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Increased Postoperative Risks in Interstitial Lung Disease Patients Undergoing Total Hip Arthroplasty: A Retrospective National Cohort Analysis

Introduction: Total hip arthroplasty is among the most common surgical procedures in the U.S. Postoperative complications pose a burden on patients and the healthcare system. This study assessed the impact interstitial lung disease (ILD) on postoperative outcomes in patients undergoing primary total hip arthroplasty (THA).

Methods: A retrospective cohort study was performed using the National Inpatient Sample database (2010-2021) to identify primary THA cases. The primary exposure was ILD diagnosis. Confounding variables included demographics (age, sex, race/ethnicity, insurance type), baseline health status (Charlson comorbidity index, smoking, inflammatory arthritis, osteoporosis, hip fracture), and surgical facility characteristics (hospital size, hospital location/teaching status, ownership status). Outcomes included procedure-related complications, hospital-acquired complications, and admission mortality. Univariate analyses assessed differences between cohorts, and multivariable regression, adjusting for confounders, assessed postoperative risk.

Results: Among 819,733 THA cases meeting inclusion criteria, 1,320 (0.16%) had ILD. Many patients in both cohorts were female, White, and Medicare-insured. Procedures were commonly performed in large, urban-teaching, and private, non-profit hospitals. On multivariable regression, ILD patients had 2.16 times higher (95% CI 1.87-2.50; $p < 0.001$) odds of procedure-related complications, 1.28 times higher (95% CI 1.14-1.44; $p < 0.001$) odds of hospital-acquired complications, and 3.05 times higher (95% CI 1.74-5.34; $p = 0.001$) odds of admission mortality compared to non-ILD patients.

Conclusion: Patients with ILD undergoing THA had a higher risk of procedure-related complications, hospital-acquired complications, and admission mortality as compared with non-ILD counterparts. Further research on stratification strategies are needed to improve outcomes in this population.