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A Retrospective Nationwide Analysis of the Impact of Sleep Apnea on Admission Costs Following Total Hip Arthroplasty

Introduction: Total hip arthroplasty (THA) is one of the most frequently performed surgeries in the United States. Obstructive sleep apnea (OSA) may influence postoperative outcomes, potentially increasing the burden on patients and the healthcare system. This study aimed to evaluate the association between SA and postoperative costs and discharge disposition in patients undergoing primary THA.

Methods: A retrospective cohort study was performed using the National Inpatient Sample database of primary THA occurring between 2010 and 2021. The primary exposure was diagnosis of OSA. Confounding variables were basic demographics, baseline health status, and surgical facility characteristics. The primary outcome studied was admission cost. Univariate analyses were performed to assess differences between cohorts. Multivariable log-linear regression was used to evaluate the association between OSA and admission cost among patients who underwent THA.

Results: Our study identified 819,733 cases of THA that fulfilled study inclusion criteria, of which 94,835 (11.57%) had a diagnosis of OSA. Many patients in both cohorts were 60-69 years old, had White race, Medicare insurance, and Charlson comorbidity index of 0. Many of the procedures were performed in large, urban-teaching, and private, non-profit hospitals. On univariate analysis, OSA patients had higher average admission costs compared to non-OSA patients (\$65,108 vs. \$64,853; $p < 0.001$). On adjusted multivariable analysis, OSA patients had 1.01 times higher (95% CI 1.01-1.01; $p < 0.001$) odds of higher costs compared to non-OSA patients.

Conclusion: Patients with obstructive sleep apnea undergoing total hip arthroplasty have significantly higher admission costs compared to those without sleep apnea. These findings highlight the need for targeted perioperative management strategies to optimize resource utilization and outcomes in this population.