

Double-Blinded Randomized Controlled Trial of Patellofemoral vs. Total Knee Arthroplasty for Isolated Patellofemoral Osteoarthritis

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Background: Controversy exists over surgical treatment of patellofemoral osteoarthritis (PF-OA). Registers consistently show poor results of patellofemoral arthroplasty (PFA) compared to total knee arthroplasty (TKA), but case series show good results of PFA.

Purpose / Aim of Study: This study aims to compare the clinical and patient-reported outcomes of treatment with PFA and TKA.

Materials and Methods: A double-blinded (for the first year), multi-centre trial with intraoperative randomization between TKA and PFA was performed. Participating hospitals included 205 patients from 2007 until 2014. The inclusion criterion was bone-on-bone on the skyline view. Of the inclusions, 67 patients rejected participation, and a further 38 patients were excluded intraoperatively due to tibiofemoral lesions. The remaining 100 patients were operated in one of five hospitals, 50 received a PFA and 50 a TKA. Clinical, radiological and patient-reported data was collected. This paper reports the 1–7 year results.

Findings / Results: There were 76 females and 24 men. The OKS was 23.8/23.1 for the PFA/TKA groups at inclusion. For the PFA group, the OKS was 39.6, 39.0, 40.2 and 39.5 at 9 months, 1, 3 and 5 years, respectively, and for the TKA group, the OKS was 34.6, 36.3, 36.0 and 35.7 ($p < 0.01$ for all time points before one year, n.s. thereafter). Similar results were found for other PROMs. The flexion range at two years was 130 degrees for the PFA group and 123 for the TKA group ($p < 0.05$).

Conclusions: Patient-reported outcomes were significantly better for PFA compared to TKA for the first year. This difference between PFA and TKA results are also in favour of PFA for all later time points, although non-significant. Patients receiving a PFA had significantly better range of movement. There were more reoperations in the PFA group, but the number of implant revisions was identical.