

Operating Time And The Risk Of Early All-Cause Revision And Infection In Primary Total Hip Replacement Surgery – An Observational Study Form The Swedish Arthroplasty Register

Orthopaedics / Knee & Lower Leg / Joint Replacement - Secondary

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Background

Long operating time in total hip replacement (THR) surgery is associated with an increased risk of infection and other complications while the impact of short operating time is less often reported.

Objectives

To compare the risk of early first-time revision for all causes and infection after primary total hip replacement based on operating time

Study Design & Methods

We included 62,026 primary THRs due to osteoarthritis reported to the Swedish Arthroplasty Register September 2021-2024 and we followed them until December 31st 2024. Operating time was divided, based on quartiles, into short (20-52minutes, n=15,522), medium (53-86 minutes, n=30,883) and long (87-240 minutes, n=15,621). Using Kaplan-Meier method, we estimated the 3-year cumulative revision rate (CRR) with 95% confidence interval (CI) due to all causes and infection depending on operating time. In multiple Cox regression analyses we analyzed operating time on the risk of revision due to all causes and infection and adjusted for potential confounding factors.

Results

The CRR for all causes was lower at 3-years for short operating time (CRR 1.8, CI 1.6-2.1) while the CRR for long operating time (CRR 2.3, CI 2.0—2.6) was similar to medium (CRR 2.3, CI 2.1-2.5). The CRR for infection was lower at 3-years for short operating time (CRR 1.0, CI 0.8-1.2) compared to medium (CRR 1.4, CI 1.2-1.5) and long (CRR 1.3, CI 1.1-1.5). In the Cox regression, short operating time was associated with decreased risk of revision all causes and infection (Hazard Ratio (HR) 0.73, CI 0.61-0.86 and HR 0.71, CI 0.57-0.88 respectively) with medium as reference.

Conclusions

Our results showed a lower risk of early revision with short operating time for all causes and infection while long operating time had similar impact as medium operating time. Except from the impact of reduced period of open wound exposure, patients with uncomplicated anatomy operated by experienced surgeons

might be over-represented in the group with short operating time.

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