

Clinical outcomes of fracture of neck of femur patients treated by two different types of orthopaedic implants at the Teaching Hospital Jaffna

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Background: Proximal Femoral Nail Antirotation (PFNA) and Dynamic Hip Screw (DHS) are two types of orthopaedic implants that are frequently used to treat fracture of the neck of femur in the Teaching Hospital Jaffna. PFNA is superior to DHS for femoral neck fractures. PFNA is not freely available in public hospitals. So patients are compelled to purchase PFNA out-of-pocket, in many occasions. Patients from low socio-economic status have to receive DHS which is sub-optimal, despite the fact that the surgeon's recommendation should be decisive in determining the implant received. This study compares short- and long-term clinical outcomes by implant type and acquisition of the recommended implant, and differences in long-term clinical outcomes by socioeconomic factors.

Methods: An analytical cross-sectional study was carried out in patients, with age >45 years, who were treated with PFNA or DHS implants at an orthopedic unit at the Teaching Hospital Jaffna between July 2019 and June 2020. Data on short- and long-term clinical outcomes, and socioeconomic factors were collected over the phone using an interviewer-administered questionnaire. Data were also extracted from Bed Head Tickets and from Clinic Records. Analysis was performed on IBM SPSS (v25) using descriptive statistics, independent t-test, Mann Whitney U test and one way ANOVA.

Results: A total of 153 implant surgeries were performed to patients with fracture of the neck of femur in the one-year period. 121 patients met the inclusion criteria. 51% responded and thus 62 patients with fracture of neck of femur were recruited and the data from them were analyzed in this study. There was no significant difference in the time from surgery to discharge, discharge to cast removal, or cast removal to regaining normal functionality, by implant type and acquisition of the surgeon's recommendation ($p > 0.05$). When comparing long-term clinical outcome by the Oxford Hip Score (OHS) there was no significant difference between the types of implants used ($p = 0.411$). However, OHS was higher in patients who acquired the recommended implant compared to those who did not ($p = 0.004$), and the OHS differed in different age group ($p < 0.001$), employment status ($p = 0.003$), occupational category ($p = 0.017$), breadwinner status ($p = 0.046$), work index ($p = 0.035$) and rehabilitation follow-up status ($p = 0.001$).

Conclusion: Although the surgeon's recommendation should ideally determine access, the restricted availability of PFNA has resulted in inequitable long-term clinical outcomes in patients treated for femoral neck fracture in Teaching Hospital Jaffna.

Keywords: Femoral neck fracture, Proximal femoral nail anti-rotation, Dynamic hip screw, Healthcare inequity, Jaffna