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Impact of Non-Alcoholic Fatty Liver Disease on Reoperation Risk Following Total Hip Arthroplasty

Total hip arthroplasty (THA) is among the most common invasive surgical procedures in the United States. Non-Alcoholic Fatty Liver Disease (NAFLD) is a prevalent metabolic disorder that may influence postoperative outcomes. This study aimed to evaluate the relationship between NAFLD on the risk of reoperation among 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 NAFLD. The primary outcome was reoperation and admission mortality. Potential confounders included basic demographics (age, sex, race/ethnicity, insurance status), baseline health status (Charlson comorbidity index, smoking status, inflammatory arthritis, osteoporosis, hip fracture), and surgical facility characteristics (hospital size, location/teaching status, and ownership status). Univariate analyses were used to contrast cohort variations. Multivariable analysis were used to identify reoperation risk and admission mortality for patients with NAFLD undergoing THA. Adjusted odds ratios (ORs) and 95% confidence intervals (CIs) were reported.

Results:

Our study identified 819,733 patients who underwent THA and fulfilled inclusion criteria, 3,755 (0.46%) had NAFLD. The highest proportion of patients in both cohorts had were 60-69 years old, female, White, and Medicare insurance. A large proportion of the procedures occurred in a large, urban teaching, and private, non-profit hospitals. Multivariate regression analysis shows patients with NAFLD have 1.10 times higher (95% Cl 1.01-1.21; p=0.039) odds of reoperation. There was no statistical significance in admission mortality (p=0.106).

Discussion and Conclusion:

Compared to patients without NAFLD, those with NAFLD who underwent THA had a higher risk of re-operative risk. Further research on risk mitigation for THA candidates with NAFLD is required to improve outcomes.