The Bone & Joint Journal

Journal club: 3 October 2013
Attendees: Mr J. Rushbrook, Mr N. Pennington, Mr D Henderson, Mr M. Mokawem, Mr H. Kapoor, Mr R. Sales, Mr L. Toth, A. White, T. Tordoff.
Leeds General Infirmary, Great George Street, Leeds, United Kingdom

Theme: Knee

1. **Cavaignac E, Lafontan V, Reina N, Pailhe R, Warmy M, Laffosse JM, Chiron P.** Obesity has no adverse effect on the outcome of unicompartmental knee replacement at a minimum follow-up of seven years. *Bone Joint J* 2013;95-B:1064-8
2. **van der Voort P, Pijls BG, Nouta KA, Valstar ER, Jacobs WCH, Nelissen RGHH.** A systematic review and meta-regression of mobile-bearing versus fixed-bearing total knee replacement in 41 studies. *Bone Joint J* 2013;95-B:1209-16.

Cavaignac E, Lafontan V, Reina N, Pailhe R, Warmy M, Laffosse JM, Chiron P. Obesity has no adverse effect on the outcome of unicompartmental knee replacement at a minimum follow-up of seven years. *Bone Joint J* 2013;95-B:1064-8

Reviewer Mr J Rushbrook

Summary
Purpose
To establish whether patient body mass index (BMI) influences outcome following unicompartmental knee replacement (UKR).
Methods
A retrospective, single-centre consecutive cohort study including all patients who underwent UKR from January 1990 to December 2004. Patients were contacted by telephone in December 2011 providing a minimum follow up of seven years. The patients were subdivided into groups according to weight (< or ≥ 82kg) and BMI (< or ≥ 30 kg/m^2). Clinical outcome was assessed using the Knee Society Score (KSS) and requirement for revision surgery and indication recorded. Kaplan-Meier analysis for the whole series and according to weight and BMI was performed with rates of survival compared using a log-rank test. Clinical outcomes were compared using chi-squared tests. Pearson's correlation

coefficients were used to measure strength of correlation between the clinical scores and BMI.

Results
290 UKR's were performed in 254 patients. 185 patients (212 UKR's) were contacted, 18 patients (19 UKR's) were lost to follow-up and 51 patients (59 UKR's) had died. There was no statistical difference between KSS and BMI. Pearsons coefficient for the association between KSS and BMI was r = 0.17 (p = 0.3) indicating they are not related. 15 patients (15 UKR's) underwent revision with no statistical significance in revision rates between patient groups with high or low BMI. There was no difference in survivorship according to weight.

Conclusions
Increased weight and BMI are not risk factors for poor outcome following UKR.

Critique
Strengths
There were a large number of patients in the study with a reasonable rate of follow up. All patients during the time period were included in the study.

Weaknesses
This was a single centre study with three surgeons, one of who would not perform UKR on patients with weight > 82 kg or BMI > 30 kg/m^2. There was therefore an element of selection bias. Obesity was not stratified. There may have been a larger failure rate in patients with very high BMI e.g. > 40 kg/m^2.

van der Voort P, Pijls BG, Nouta KA, Valstar ER, Jacobs WCH, Nelissen RGHH. A systematic review and meta-regression of mobile-bearing versus fixed-bearing total knee replacement in 41 studies. *Bone Joint J* 2013;95-B:1209-16.

Summary

Purpose
This study aimed to establish whether mobile-bearing (MB) total knee replacement (TKR) increased implant longevity and improved clinical outcome when compared to fixed-bearing (FB) TKR.

Methods
Randomised controlled clinical trials (RCT) comparing MB and FB TKR were identified from multiple databases. The inclusion criteria was for RCT's comparing MB and FB primary TKR for osteoarthritis or rheumatoid arthritis with a minimum of 5 year follow up which included revision rate, functional outcome score or patient-reported outcome measurement. Primary outcome measurements revision rate for any reason, aseptic loosening and wear. Secondary outcome measurements included functional outcome scores, patient-reported outcome measurements, radiological evaluation and implant migration. All data were combined for random-effects meta-analysis.

Results
41 studies were included in the study, which comprised 3024 MB and 3155 FB TKRs. Meta-analyses for the primary outcomes in studies with a minimum follow-up of five and ten years revealed no differences in revision rates for any reason, or for aseptic loosening or wear. In comparison with FB TKR, rotating platforms showed a significantly better range of movement. The anteroposterior gliding and rotating platform showed a significantly worse range of movement compared with FB TKR. There were no significant differences in KSS clinical and functional scores between MB and FB TKRs. With regards to patient-reported outcome measures, there were significantly higher SF-12 physical scores for the MB TKR but no differences in SF-12 mental scores, OKS or WOMAC scores. Radiological evaluation revealed no differences for the presence of radiolucencies or osteolysis around the prosthesis.

Conclusions
There were no clinically relevant differences in terms of revision rates, range of movement, KSS, OKS, SF-12 or radiological parameters between MB and FB TKR.

Critique
Strengths
This study included large numbers of patients in a well designed analysis using fixed criteria and scoring mechanisms.

Weaknesses
The study only included data from randomized control trials, and did not include registry data. This would have increased numbers further with regards to failure rate. Follow-up was not long enough to establish whether there was a difference in aseptic loosening in the long term, which is the primary aim of the MB TKR.