Time to MCID in Patients Undergoing Conversion Total Hip Arthroplasty After Femoral Neck Fracture: A Propensity Score Matched Study

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INTRODUCTION:

Conversion total hip arthroplasty (cTHA) is commonly utilized for patients with persistent osteoarthritis or failed fixation following femoral neck fracture (FNF). There is limited data comparing patient-reported outcomes between patients undergoing cTHA after FNF and primary THA (pTHA) patients. This study aimed to compare the time to reach the minimal clinically important difference for improvement (MCID) for the Hip Disability and Osteoarthritis Outcomes Score-Physical Function Short Form (HOOS-PS), Patient-Reported Outcomes Measurement Information System (PROMIS) Global Physical, and PROMIS Physical Function short form 10a (PF-10a).

METHODS:

Patients undergoing cTHA for FNF between 2016 and 2022 were identified from an institutional database and propensity score matched 1:4 to pTHA patients by age, sex, body mass index, and Charlson Comorbidity Index. Demographic and MCID achievement rates were compared. To assess the time to achieve MCID, survival curves with and without interval censoring were used.

RESULTS:

A total of 195 THAs (39 FNF cTHA and 156 pTHA) were analyzed. The median time for FNF cTHA patients to achieve MCID was significantly slower than pTHA patients for PROMIS PF-10a (8.1 vs. 4.3 months, P = 0.049). Interval censoring revealed the median time to achieve MCID was slower for FNF cTHA compared to pTHA for PROMIS Global Physical (0.500-0.839 vs. 0-0.240 months, P = 0.042) and PROMIS PF-10a (5.067-5.372 vs. 2.600-2.722 months, P = 0.009), but similar for HOOS-PS (1.000-1.389 vs. 1.333-1.339 months, P = 0.53).

DISCUSSION AND CONCLUSION:

The time to achieve MCID was significantly slower for FNF cTHA patients compared to pTHA patients. This delay in achieving MCID should be factored into shared decision-making discussions to enhance preoperative expectation management and patient education. Future research is needed to identify modifiable factors that could improve recovery outcomes for FNF cTHA patients.

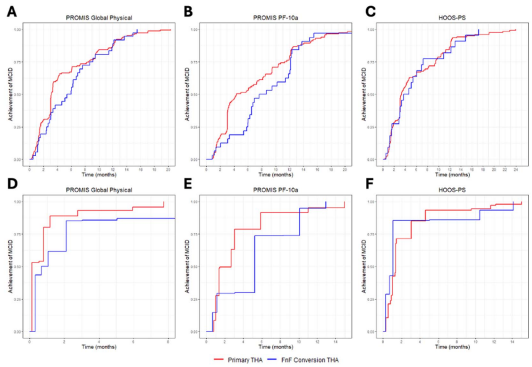

Figure 1. A-C: Comparing time to achieve MCID between FNF converted THA and primary THA without interval-censoring. The median MCID achievement time for the FNF converted THA was similar to primary THA for A) PROMIS Global-Physical (5.7 vs. 3.1 months, P = 0.18) and C) HOOS-PS (4.2 vs. 3.3 months, P = 0.86), but significantly slower for B) PROMIS PF-10a (8.1 vs. 4.3 months, P = 0.049). **D-F:** Comparing time to achieve MCID between FNF converted THA and primary THA with interval-censoring. The median MCID achievement time was slower for FNF converted THA compared to primary THA for D) PROMIS Global Physical (0.500-0.839 vs. 0-0.240 months, P = 0.042) and E) PROMIS PF-10a (5.067-5.372 vs. 2.600-2.722 months, P = 0.009), but similar for F) HOOS-PS (1.000-1.389 vs. 1.333-1.339 months, P = 0.53).