

Predictive Demographic and Comorbid Factors on Functional Outcomes following Revision Hip Arthroplasty

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Introduction: As reimbursement models become aligned with quality metrics and patient functional outcomes, the importance of patient-reported measures (PRMs) is increasing. The purpose of this study was to examine patient-reported outcomes in the 5 years after revision total hip arthroplasty (THA), and to describe patient-specific variables that are associated with improved self-reported physical function at 2 years.

Methods: As part of a prospective, multicenter study (15 centers, 19 surgeons) PRMs were obtained pre-operatively and followed longitudinally for 5 years after revision THA in 128 patients. Short Form 36 (SF-36) questionnaires at 2-year follow-up were available in 93% (n=119) of baseline patients (60 males, 59 females), allowing calculation of physical (PCS) and mental (MCS) composite summary scores, as well as bodily pain score (BPS). To determine associations between baseline variables such as self-reported medical co-morbidity burden, PRMs and physical assessment information to the patients' 2-year PCS score, multivariate stepwise regression analysis was performed.

Results: Mean preoperative SF-36 PCS was 33.7 and improved to 43.7 at 2 years, while BPS improved from 36.0 to 46.9. In cases where both the stem and cup were revised, the 2-year PCS was higher than for cases where only the acetabular component was revised ($p=0.02$). Predictors of low PCS at 2 years were a history of cancer ($p=0.018$), and endocrine or metabolic disorders ($p=0.018$). The absence of concurrent medical conditions ($p=0.01$) was a predictor of higher 2-year PCS, as was higher baseline PCS or MCS.

Discussion: In this prospective study, significant improvement in SF-36 physical and mental domains as well as bodily pain was noted in the first 2 years after surgery, after which scores plateaued but did not diminish markedly. Quantitative assessment of patients' pre-operative medical comorbidities and self-reported health state predicted functional outcomes at 2-year follow-up, which may aid in managing patient expectations.

