Effect of Hypoalbuminemia on Perioperative Complications and Hospital Outcomes in Ankle Fracture Fixation
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Category: Trauma

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Introduction/Purpose: Pre-operative serum albumin levels have routinely been utilized to assess nutritional status. Malnutrition, as defined by serum albumin levels < 3.5 g/dL, has been associated with worse post-operative outcomes in multiple surgical settings. The effect of hypo-albuminemia on 30-day post-operative outcomes after operative fixation of ankle fractures has not been well delineated.

Methods: Using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database, 1,526 patients who had undergone surgical fixation of ankle fractures were identified using Current Procedural Terminology (CPT) codes. Perioperative complications and length of hospital stay were compared between patients with and without hypoalbuminemia (serum albumin concentration <3.5 g/dL) with adjustment for patient and procedural factors. Complications were divided into major and minor. Major complications included death, myocardial infarction, sepsis, and return to operating room.

Results: Preoperative diagnosis of hypoalbuminemia was present in 324 patients (21%). Multivariate analysis confirmed hypoalbuminemia as an independent risk factor for major complications following surgical fixation of ankle fractures (2.3% vs 7.7%; odds ratio [OR], 2.35; 95% confidence interval [CI], 1.29 to 4.27; p=0.05). Patients with a preoperative diagnosis of hypoalbuminemia had an increased length of stay (p<0.001) and increased risk of rehospitalization (1.9% vs 7.1%; OR 4.072; 2.03 to 8.19, p<0.001) compared to those with normal albumin levels.

Conclusion: The presence of hypoalbuminemia upon admission for ankle fracture fixation increases risk of major perioperative complications as well as hospital length of stay. Nutritional optimization of malnourished patients is important in patients undergoing operative fixation of ankle fractures.

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