May 8th, 12:30 PM - 1:30 PM

**Greater Co-morbidity Burden is Associated with Greater Pain and Disability at Time of Total Knee Replacement Among African American Patients**

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Title: Greater co-morbidity burden is associated with greater pain and disability at time of total knee replacement among African American patients

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Introduction: The existence of racial disparities in total joint replacement (TJR) care is well established based on Medicare and VA data. As compared to white patients, African American TJR patients have lower utilization rates, more pain, poorer function at the time of surgery, and higher post-operative complication rates. We analyzed a national prospective total knee replacement (TKR) cohort to further investigate patterns of medical and musculoskeletal co-morbidities among African American and white TKR patients.

Methods: Descriptive analyses were performed on a national database (FORCE-TJR) of 3,313 TKR patients from 107 orthopedic surgeons. Data collected include patient sociodemographics (age, gender, race, education, insurance, household income, smoking status), modified Charlson co-morbidity scores, and pre-operative and post-operative pain and function scores (SF-36 PCS and MCS, WOMAC, KOOS/HOOS ADL score). To assess the total musculoskeletal pain burden, WOMAC pain scores were recorded for non-operative weight bearing joints as well as Oswestry low back pain scores. Multivariate models are in progress.

Results: Preliminary descriptive analyses demonstrate a higher medical co-morbidity burden in African American TKR patients as compared to whites (COPD, DM, smoking), as well as worse baseline pain (mean WOMAC pain score = 43.46 vs. 52.92, \(p<0.001\)) and function scores (mean PCS score = 31.43 vs. 33.17, \(p<0.003\)). After adjusting for age, sex, and BMI, stepwise linear regression models demonstrated that 39% of the variance in baseline WOMAC function scores is explained by co-morbidities, with pain in the non-operative joints as the principle explanatory factor.

Conclusion: Preliminary results demonstrate significant differences in medical and musculoskeletal co-morbidities that correlate with poorer pain and function scores in African American patients at the time of TKR.

References: