Does Medically Supervised Weight Loss Prior to Total Knee Arthroplasty Improve Patient-Reported Pain and Physical Function?

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INTRODUCTION:
Weight loss is commonly recommended before total knee arthroplasty (TKA) despite inconsistent evidence for better outcomes. The purpose of this study was to examine the impact of weight loss before TKA on adverse events and patient-reported outcomes among patients supervised by a medical weight management clinic.
METHODS:
This was a retrospective analysis of patients who underwent medical weight management supervision within 18 months before TKA comparing patients with and without clinically significant weight loss. Preoperative BMI, demographics, Patient-Reported Outcomes Measurement Information System (PROMIS) physical function and pain interference scores, pain intensity scores, 1-year prosthetic joint infections, 1-year revisions, 90-day Emergency Department visits, and 90-day readmissions were extracted. Multivariable linear regressions were performed to determine if preoperative weight loss correlated with patient-reported outcomes after controlling for confounders.
RESULTS:
Ninety patients, 75.6% female, with a mean age of 65.3 were analyzed. Fifty-one (56.7%) patients underwent clinically significant weight loss with a mean weight loss of 10.4%. Adverse outcomes did not differ with clinically significant preoperative weight loss. Preoperative weight loss predicted significantly improved 3-months postoperative physical function ($\beta = 15.2$ [13.0-17.3], $p < 0.001$) but not pain interference ($\beta = -18.9$ [-57.1-19.4], $p=0.215$) or pain intensity ($\beta = -1.8$ [-4.9-1.2], $p=0.222$) scores.
DISCUSSION AND CONCLUSION:
We found that medically supervised preoperative weight loss was predictive of short-term improvement in physical function after TKA without any adverse effects. Further research is needed to understand the causal relationships between preoperative weight loss, medical supervision, and outcomes after TKA and elucidate potential long-term benefits in a larger sample.