

Fast-track programs in total hip and knee replacement at Swedish hospitals

Influences on safety, outcome and patients' experiences

Akademisk avhandling

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Professor Torben Baek Hansen,
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Avhandlingen baseras på följande delarbeten

- I. No increase in readmissions or adverse events after implementation of fast-track program in total hip and knee replacement at 8 Swedish hospitals: An observational before-and-after study of 14,148 total joint replacements 2011-2015. Berg U, Bülow E, Sundberg M, Rolfson O. Acta Orthop 2018 Oct; 89(5): 522-527.
- II. Influence of fast-track programs on patient-reported outcomes in total hip and knee replacement (THR/TKR) at Swedish hospitals 2011–2015: an observational study including 51,169 THR and 8,393 TKR operations. Berg U, W-Dahl A, Rolfson O, Naucelér E, Sundberg M, Nilsson A. Acta Orthop 2020 Feb 28:1-7 (Epub ahead of print)
- III. Influence of fast-track programs in total hip and knee replacement at Swedish hospitals 2011-2015 on 2-year risk of revision and mortality. Berg U, W-Dahl A, Nilsson A, Naucelér E, Sundberg M, Rolfson O. In manuscript.
- IV. Fast-track program of elective joint replacement in hip and knee - patients' experiences of the clinical pathway and care process. Berg U, Berg M, Rolfson O, Erichsen Andersson A. J Orthop Surg Res 2019;14(1):186

SAHLGRENSKA AKADEMIN
INSTITUTIONEN FÖR KLINISKA VETENSKAPER



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ABSTRACT

Background: Fast-track is a care concept that aims to enhance recovery after surgery, resulting in shortened perioperative hospital stay. By using evidence-based methods in preparation and perioperative care the clinical pathway and care process is optimized to achieve early discharge from hospital based on functional criteria. The implementation of fast-track care programs at Swedish hospitals that perform total hip and knee replacements (THR and TKR) is explored in this thesis based on 3 observational and 1 qualitative study.

Methods: A questionnaire was sent to Swedish hospitals that performed elective THR and TKR operations during the period 2011-2015 to determine whether a fast-track program had been introduced and if so when. Based on the questionnaire operations performed within a fast-track program were compared with those performed within a non-fast-track care program in 3 observational register-based studies. Data was obtained from the Swedish Hip and Knee Arthroplasty Registers (SHAR and SKAR). In the first observational study which covered 8 hospitals, all readmissions and new contacts with the healthcare system within 3 months were requested from the regional patient register. The risk of readmission and adverse events within 90 days after surgery was calculated using regression analyses. The second observational study used data from SHAR and SKAR to compare the 1-year Patient-Reported Outcomes (PROs) from the fast-track and non-fast-track groups on a national level. The patient-reported health-related quality of life, pain and satisfaction outcomes were analysed for both THR and TKR operations by using multivariable regression analysis with adjustments. The PROs for TKR also included the knee-specific instrument KOOS. In the third observational register study the 2-year risk of revision and mortality was compared based on register data by using Kaplan-Meier survival analysis and multivariable Cox regression models with adjustments. The risk was expressed by calculating the hazard ratio (HR) with 95% confidence interval (CI). Finally, in the fourth study a qualitative approach was used to explore patients' experiences of the care process from decision to operate through to follow-up 3 months after surgery. Semi-structured individual interviews were conducted with 24 patients from 3 hospitals with a fast-track care program: 14 women and 10 men, 13 with THR and 11 with TKR. The mean age was 65 years (44-85). An inductive content analysis method was used.

Results: No increase in readmissions or AE could be identified within fast-track programs in elective THR and TKR at 8 Swedish hospitals. The implementation of fast-track resulted in a decrease in median length of stay (LOS) from 5 to 3 days in both THR and TKR. The PROs were in favour of fast-track for both THR and TKR. However, the differences were small. The fast-track program was associated with an increased risk of revision within 2 years after THR (HR 1.19, CI 1.03-1.39) but not after TKR (HR 0.91, CI 0.79-1.06). The risk of death within 2 years was lower with fast-track for TKR (HR 0.85, CI 0.74-0.97) but not for THR (HR 0.96, CI 0.85-1.09). The qualitative study showed that patients' need for information and participation varied a lot. The recovery phase was filled with questions about unfulfilled expectations and need for improved feedback and follow-up after discharge from the hospital. The importance of person-centred care was a pervasive theme in all phases of the fast-track pathway.

Conclusion: Fast-track programs in elective THR and TKR at Swedish hospitals are safe and associated with a patient-reported outcome that is at least as good as with conventional care. An increased risk of revision after THR, due mainly to infections, raises concerns and requires investigation and analysis. The clinical pathway and care process could be improved by adopting a more person-centred approach.

Keywords: Fast-track, enhanced recovery, hip replacement, knee replacement, care program