

POLARSTEM[◇] and R3[◇] uncemented total hip arthroplasty (THA) demonstrates safety comparable to hybrid THA in an elderly patient cohort

Patient-reported outcomes also comparable between the two groups at a minimum five-year follow-up



Study overview

- A single-centre, prospective study comparing the outcome of octogenarian patients undergoing uncemented total hip arthroplasty (THA) with those undergoing hybrid THA, implanted between 2009 and 2012 with a minimum five-year follow-up (mean; 80.4 months)
 - 76 patients (mean age; 83.0 years) received uncemented POLARSTEM with R3
 - 67 patients (mean age; 83.6 years) received ExeterTM (Stryker, Exeter, UK) cemented stem and Trilogy CupTM (Zimmer, Warsaw, USA)
- Primary outcome was implant survivorship; standard radiographs were performed at baseline, 6 weeks, 3 months and at 1, 3, 5 and 10 years to assess bone quality, implant fixation and any subsequent loosening



Key results

- In each group, two patients underwent revision surgery (Table); there were no revisions for aseptic loosening in either group
- The uncemented cohort had a significantly lower intraoperative complication rate ($p=0.017$) and a lower transfusion rate ($p=0.02$) than the hybrid cohort (Table)
- There was no difference in average hospital stay between the two cohorts ($p=0.27$)
- Patient-reported outcomes, measured using the Oxford Hip Score (OHS) questionnaire, were also similar between groups

Table. Comparison of complications for each group

Complications	Uncemented THA (n=76)	Hybrid THA (n=67)	p value
Revisions	2	2	NS
Intraoperative complication	1	7	0.017
Major postoperative complication	3	5	NS
Superficial wound infection	6	1	NS
Deep wound infection	0	1	NS
Postoperative periprosthetic fracture	1	1	NS
Dislocation	2	2	NS
Blood transfusion	6	14	0.02



Conclusion

This study demonstrates that uncemented THA is safe and outcomes are comparable to an aged-matched cohort of octogenarian patients undergoing hybrid THA. Therefore, age should not be a barrier for selecting fixation method, rather it is the quality of the bone that should help the surgeon decide.



Considerations

- This is a case-control study (level 3 evidence)
- This independent study is the first comparing fixation methods for THA in octogenarians



Study citation

*Ahmad A, Mirza Y, Evans A, Teoh K. A comparative study between uncemented and hybrid total hip arthroplasty in octogenarians. *J Arthroplasty*. 2018;33:3719–3723.
Available at: [Journal of Arthroplasty](#)