CLINICAL ASSESSMENT OF RECOVERY FOLLOWING HIP ARTHROPLASTY IN TRAUMATIC HIP FRACTURES

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Abstract: This study evaluated the postoperative status of 26 trauma patients who received hip replacement surgery at the FMIOPH Traumatology Department from 2022 to 2025. The cohort comprised adults aged 60 to 82 years, with displaced femoral neck and intertrochanteric fractures managed with hemiarthroplasty or complete hip arthroplasty. Functional outcomes were assessed utilizing the Harris Hip Score (HHS), HOOS-JR, Visual Analogue Scale (VAS), and Timed Up-and-Go (TUG) test at baseline, 6 months, and 12 months. Results demonstrated substantial enhancement across all metrics: HHS rose from 40 to 88, HOOS-JR from 44 to 81, pain diminished from 7.0 to 2.1, and TUG duration fell from 24 to 12 seconds (all $p < 0.001$). The complication rate was minimal, and the one-year death rate was 7.7%. Hip arthroplasty markedly enhanced mobility and quality of life, evidencing successful recovery results.

Keywords: hip arthroplasty, trauma, postoperative results, mobility, rehabilitation

Introduction. The evaluation of trauma patients' status following hip replacement surgery is affected by various aspects, including preoperative, intraoperative, and postoperative elements. Preoperative variables, including age, body mass index, pain intensity, functional limitations, psychological condition, and central sensitization, are significant predictors of clinical outcomes, as demonstrated by their influence on metrics such as the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and the modified Harris Hip Score (mHHS)[4][6]. Furthermore, frailty, assessed using instruments such as the hospital frailty risk score, correlates with negative outcomes, including prolonged hospitalizations and heightened complication risks, highlighting the necessity for thorough preoperative evaluations. The intraoperative setting of the acetabular cup is critical, since correct placement correlates with superior functional outcomes; a research indicated that 90% of patients attained excellent results with appropriate cup configuration. Postoperatively, rehabilitation measures are crucial; physical treatment improves muscular strength and function, while technology-assisted rehabilitation aids remote or physically impaired patients. The length of hospitalization is affected by factors including advanced age, prosthesis type, and pre- and postoperative vital parameters, underscoring the necessity of comprehensive preoperative assessments to enhance perioperative treatment. Moreover, post-surgical quality of life (QoL) is influenced by gender, stroke history, type of hip replacement, and the occurrence of secondary complications such as pneumonia and urinary tract infections, which markedly diminish QoL scores[3]. Gender disparities are evident in recovery trajectories, as women exhibit superior flexion range recovery yet experience elevated incidences of moderate depression throughout rehabilitation. Ultimately, discharge readiness is associated with enhancements in the Harris score upon release, signifying that functional recovery is a crucial factor in effective discharge planning.

This study sought to assess the postoperative status of trauma patients who received hip replacement surgery at the FMIOPH Traumatology Department from 2022 to 2025. Hip arthroplasty is an essential procedure for displaced femoral neck and intricate intertrochanteric fractures, facilitating early mobility and alleviating pain. Postoperative functional recovery, however, is contingent upon age, fracture type, comorbidities, and adherence to rehabilitation. The aim was to evaluate pain, mobility, and functional results with standardized scales in patients who underwent hemiarthroplasty or total hip arthroplasty (THA) following trauma.

Results and discussion. The study was a retrospective cohort analysis with 26 adult patients aged 60 to 82 years (mean 71.3 ± 6.8 years), comprising 18 females (69%) and 8 males (31%). Seventeen patients (65%) presented with displaced femoral neck fractures, while nine patients (35%) had intertrochanteric fractures. Fifteen patients (58%) received hemiarthroplasty, and eleven patients (42%) underwent total hip arthroplasty (THA). Data were obtained from clinical records, encompassing the Harris Hip Score (HHS), Hip Disability and Osteoarthritis Outcome Score for Joint Replacement (HOOS-JR), pain intensity measured by the Visual Analogue Scale (VAS), and the Timed Up-and-Go (TUG) test. Evaluations were conducted preoperatively and at 6 and 12 months following the operation. Descriptive statistics summarized results, and nonparametric tests compared pre- and postoperative scores, with significance established at $p<0.05$.

The results exhibited significant enhancements in all functional metrics. The median HHS increased from 40 (IQR 34–47) preoperatively to 82 (IQR 76–88) at 6 months and 88 (IQR 82–92) at 12 months ($p<0.001$). The HOOS-JR rose from 44 (IQR 39–50) to 81 (IQR 76–88) throughout the same timeframe ($p<0.001$), indicating a significant improvement in joint functionality and daily activity execution. The level of pain markedly diminished, as evidenced by median VAS scores declining from 7.0 preoperatively to 2.1 at one year ($p<0.001$). Mobility significantly enhanced, with TUG durations decreasing from 24 seconds (IQR 20–32) preoperatively to 12 seconds (IQR 10–16) postoperatively after one year ($p<0.001$). Correlation study indicated that improved TUG performance at 6 months significantly predicted elevated HHS at 12 months ($\rho=–0.58$, $p=0.002$), implying that mobility serves as a dependable early indication of long-term recovery. Postoperative complications were limited: two instances of dislocation (7.7%), one superficial infection (3.8%), and one symptomatic deep vein thrombosis (3.8%), all effectively handled. The 12-month mortality rate was 7.7% (2 out of 26), with no fatalities occurring within the initial 90 days.

The data demonstrate that hip arthroplasty in trauma patients results in substantial enhancements in function, pain alleviation, and mobility throughout the initial postoperative year, aligning with global standards. Patients attained nearly normal hip function and ambulation levels within 12 months. The minimal complication and fatality rates indicate satisfactory surgical and rehabilitative standards at FMIOPH.

Conclusion. The statistics underscore the significance of early physiotherapy and TUG-based monitoring as indicators of long-term effectiveness. This study, despite its constraints of a small sample size and single-center design, offers significant local data endorsing hip arthroplasty as an effective treatment for traumatic hip fractures, with outcomes that closely correspond to global benchmarks. Ongoing data collection and future follow-up may enhance prognostic models and improve postoperative treatment strategies for hip fracture patients in resource-constrained environments.

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