI 1.3-5.3, p <0.05). These factors were also associated with amputation. Following factors had strong association with limb loss: dialysis (OR 1.9, CI 1.0-3.5, p <0.05), myocardial infarction or stroke (OR 1.7, CI 1.1-2.8, p <0.05), and hospital stay greater than seven days (OR 7.1, CI 3.9-13.3, p <0.05). Neither mild nor severe anemia was found to be a significant factor for death and amputation on multivariable analysis.

**Conclusions**
This study does not show any significant correlation between anemia and mortality or limb loss, suggesting the importance of other factors instead.

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