

AB145. 1. A comparison functional outcomes after total knee arthroplasty with the attune knee prosthesis and its predecessor matched for surgeon, surgical technique

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Background: Total knee arthroplasty (TKA) success is guided by patient reported validated outcome measures (PROMs). Implant design is continually evolving. It is of utmost importance to study new designs to ensure an excellence of care for the forecasted increases in patients undergoing TKA.

Methods: This study is a multi-centre prospective comparative study. The study compares the Attune[®] knee prosthesis and its predecessor PFC[®]. This study focuses on operations performed by a single surgeon with a single surgical technique. The primary outcome of this study is to analyse differences in patient reported outcomes after total knee arthroplasty. Secondary outcome measures are to analyse rates of venous thromboembolic events (VTE), periprosthetic joint infection (PJI) and non-infective reoperation rate. Inclusion criteria were patients who had TKA between March 2011 and June 2016 performed

by a single surgeon with posterior stabilised designs and concurrent patellar resurfacing. PROMs measures included SF-12 for general wellbeing and knee specific scores included were the OKS and KOOS. Data was prospectively recorded in a dedicated arthroplasty clinic pre-operatively. Post-operatively they filled out scores six months and two years.

Results: The Attune[®] prosthesis performed better than PFC[®] in KOOS at 6 months (mean =81.9 *vs.* 77.85, $P=0.014$). The Attune[®] prosthesis performed better than PFC[®] in KOOS at 2 years (mean =85.54 *vs.* 81.77, $P=0.043$). There were no significant differences in PROMs between designs at any time points otherwise. Over the 5-year period there were 773 TKAs performed on 703 patients. The infection rate was 0.8%, non-infective reoperation rate was 0.6% and there was 1.9% rate of thromboembolic events. There were no differences between rates of VTE or PJI between designs. There was a trend toward statistical significance linking the PFC prosthesis to non-infective reoperation rate ($P=0.051$).

Conclusions: The Attune[®] prosthesis performs superiorly to the PFC[®] in terms of knee specific scoring systems when matched for surgeon and surgical technique. There is a trend toward increased prosthesis malfunction with PFC[®] however further study is required to establish significance.

Keywords: Attune press fit condylar; patient reported validated outcome measures; total knee arthroplasty (TKA); total knee replacement (TKR); Oxford knee score (OKS); knee injury and osteoarthritis outcome score (KOOS)

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