P114 Patient-reported physical and mental health among factors associated with the timeliness of total knee replacement

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Objective: Patients undergoing elective total knee replacement (TKR) to treat advanced knee osteoarthritis vary widely in preoperative function and pain profiles, suggesting some patients may be undergoing TKR prematurely or may be delaying. With nearly 20% of TKR patients dissatisfied with their outcome, we assessed prevalence and predictors of TKR timeliness in a national sample of TKR patients.

Methods: X-rays of all primary unilateral TKRs performed at 5 high-volume centers and enrolled in the FORCE-TJR registry were retrieved and read by a senior musculoskeletal radiologist. A validated TKR appropriateness algorithm based on X-ray findings (KL grade and compartments with osteoarthritis), age, knee stability, and preoperative WOMAC pain and function scores was applied to classify TKRs as either appropriate, inappropriate (premature) or inconclusive. Multinomial logistic regression was utilized to determine the independent predictors of inappropriate and inconclusive TKRs using appropriate TKR as reference. The model included sex, race, insurance status, smoking status, the Charlson comorbidity index score, weight (obese, overweight, normal weight), Oswestry lower back pain score, and the Short-Form 36 physical mental component scores (SF-36 PCS and SF-36 MCS).

Results: Of 3,900 TKRs reviewed, X-rays were available on 2,396 TKRs (mean age 66.2 years; 60% female). The criteria classified 1,814 TKRs (76%) as appropriate, 359 (15%) as inappropriate, and 223 (9%) as inconclusive. Regression analysis showed that being female and obese, and having a Charlson comorbidity index score of 6+ were associated with lower odds of having an inappropriate TKR; while having private or other insurance and being a current smoker were associated with higher odds of having inappropriate TKR. Additionally having higher (better) SF-36 PCS and SF-36 MCS scores was associated with higher odds of inappropriate TKR while mild low back pain was associated with lower odds of having inappropriate TKR. Similar trends were observed for predicting the odds of inconclusive TKR.

Conclusions: Most patients in our sample underwent appropriate TKR. The findings that the odds of inappropriate (premature) TKR was associated with better SF-36 PCS and MCS scores and no low back pain highlight the importance of patient-reported physical and mental health in determining appropriate timing of TKR.