

New-Onset Depression Following Total Shoulder Arthroplasty: The Impact of Preoperative Patient Factors and Postoperative Complications

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INTRODUCTION:

Depression has been well studied as a risk factor for postoperative complications following total shoulder arthroplasty (TSA). However, little is known about new-onset depression (NOD) following TSA. The purpose of this study is to determine the incidence of NOD following TSA and identify risk factors for its occurrence.

METHODS:

This was a retrospective review of patients undergoing TSA in the Truven Health MarketScan database. NOD was identified. Patients with pre-operative depression were excluded from analysis. Post-operative complications were identified, including the development of a prosthetic joint infection (PJI), need for revision surgery, and postoperative dislocation. If a complication occurred before the development of depression it was considered as a risk factor for NOD. Preoperative patient factors were collected. Survival curves were then built to look at depression-free survival times. Cox proportional hazards regression was then used to estimate hazard ratios (HRs) while adjusting for confounders.

RESULTS:

24,601 patients undergoing TSA were identified. The incidence of NOD was 4.76%. NOD occurred at median of 430 days postoperatively. NOD was seen at a higher rate in females (6.44%) compared to males (3.26%; HR: 2.01 [1.80-2.28]). Patients <55 years had the highest rate of NOD (5.73%), with a HR of 1.54 (1.24-1.91) when compared to those 65-74 years old. NOD was categorized by preoperative opioid use, finding that patients averaging >20 oral morphine equivalents per day had a much higher rate of depression compared to opioid naïve patients (9.96% vs. 3.56%). Patients using >20 OMEs/day had a hazard ratio of 2.42 (2.05-2.86) when compared to opioid naïve patients. Patients with diabetes (HR 1.32 [1.14-1.51]), obesity (HR:1.23 [1.06-1.43]), and those using tobacco (HR: 1.31 [1.08-1.58]) also had higher rates of NOD. When investigating postoperative complications, patients who developed a PJI or those requiring revision surgery had very high rates of NOD after the development of the complication (58.93% and 58.14%, respectively). This was associated with hazard ratios of 3.91 (2.55-6.01) and 5.73 (3.68-8.93), respectively.

DISCUSSION AND CONCLUSION: NOD is common following TSA. There are multiple patient-specific factors and postoperative complications which increase the odds of its occurrence. While the incidence of PJI and revision surgery is relatively low following TSA, over half of these patients go on to develop depression. Providers can use this information to screen at-risk patients and refer them to mental health services when needed.