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Title **Displaced Intracapsular Hip Fractures in Fit, Older People: A Randomized Comparison of Reduction and Fixation, Bipolar Hemiarthroplasty and Total Hip Arthroplasty**

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Aim

To determine the clinical effects and resource consequences of 3 contrasting surgical treatments in fit older patients with displaced intracapsular hip fractures.

Conclusions and results

Most displaced intracapsular hip fractures occur in older unfit patients and are generally treated by uncemented hemiarthroplasty. Orthopedic management remains controversial for patients aged 60 years and older who are otherwise fit.

Reduction and fixation, cemented bipolar hemiarthroplasty, and total hip replacement (THR) are the 3 options usually considered. Mortality rates were similar. Further surgery rates were highest in the fixation groups (39% vs 5% bipolar hemiarthroplasty vs 6% THR). Forty-four (37%) of those allocated fixation suffered fixation failure within 2 years of the index operation. Eleven participants had a hip dislocation, but only 6 of these were allocated arthroplasty. Of the 5 dislocations in the fixation groups, 4 followed revision surgery after fixation failure. Rates of other serious morbidity did not differ significantly between the groups. The fixation group had statistically significantly worse Hip Rating Questionnaire scores than both arthroplasty groups at 4 and 12 months, reflecting poorer scores in all subscales. Those allocated THR had, on average, better overall scores than those allocated hemiarthroplasty, and this was significant at 24 months. Results of the prespecified subgroup analyses suggested that the differences between the groups were more pronounced in those aged 60 to 74 years than in those aged 75 and over. The results for the EQ-5D measure followed a broadly similar pattern. At 4 and 12 months, the THR group had the best scores and the fixation group the worst scores. At 24 months, however, the bipolar hemiarthroplasty groups had the lowest scores, and these were now significantly worse than scores in the THR group. Although fixation was initially less costly when compared to bipolar hemiarthroplasty, this short-term cost advantage was eroded by the significantly increased costs of subsequent hip-related admissions. Compared to bipolar hemiarthroplasty, the cumulative additional costs over 2 years for all hip-related episodes following fixation was £3346 higher (95% CI £1075 to £5618). No significant differences emerge in either the costs of the initial inpatient episode or non-hip-related admissions following the initial episode. A similar pattern of cost differences emerged in comparing fixation with THR, although only the difference in hip-related admission costs was statistically significant. In comparing bipolar hemiarthroplasty and THR, the CIs around the hip-related admission costs were wide, reflecting the small numbers readmitted (4 vs 5), and there were no significant differences between these two groups. Adjustments for age, sex, randomizing to 2 or 3 options, and varying the cost of hip-related admissions and prostheses had little impact on these findings.

Recommendations

Based on our findings, we no longer recommend treating displaced intracapsular hip fractures with reduction and fixation in previously fit older patients. Some form of cemented arthroplasty is our treatment of choice. In this study, THR appeared to perform better than bipolar hemiarthroplasty at 2 years, but ideally this finding needs replication in other trials.

Methods

See Executive Summary link above.

Further research/reviews required

Long-term followup of the arthroplasty patients in this study might help identify the reasons for the deterioration in function in bipolar hemiarthroplasty patients observed at 2-year followup. It would also determine if the satisfactory outcome of THR is maintained.

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