Malnutrition is Common in Patients Utilizing Glucagon-Like Peptide-1 Agonists Prior to Total Joint Arthroplasty

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INTRODUCTION:

The rising prevalence of obesity and the increased use of glucagon-like peptide-1 (GLP-1) receptor agonists for weight loss and diabetes management has led to more patients qualifying for elective total joint arthroplasty (TJA). While these medications promote weight reduction, they may predispose patients to nutritional deficiencies. This study aims to evaluate the pre-operative nutritional status of GLP-1 users undergoing TJA compared to non-users.

METHODS: A retrospective chart review was conducted at a high-volume academic center on patients who underwent elective primary total knee or hip arthroplasty between January 1 and April 14, 2025. Patients were included if they had complete pre-operative nutritional labs. Nutritional markers included hemoglobin, albumin, total protein, prealbumin, calcium, alkaline phosphatase, and 25-hydroxy vitamin D. Malnutrition was defined as ≥1 laboratory deficiency; severe malnutrition as ≥2 deficiencies. GLP-1 use, indication, and duration were recorded. Statistical analyses included t-tests, chi-square tests, and odds ratio calculations.

RESULTS:

A total of 165 patients met inclusion criteria, with 29 (17.6%) actively using GLP-1 receptor agonists. The two cohorts were matched based on Charleston Comorbidity Index. GLP-1 users had significantly higher rates of malnutrition (38% vs. 8.8%, $p<0.001$; OR=6.2), severe malnutrition (17.2% vs. 2.9%, $p=0.009$; OR=6.88), and GLP-1 users had significantly lower albumin ($p<0.001$), prealbumin ($p=0.003$), and total protein ($p=0.024$) levels compared to controls. Other nutritional labs showed no significant difference.

DISCUSSION AND CONCLUSION:

GLP-1 agonist use is associated with significantly higher rates of pre-operative nutritional deficiencies in patients undergoing elective TJA. Given the high risk of malnutrition in this growing patient population, targeted nutritional screening and optimization should be considered standard practice in the pre-operative evaluation of GLP-1 users.