#1466 - Free Papers

Dual Mobility Cups In Total Hip Arthroplasty For Hip Fractures

Trauma / Hip & Femur Trauma / Surgical Treatment

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Keywords: Randomized Controlled Trial, Hip Fracture, Femoral Neck Fracture, Total Hip Arthroplasty, Dislocation, Dual Mobility Cups

Background
Dislocation is the most common early complication in patients with displaced femoral neck fractures (FNF) treated with total hip arthroplasty (THA). Dual mobility (DM) cups are thought to reduce this risk, but evidence has been conflicting, and DM THA has also been linked to a higher risk of prosthetic joint infection. To date, no large randomized controlled trials have evaluated the efficacy and safety of DM compared with standard THA in patients with FNF.

Objectives
To assess the clinical effectiveness and safety of DM THA versus standard THA in the treatment of displaced FNF.

Study Design & Methods
We conducted a pragmatic, international, registry-based randomized controlled trial including 1,600 participants aged 65 years or older with displaced FNF. Patients were randomized 1:1 to receive either DM THA or standard THA across 43 hospitals in Sweden and the UK. Recruitment began in January 2020 in Sweden and in December 2022 in the UK, with follow-up completed in April 2025.
The primary outcome was dislocation of the index joint, managed with closed or open reduction, or revision surgery. Secondary outcomes included all-cause reoperation, prosthetic joint infection, death within 90 days and one year, and health-related quality of life measured by the EuroQol 5-Dimensions (EQ-5D). Kaplan–Meier plots and event rate tables described time-to-event outcomes by treatment group. Primary efficacy analyses used Cox proportional hazards regression models adjusted for age, sex, surgical approach, and country. Treatment effects were reported as hazard ratios (HRs) with 95% confidence intervals (CIs) and two-sided P values.

Results
After excluding 34 patients due to protocol deviations, 1,566 participants (DM THA: n=779; standard THA: n=787) were included in the modified intention-to-treat analysis. Their mean age was 76.1 years (SD

6.0), and 1,010 (64.5%) were female. A posterior approach was used in 792 (50.6%), cemented cup fixation in 1,270 (81.1%), and cemented stem fixation in 1,552 (99.1%). Baseline characteristics and operative care were well balanced between groups.
The primary outcome, dislocation within one year, occurred in 10 of 779 (1.3%) participants in the DM group versus 33 of 787 (4.2%) in the standard THA group (HR 0.27; 95% CI 0.13–0.56; P<0.001).
Rates of reoperation, prosthetic joint infection, 90-day and 1-year mortality, and EQ-5D scores were similar between groups.
Subgroup analyses showed that among patients operated through a posterior approach, 10 (2.4%) in the DM group experienced dislocation compared with 27 (7.0%) in the standard THA group. Among those operated through a direct lateral approach, none of 369 patients randomized to DM experienced dislocation, whereas 6 of 402 (1.5%) randomized to standard THA did.

Conclusions
In patients with displaced FNF, DM THA significantly reduced the risk of dislocation compared with standard THA, without increasing prosthetic joint infections. DM THA therefore provides effective protection against the most common early complication following THA in this population.

Updated on 14.11.2025 17:11:00