Paper #30

Bilateral Total Knee Arthroplasty May Not Be Safe even in the Healthiest of Patients

Jared A. Warren, DO, Ahmed Siddiqi, DO, Viktor E. Krebs, MD, **Robert M. Molloy, MD**, Carlos A. Higuera, MD, Nicolas S. Piuzzi, MD

Introduction: Bilateral total knee arthroplasty (BTKA) has been shown to increase both mortality and complications; however, it has potential benefits including decreased length of stay, rehabilitation time, and costs. The purpose of this study was to use data from a nationally representative database to identify if there is a population of TKA patients in which BTKA can be safely performed by comparing 30-day mortality and complication rates to unilateral total knee arthroplasty (UTKA) patients.

Methods: The National Surgical Quality Improvement Program (NSQIP) was queried to compare 30-day mortality, any complication, and major complication between BTKA and UTKA. 8,291 BTKA patients were 1:1 matched with UTKA control cohort (n=315,219) by morbidity probability, a cumulative variable encompassing demographics, comorbidities, and laboratory values. Patients were divided in tow quartiles based on morbidity probability. Binary logistic regression comparing BTKA to UTKA for the same quartiles was performed to establish if any population could safely have BTKA performed.

Results: BTKA had an increased risk for all complications and major complications when compared to UTKA regardless of health status. For all complications, there was an over 3-fold increase for the 1st quartile (healthiest patients) ($p<0.001$), greater than 4-fold increase for the 2nd ($p<0.001$) and 3rd quartiles ($p<0.001$) and an over 3-fold increase for the 4th quartile (least healthy patients) ($p<0.001$). For major complications, there was an over 2-fold increase for the 1st quartile ($p=0.001$) and 2nd ($p<0.001$) quartiles, an almost 3-fold increase for the 3rd quartile ($p<0.001$), with a 57% increase for the 4th quartile ($p=0.005$). There was no difference in mortality between BTKA and UTKA regardless of health status ($p>0.05$).

Conclusions: This study will assist shared decision making between orthopaedic surgeons and patients by suggesting that BTKA may not be a safe option for even healthy individuals compared to unilateral TKA.

Notes