

## Total or Partial Knee Replacement for Medial Osteoarthritis? Early Results from the TOPKAT Trial

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### Summary:

Partial Knee Replacement had better outcomes at 1 yr compared to Total Knee Replacement in a large randomised trial (n=528).

### Abstract:

**Introduction:** Late stage knee osteoarthritis of the medial compartment can be treated using Total Knee Replacement (TKR) or Partial (or Unicompartmental) Replacement (PKR). There is high variation in treatment choice and insufficient evidence to guide selection with no large scale randomised trial. The cost efficacy implications for the healthcare provider are substantial.

**Methods:** TOPKAT is a pragmatic comparative effectiveness RCT of TKR versus PKR which included an expertise component in the design. Patients with medial compartment knee osteoarthritis were included from 27 sites and 63 surgeons. The Oxford Knee Score (OKS) at one year was the primary endpoint. Secondary outcomes included activity scores, patient satisfaction and complications, (including revision and composite "failure" – defined by minimal OKS improvement and/or re-operation). The study was funded by the national Health Technology Assessment Programme (HTA), National Institute of Health Research (NIHR).

**Results:** 528 patients were randomised. Baseline variables between groups were well-balanced. A representative range of implants had been used in the trial when compared to National Joint Registry data. One-year OKS was 1.9 points ([95%CI, 0.2 to 3.6] p=0.029) in favour of PKR. Secondary variables mostly reflected this pattern. 89% of PKR patients reported they would have the operation again compared with 77% of TKR patients (p<0.001). Overall there were 8 (3.1%) complications requiring readmission in the PKR group and 12 (4.8%) in the TKR group. Re-operation was similar between groups with only one complete revision in the PKR group. A composite outcome for failure showed that 11% of PKRs "failed" compared with 15% in the TKR group (risk ratio of 0.72 [95% CI 0.46, 1.11]). The expertise based analysis emphasised the differences between groups.

**Discussion and Conclusion:** Both operations had good early outcome. There was no evidence that TKR was superior to PKR. There were differences from several separate outcomes in favour of PKR. The expertise component was a useful design and emphasised differences. These early results suggest superiority of PKR over TKR for medial compartment knee OA at one year, however, in view of the importance of longer term outcome and failure of knee replacement, five year results from TOPKAT are essential.

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