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Yeashin Nur M.S.,B.S. Advisor(s): Qais Naziri M.D.

Co-author(s):

Higher Postoperative Risks in Patients with Interstitial Lung Disease Undergoing Total Knee Arthroplasty

Background:
Total knee arthroplasty (TKA) is one of the most commonly performed procedures to improve mobility and quality of life in patients with advanced knee osteoarthritis. Patients with interstitial lung disease (ILD) undergoing surgery, both pulmonary and non-pulmonary, face significantly higher perioperative risks, including increased postoperative medical complications, prolonged hospital stays, and mortality. However, limited research exists on the impact of ILD on postoperative outcomes following TKA.
Methods:
We performed a retrospective cohort study utilizing the Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS) database. Admissions for total knee arthroplasty (TKA) between 2010 and 2021 were identified using ICD-9 and ICD-10 procedure codes. Patients with an associated diagnosis code for ILD were assigned to the ILD cohort, the primary exposure group. Confounding variables included patient demographics, baseline health status.
The primary outcomes studied were same-admission procedure-related complications and admission mortality. Univariate and multivariable logistic regression analyses were performed to assess associations between ILD and primary outcomes, adjusting for confounding variables.
Results:
A total of 1,358,310 patients were included in the analysis, of whom 1,356 (0.1%) had ILD and 1,356,954 (99.9%) did not. Compared to non-ILD patients, ILD patients had 1.58 times higher (95% CI: 1.26 - 1.98, $p < 0.001$) odds of procedure-related complications. No significant difference in same-admission mortality was observed between ILD and non-ILD patients ($p = 0.867$).
Conclusions:
Patients with ILD undergoing TKA have a significantly higher risk of procedure-related complications, emphasizing the need for thorough preoperative risk assessment and perioperative management. Future research should explore strategies to mitigate surgical risks in ILD patients undergoing TKA.