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William Pallissery M.D.

Advisor(s): Qais Naziri M.D.

Co-author(s): Abdullah Uddin, David Klotz, Margaret Lee, David H. Mai, Yevgeniy Korshunov, Jennifer Hashem, William Urban, Jeff Schwartz, Jaime Uribe, Aditya Maheshwari

Chronic Obstructive Pulmonary Disease as a Predictor of Increased Costs and Prolonged Hospitalization in Primary Total Hip Arthroplasty: A National Database Study

Introduction:

Total hip arthroplasty (THA) is among the most common invasive surgical procedures in the United States. This study aimed to evaluate the impact and assess the relationship between Chronic Obstructive Pulmonary Disease (COPD) and the costs and duration of stays for patients undergoing total hip arthroplasty. Methods:

A retrospective cohort study was conducted using the National Inpatient Sample database of primary THA occurring between 2010 and 2021. Patients were categorized based on the presence of COPD. The primary outcomes were admission cost and length of stay. Potential confounders included basic demographics, baseline health status, and surgical facility characteristics. Univariate analyses were performed to contrast cohort variations. Multivariable analyses, adjusted for confounding variables, were conducted to assess the risk of increased length of stay and admission cost for patients with COPD undergoing primary THA. Results:

Our study identified 819,733 patients who underwent primary THA and fulfilled inclusion criteria, 59,485 (7.30%) of which had COPD. The highest proportion of patients in both cohorts were 60-69 years old, had female sex, White race, and Medicare insurance. A large proportion of the procedures occurred in large, urban teaching, private non-profit hospitals. On multivariable regression analysis, compared to those without COPD, those with COPD have 1.01 times higher (95% CI 1.00-1.02; p<0.001) odds of increased cost as well as 1.06 times higher (95% CI 1.05-1.07; p<0.001) odds of a prolonged length of stay. Conclusion:

Compared to patients without COPD, those with COPD who underwent primary THA had higher odds of increased cost and length of stay. Further research on cost mitigation and time efficiency for THA candidates with COPD is required to improve outcomes.