Effect of weight loss drugs on complications after total hip arthroplasty

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INTRODUCTION:

Obesity is independently associated with increased risk of complications following total hip arthroplasty (THA). While body mass index (BMI) optimization is often required prior to THA, it is unclear if preoperative weight loss decreases this complication risk. The use of pharmaceuticals, including GLP-1 receptor agonists, to augment weight loss is rapidly gaining popularity. Our objective is to understand if pharmaceutical-mediated weight loss influences outcomes after THA.

METHODS:

All patients undergoing primary THA from 2016-2024 at an academic medical center were identified (n= 34,973). Patients were stratified into 4 groups by weight loss status and medication use. Weight loss was defined as 5% or greater reduction in BMI prior to THA. Statistical modeling was performed as a grouped analysis by WHO BMI classification. The outcomes were 90-day postoperative medical and surgical complications.

RESULTS:

Medical complication risk increased progressively across higher BMI categories compared to BMI<30: BMI 30–35 (OR = 1.19; 95% CI: [1.08, 1.30]), BMI 35–40 (OR = 1.46; 95% CI: [1.32, 1.61]), and BMI>40 (OR = 2.20; 95% CI: [1.93, 2.51]). Surgical complication risk also increased significantly among patients with BMI 35–40 (OR = 1.48; 95% CI: [1.21, 1.81]) and BMI>40 (OR = 2.11; 95% CI: [1.67, 2.65]). Preoperative weight loss was associated with increased risk for medical ($p<0.001$) and surgical complications ($p=0.001$) compared to patients in the same BMI group without weight loss. No significant effects were observed for weight loss medication use or any of its interactions with BMI or weight loss.

DISCUSSION AND CONCLUSION:

These findings indicate that higher BMI and weight loss prior to surgery are associated with increased risk of complications following THA, particularly in patients with BMI>35. The use of pharmaceuticals, including GLP-1 agonists, may decrease technical complexity of total hip arthroplasty but does not seem to alleviate medical or surgical complications of obesity and weight loss.