FUNCTIONAL REHABILITATION AFTER TOTAL KNEE ARTHROPLASTY IN PATIENTS WITH RHEUMATOID ARTHRITIS: SPECIFIC CHALLENGES AND PERSONALIZED STRATEGIES

Douae El Ouazzani, Asmaa Hsissi, Radia Sellami, Ryme El Beloui, Hasnaa Boutalja, Nada Kyal, Fatima Lmidmani, Abdellatif El Fatimi

Physical Medicine and Rehabilitation Department, Morocco
e-mail: elouazzani.douae@gmail.com

Background and Aims

Total knee arthroplasty (TKA) aims to improve function in rheumatoid arthritis (RA) patients; however, diverse epidemiological, clinical, radiological, biological profiles, and ongoing medical treatments influence rehabilitation outcomes. This study therefore investigated the impact of personalized rehabilitation, tailored to these parameters, on functional recovery post-TKA in these patients.

Methods

A prospective cohort study enrolled 60 rheumatoid arthritis (RA) patients undergoing primary total knee arthroplasty (TKA) at the Physical Medicine and Rehabilitation Department of Ibn Rochd University Hospital Center in Casablanca. Baseline data collected included age, body mass index (BMI), Charlson Comorbidity Index, pain intensity (Numeric Pain Rating Scale - NPRS), functional status (Health Assessment Questionnaire - HAQ), Kellgren-Lawrence grade, inflammatory biological markers (C-reactive protein - CRP, erythrocyte sedimentation rate - ESR), and current medical treatment (corticosteroids, conventional synthetic /biologicDMARDs..). Personalized rehabilitation programs were designed based on these individual patient profiles. Functional outcomes were evaluated at 12 weeks postoperatively using the Timed Up and Go (TUG) test and the Knee Injury and Osteoarthritis Outcome Score (KOOS).

Results

At 12 weeks, personalized rehabilitation significantly improved functional outcomes, with mean Timed Up and Go (TUG) decreasing from 22.1 ± 4.5 s to 14.5 ± 2.8 s ($p<0.001$) and mean Knee Injury and Osteoarthritis Outcome Score for Activities of Daily Living (KOOS-ADL) increasing from 45.8 ± 7.6 to 72.3 ± 9.1 ($p<0.001$). Subgroup analysis indicated that patients with fewer comorbidities, negative inflammatory markers, and those receiving biologic DMARD therapy achieved significantly better TUG (13.5 ± 2.3 s, 13.2 ± 2.0 s, 13.0 ± 2.1 s respectively) and KOOS-ADL (75.0 ± 8.0, 77.0 ± 7.0, 78.5 ± 7.5 respectively) compared to their respective counterparts ($p<0.05$).

Conclusion

Personalized rehabilitation enhances functional recovery after TKA in RA patients. Fewer comorbidities, lower inflammation, and biologic DMARD use correlate with greater improvements, highlighting the importance of individual patient characteristics in rehabilitation strategies.

Keywords: knee arthroplasty, rheumatoid arthritis, rehabilitation