

A Meta-Analysis On Return To Sports Following Unicompartmental Knee Arthroplasty

Orthopaedics / Knee & Lower Leg / Joint Replacement - Primary

Ganan Radhakrishnan, Ahmed Magan, Babar Kayani, Ricci Plastow, Ajay Asokan, Fares Haddad

University College London Hospital, London, United Kingdom

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Background

Unicompartmental Knee Arthroplasty (UKA) is an effective surgical treatment for end-stage arthritis confined to a single compartment of the knee joint. Within the United Kingdom, UKA accounts for 8-10% of all knee arthroplasties undertaken, with over 10,000 primary UKAs performed annually. Recent studies have shown UKA in professional athletes enabled a return to competitive sports with a relatively low risk of complications at short-term follow-up. UKA is conventionally undertaken in patients that are younger and more active, with increased physiological demands compared to those undergoing a TKA. Often these patients would like to return to sports (RTS) following surgery, but there is no uniform consensus on the time at which this may be safely achieved. Existing studies are limited to retrospective case series studies with intra-study heterogeneity in the operating surgeon's postoperative advice to patients, rehabilitation protocols, intensity of sporting activity and complications recorded. An improved understanding of time to RTS following UKA would facilitate more informed preoperative discussions between healthcare professionals and patients, provide evidence-based timeframes for postoperative rehabilitation and aid monitoring of postoperative complications in these patients. The objective of this meta-analysis was to determine the time and proportion of patients that RTS after UKA.

Objectives

The following outcomes in patients undergoing UKA were assessed in this study: time to RTS; proportion of patients that RTS following surgery; patient reported outcomes after RTS; and complications after RTS.

Study Design & Methods

A search was performed on PUBMED, MEDLINE, EMBASE, and the Cochrane Library for trials on UKA and RTS, in the English language, published from the inception of the database to December 2020. In addition, a manual search was performed of relevant sports medicine and orthopaedic journals, and the bibliographies reviewed for eligible trials. All clinical trials reporting on return to RTS following UKA were included. The PRISMA guidelines for reporting systematic reviews and meta-analyses were used to undertake this study.

Results

This meta-analysis included 11 studies with 749 patients that reported on RTS after UKA. Six studies with 432 patients demonstrated an overall pooled proportion of 48.1% (95% CI: 36.3 – 60.2%) of patients that RTS at three months after surgery. Seven studies with 443 patients demonstrated an overall

pooled proportion of 76.5% (95% CI: 63.9 – 87.1%) of patients that RTS at six months after surgery. Overall, 92.7% (95% CI: 85.8 – 97.4%) of 749 patients were able to RTS at four years after surgery. Excellent patient-reported functional outcomes were reported and low risk of complications with RTS after UKA.

Conclusions

This study found that 48.1% of patients were able to RTS at three months after surgery and 76.5% were able to RTS at six months after UKA. Pooled proportion analysis showed that over 90% of patients undergoing UKA were able to RTS at 48 months after surgery. The majority of patients that were able to RTS after UKA did so to a lower level of intensity than their preoperative level. RTS after UKA was associated with excellent patient-reported functional outcomes and low risk of complications at short-term follow-up.