

Comparative Survivorship and Patient Satisfaction at Five Years in Partial vs Total Knee Arthroplasty: A Randomized Controlled Trial

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INTRODUCTION:

The purpose of this randomized controlled trial was to compare clinical outcomes and survivorship between UKAs and TKAs in patients eligible for either procedure.

METHODS:

A total of 109 knees in 108 patients were enrolled in this randomized controlled trial at two centers. After one withdrawal and three losses to follow-up, 105 knees (56 UKA, 49 TKA) were analyzed at a minimum of two years. A power analysis determined that a sample size of 90 patients (45 patients in each group) was needed to show a clinically significant difference in Knee Society Scores of 6 points at 80% power and an alpha of 0.05. Implant survivorship, revision for any reason, KOOS JR and patient satisfaction were assessed. Kaplan-Meier survival analysis and multivariate regression were used to compare groups.

RESULTS:

At a mean follow-up of 4.9 years (range 2 to 6.7), there were three re-operations in the UKA group (one ORIF of a periprosthetic fracture, a 1-stage exchange for PJI, and one revision to TKA at an outside hospital) and one revision in the TKA group (a polyethylene liner exchange for instability; $p=0.621$). No differences were found in Knee Society Scores (UKA 80.1 vs. TKA 88.6; $p=0.084$) or KOOS JR scores (UKA 82.4 vs. TKA 86.1; $p=0.140$). UKA patients had a significantly greater range of motion (122° vs. 117° ; $p = 0.005$). One patient in the UKA group and three in the TKA group reported dissatisfaction with their outcome (1.8% vs 6.1%; $p=0.32$). Kaplan-Meier analysis revealed no significant difference in survivorship between groups (94.5% vs. 98% at 5 years; log rank $p=0.384$).

DISCUSSION AND CONCLUSION:

Both UKA and TKA demonstrated acceptable patient reported outcomes with a reasonable risk of reoperation. These findings support the continued use of UKA in appropriately selected patients, with outcomes comparable to TKA.