Title **Systematic Review of Unicompartmental Knee Arthroplasty for Unicompartmental Osteoarthritis**

Agency **ASERNIP-S, Australian Safety and Efficacy Register of New Interventional Procedures – Surgical**

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Aim

To assess the safety and efficacy of unicompartmental knee arthroplasty (UKA) compared to total knee arthroplasty (TKA) and high tibial osteotomy (HTO).

Conclusions and results

The review included 14 comparative studies (9 studies compared UKA and TKA; 6 studies compared UKA and HTO). Many of the studies had relatively small samples, substantial losses to followup, and relatively short followup. Not all studies reported all outcomes, further reducing the size of the evidence base. Knee function and postoperative pain was difficult to compare across studies due to variability in knee and pain scores. UKA appeared to be similar to TKA and HTO at 5-year followup despite considerable variability. Range of motion was significantly better in UKA compared to TKA. Overall complication rates after UKA and TKA appeared similar, although deep vein thrombosis (DVT) was reported more often after TKA than UKA. There may have been more complications after HTO than UKA; main complications reported were DVT and delayed healing or wound infections. Fewer than half of the studies reported revision and knee survival. Survival of UKA prostheses ranged from 85% to 95%, compared to survival of 90% or more for TKA prostheses. Survivorship for HTO appeared to be less than 85%. Hence, it was unclear whether there were more revisions after UKA than TKA up to 10 years after implantation, but it appeared there were fewer revisions of UKA compared to HTO.

Recommendations

The ASERNIP-S Review Group agreed on the following classifications and recommendations concerning the safety and efficacy of unicompartmental knee arthroplasty:

Evidence rating – The evidence base in this review is rated as average.

Safety – UKA is considered at least as safe as TKA and HTO.

Efficacy – In terms of function, UKA appears to be at least as efficacious as TKA and HTO. In terms of knee survival, the efficacy of UKA compared to TKA and HTO cannot be determined.

Methods

MEDLINE, EMBASE, Cochrane Library, and Current Contents were searched from inception to April 2004. The Clinical Trials Database (US), NHS CRD (UK) NHS HTA (UK), National Research Register (UK), and Current Controlled Trials (mRCT) were also searched in May 2004. Reference sections of retrieved articles yielded additional articles. Studies included for review were RTCs and nonrandomized comparative studies assessing patients treated with UKA compared with either TKA or HTO. Efficacy outcomes included knee function, pain scores, range of motion, operative time, length of stay, knee failure, and revision. Safety outcomes included complications, eg, DVT and infection. Our researcher extracted data from the studies by using standardized data extraction tables developed a priori and checked by a second researcher. Relative risks or weighted mean differences with 95% confidence intervals were calculated for some outcomes in individual RCTs.

Further research/reviews required

Current trials in progress should reduce some uncertainty surrounding the treatment of osteoarthritis in the knee. The continuing contribution of data to national joint registries will aid in validating the current trends, particularly in knee survival after UKA or TKA.

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