Pre-operative HOOS and KOOS Independently Predict Achievement of Post-operative Minimal Clinically Important Differences (MCID) But Not Patient-Reported Satisfaction

Zhaorui Wang, Eric Guo, Christopher N Carender[1], Brian Richard Hallstrom[2], Michael Maher Kheir

[1]University of Michigan - Michigan Medicine, [2]Univ Of Michigan Med Ctr

INTRODUCTION:

Centers for Medicare and Medicaid services (CMS) is working to implement Significant Clinical Difference (SCD) improvement thresholds of 22 points for HOOS JR and 20 points for KOOS JR scores as requirement for reimbursement. Our goal is to study the relationship between pre-op KOOS/HOOS Jr. scores and post-op MCID and satisfaction, as well as evaluate whether the CMS proposed SCD thresholds predict satisfaction.

METHODS:

We reviewed 5,975 cases (2668 TKAs and 3307 THAs) between 2015-2023 from the Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI). HOOS JR, KOOS JR, scores were obtained at preoperative, 6-week and 1-year postoperative timepoints. Demographic variables, comorbidities, and surgery-related variables were retrospectively collected. Logistic regression analyses and ROCs were generated to examine the relationship between: 1) pre-op score satisfaction, 2) pre-op score and achievement of MCID, and 3) delta change in score and satisfaction.

RESULTS: Pre-op HOOS/KOOS Jr. scores independently predict achievement of MCID at 6 weeks ($p<0.01$) and 1 year ($p<0.01$) but not satisfaction at 6 weeks ($p=0.50$ for TKAs and $p=0.12$ for THAs) or 1 year ($p=0.24$ for TKAs and $p=0.76$ for THAs). Increased postop score improvement at 6 weeks and 1 year correlated with increased satisfaction ($p<0.01$ for both TKA and THA at both time points). The delta from preoperative to 1-year scores were highly predictive of satisfaction for TKAs (AUC 0.77, $p<0.01$) and THAs (AUC 0.82, $p<0.01$); Youden's index analysis indicates a delta threshold of 22 points for THA and 21 points for TKA can predict patient satisfaction.

DISCUSSION AND CONCLUSION:

Although pre-operative KOOS/HOOS scores are excellent tools for predicting achievement of MCID and the amount of score improvement in THA/TKA, they are less useful in predicting patient perceived satisfaction. However, the degree of score improvement correlated with postop satisfaction. SCD scores as suggested by CMS for reimbursement appear to predict patient satisfaction.