The Impact of Obesity on Total Hip Arthroplasty Outcomes: A Retrospective Matched Cohort Study

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INTRODUCTION:
Introduction: Previous research has shown that obesity is associated with worse post-operative outcomes and this study elaborates on said research to determine how rates of specific complications after total hip arthroplasty align with obesity status. We hypothesize that obese patients would higher rates of complications and cost, thus worse outcomes, than non-obese patients.
METHODS:
Methods: Data were collected from a large commercial insurance database between the years 2011-2020. Patients who underwent a hip replacement under Current Procedural Terminology (CPT) and International Statistical Classification of Diseases (ICD-9/ICD-10) codes. Obese and non-obese patients were matched on age, gender, Charlson Comorbidity Index and Elixhauser Comorbidity Index. Standardized complications and costs at one year were compared using unequal variance t-tests.
RESULTS:
Results: Under CPT codes, 61462 obese and non-obese patients (45% male) each underwent hip replacement. Obese patients had significantly higher rates of surgical site infection (OR=1.193 p=0.0001), deep vein thrombosis (OR=1.275 p=0.001), wound complication (OR=1.736 p<0.0001), hematoma (OR=1.242 p=0.0001), pulmonary embolism (OR=1.141 p=0.0355), urinary tract infection (OR=1.065 p=0.0016), and narcotics use (OR=1.17 p<0.0001), and significantly lower rates of arrhythmia (OR=0.907 p<0.0001), congestive heart failure (OR=0.863 p<0.0001), cardiac arrest (OR=0.637 p<0.0001), pneumonia (OR=0.795 p<0.0001), and transfusion (OR=0.777 p<0.0001). Furthermore, obese patients were significantly more likely to undergo revision within 10 years (OR=1.172 p<0.0001). Under ICD codes, 31922 obese and non-obese patients each were included (45% male). Obese patients did not have a significant difference in total cost or drug cost.
DISCUSSION AND CONCLUSION:
Conclusions: This study did not support our hypothesis that obese patients have worse outcomes than non-obese patients after hip replacement as some complications were significantly greater in obese patients while others were significantly greater in non-obese patients. Additionally, there was no significant difference in total or drug cost. Further research should be done to better understand the complex relationship between obesity and post-operative outcomes.