

Prospective Randomised Trial Comparing Mid-term Results of Unlinked Bicompartamental Knee Arthroplasty and Total Knee Arthroplasty

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Objectives

The objective of this study was to compare clinical outcomes of bicompartamental knee arthroplasty (BCA) and total knee arthroplasty (TKA) at 5 years in patients with medial and patellofemoral osteoarthritis. The secondary aim was to compare intraoperative blood loss during BCA and TKA.

Materials and Methods

This is a prospective, randomised trial conducted from October 2007 to January 2009. Forty-eight patients were randomised to receive unlinked, modular BCA or TKA. Clinical and functional outcomes scores were collected preoperatively and at one, two and five years postoperatively. (Bartlett Knee Score, Oxford Knee Score, Knee Society Score) Preoperative and postoperative haemoglobin levels were obtained and total blood loss calculated using the haemoglobin balance method.

Results

Out of 48 patients, 26 underwent BCA and 22 had TKA. At 5 years post-surgery, there was significant improvement across functional scores in both groups ($p < .001$). However, none of the outcome scores were significantly better in the BCA group compared to the TKA group. The drop in haemoglobin levels was 1.55 and 2.30 g/dl for the BCA and TKA groups respectively ($p < .001$). The total amount of blood loss was 397 and 647 ml respectively ($p = .001$).

Conclusion

Unlinked, modular BCA results in similar clinical outcomes as TKA for medial and patellofemoral arthritis in the mid term. Intra-operative blood loss was significantly lower in the BCA group. BCA is a viable option in patients with arthritis limited to the medial and patellofemoral joints with the advantage of reduced intra-operative blood loss but may not result in superior functional outcomes than with TKA.