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## Impact of Malnutrition on Postoperative Outcomes in Patients Undergoing Major Head and Neck Surgery

Introduction: Nutritional status has an important role in outcomes of head and neck cancer patients and has been investigated in recent years. This study seeks to investigate the impact of malnutrition on thirty-day postoperative outcomes of patients with head and neck squamous cell carcinoma (HNSCC).

Methods: A retrospective cohort study was done querying the ACS-NSQIP database between 2007-2017. Preoperative albumin was used as a biological marker for malnutrition and to stratify patients into hypoalbuminemia (HA) ($<3.5$ g/dL) and normal albumin groups. Patients undergoing major surgery for HNSCC were included while patients without a preoperative albumin level were excluded. Multivariate logistic regression models controlling for pre-/perioperative variables with $p<0.05$ in the univariate phase were used to evaluate malnutrition as a risk factor for adverse postoperative outcomes.

Results: 15.3% of total patients (n=6,205) had HA and were significantly more likely to be African American (AA) or Hispanic, as well as have modified Charlson or ASA scores $>3$ (all, $p\leq0.001$). These patients had a significantly longer length of stay (LOS) (14.3 vs 7.0 days; $p\leq0.001$).

Multivariate logistic regression showed patients with HA had increased odds of overall wound (OR 1.5), pulmonary (OR 1.5), or cardiac complications (OR 1.8) as well as mortality (OR 3.6) (all, $p<0.05$). Additionally, they had increased odds of bleeding requiring transfusion (OR 1.9), pneumonia (OR 1.4), failure to wean (OR 1.7), acute renal failure (OR 9.2), and cardiac arrest (OR 3.3) (all, $p<0.05$).

Conclusion: HNSCC patients with malnutrition had significantly increased odds of adverse postoperative outcomes, longer LOS, and were more likely to be AA or Hispanic. This study highlights the importance of prevention and treatment of malnutrition within this patient population.