

# Patients at a reduced risk of venous thromboembolism and persistent pain after partial versus total knee replacement

June 13 2019

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The results of a study presented today at the Annual European Congress of Rheumatology (EULAR 2019) demonstrate reduced risk of venous thromboembolism and persistent pain, but increased risk of revision in partial versus total knee replacement in patients with osteoarthritis.

In severe knee osteoarthritis, there are two main types of surgical intervention; partial or [total knee replacement](#). In partial knee replacement only the part of the knee that has osteoarthritis is replaced, whereas in total knee replacement the entire joint is replaced. Although partial knee replacement has been associated with significant advantages, high rates of revision have been reported. This is where the implant components are removed, added or replaced. While partial knee replacement is cheaper than total knee replacement, there is uncertainty as to which surgery is better for [patients](#). This is reflected by variability in the use of partial knee replacement with, for example, 50% of patients eligible for either procedure in the UK but less than 10% receiving a partial knee replacement.

"Our study clearly demonstrates significant short-term advantages of partial knee replacement over total knee replacement and although the long-term risk of revision is higher for partial knee replacement, this is likely, at least partly, explained by a greater willingness to revise a partial knee replacement", said Edward Burn, DPhil student, Centre for Statistics in Medicine, University of Oxford, United Kingdom. "The

results of our study based on real-world data will complement those from a forthcoming randomised controlled trial comparing the two procedures, the Total Or Partial Knee Arthroplasty Trial (TOPKAT)".

The study by Mr Burn and colleagues from across Europe and the United States, replicated the design of the TOPKAT trial in real-world data and included 32,379 and 250,377 patients who received partial or total knee replacement respectively. They found partial knee replacement is associated with a 25-50% reduction in the 60-day risk of venous thromboembolism after surgery, and a 15-30% lower risk of persistent pain after surgery. However, partial knee replacement was also associated with an increased risk of revision, with the five-year risk of revision increasing from around 2.5-5% for total knee replacement to 5-7.5% for partial knee replacement.

"There is a lack of clinical consensus on the profile of patients with osteoarthritis suitable for partial versus total knee replacement," said Professor Hans Bijlsma, President, EULAR. "We welcome these data as they will help inform both patients and physicians to support an individualised approach to care."

This multi-database propensity-score matched cohort study included data from four US claims databases (IBM MarketScan Commercial Database (CCA), IBM MarketScan Medicare Supplemental Database (MDCR), Optum de-identified Clinformatics Datamart Extended—Date of Death (Optum), and Pharmedics) and one UK primary care electronic medical record database (THIN). All people aged 40 years or older at the time of first [knee](#) replacement surgery were included and followed for up to five years. Outcomes included short-term (60-day) post-operative complications (infection, venous thromboembolism, mortality, readmission), opioid use in the three to 12 months post-surgery as a proxy for persistent pain, and five-year revision risk. Propensity score matching (up to 1:10) was used to control for all available confounders,

and negative control outcomes and calibration to minimise the impact of residual confounding.

**More information:** Prieto-Alhambra D, Burn E, Weaver J, et al. Partial knee replacement is associated with a lower risk of venous thromboembolism and opioid use than total knee replacement but increased risk of long-term revision: a multinational, multi-database, propensity score-matched, cohort analysis including over 280,000 patients. EULAR 2019; Madrid: Abstract OP0174.

Provided by European League Against Rheumatism

Citation: Patients at a reduced risk of venous thromboembolism and persistent pain after partial versus total knee replacement (2019, June 13) retrieved 14 July 2023 from <https://medicalxpress.com/news/2019-06-patients-venous-thromboembolism-persistent-pain.html>

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