Patients with Cystic Fibrosis Undergoing Total Hip and Total Knee Arthroplasty are at Increased Risk for Perioperative Complications

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INTRODUCTION:

Patients with Cystic Fibrosis (CF) are living longer and therefore considered for total hip arthroplasty (THA) and total knee arthroplasty (TKA). Currently, there is no literature examining THA or TKA patients with CF, making this the first study examining postoperative outcomes and revisions in this population.

METHODS:

Using a national insurance database, a large administrative database, THA and TKA adult patients with and without CF were identified and abstracted. Patients with CF were matched to those without CF 1:10 based on age, sex and Elixhauser-Comorbidity Index. Using univariable and multivariable logistic regression, 90-day postoperative events and 2-year revision rates were compared between cohorts.

RESULTS:

For THA, 185 patients with CF were matched with 1,846 controls without. On multivariable logistic regression, patients with CF were at significantly increased odds of 90-day postoperative events including: any adverse event (odds ratio [OR] 1.60), severe events (OR 1.73), sepsis (OR 4.15), minor events (OR 1.68), and pneumonia (OR 3.40).

For TKA, 505 patients with CF were matched with 5,047 controls without. On multivariable logistic regression, patients with CF were at significantly increased odds of 90-day postoperative events including: any adverse event (OR 1.90), severe events (OR 1.50), cardiac event (OR 2.29), minor events (OR 2.17), AKI (OR 1.61), pneumonia (OR 4.95), and UTI (OR 2.08).

For both THA and TKA, 2-year revision rates were not associated with increased odds for those with CF.

DISCUSSION AND CONCLUSION:

The current study is the first study to examine 90-day postoperative outcomes and 2-year revisions on patients with CF who underwent THA or TKA. For both THA and TKA, CF patients were at increased odds of several postoperative events, but not 2-year revision rates. These findings will be helpful for surgeons in risk assessment, targeted care pathways, and patient/family counseling.

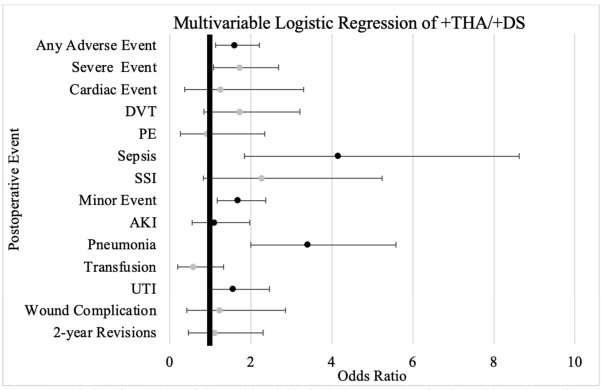

Figure 1: This is a forest plot of the multivariable logistic regression for the Odds Rations of +THA/+CF, relative to +THA/-CF. The points in black are statistically significant and the points in gray are not. The bold vertical line denotes the value of 1.

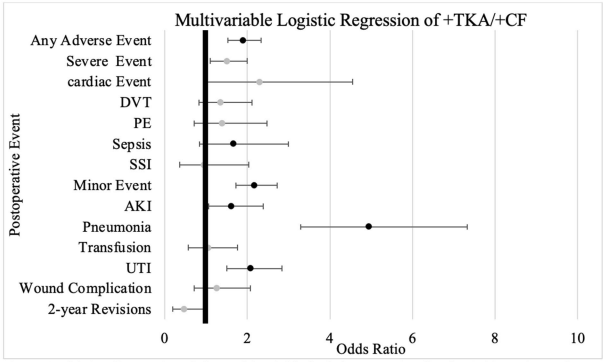

Figure 2: This is a forest plot of the multivariable logistic regression for the Odds Rations of +TKA/+CF, relative to +TKA/-CF. The points in black are statistically significant and the points in gray are not. The bold vertical line denotes the value of 1.