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Platinum Priority – Prostate Cancer

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Work Disability After Robot-assisted or Open Radical Prostatectomy: A Nationwide, Population-based Study

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Abstract

Background: Robot-assisted radical prostatectomy (RARP) has been associated with reduced bleeding and shorter hospital stays than open retropubic radical prostatectomy (RRP), but it is unclear whether these differences translate into shorter absence from work. **Objective:** To investigate short- and long-term rates of work disability following RARP and RRP.

Design, setting, and participants: We conducted a nationwide population-based cohort study of 2571 men of working age treated with RARP or RRP between 2007 and 2009 identified in the National Prostate Cancer Register of Sweden. Information about physician-certified sick leave and disability pension was retrieved from the Swedish Social Insurance Agency through 2012.

Outcome measurements and statistical analysis: We used Cox regression to calculate time to return to work (RTW, or duration of sick leave) after surgery and used generalised estimating equations to analyse days lost from work (because of sick leave and disability pension) after RTW.

Results and limitations: Men treated with RARP returned to work after a median of 35 d, whereas the corresponding time for RRP was 48 d ($p < 0.001$). The difference was seen early; within the first month, men treated with RARP returned to work nearly four times faster than men treated with RRP (adjusted relative RTW rate 3.76; 95% confidence interval [CI], 3.04–4.66). During a median of 3.6 yr after return to work, men treated with RARP lost fewer days from work per person-year than men treated with RRP—12 d versus 15 d—but the association was not statistically significant ($p = 0.10$). The adjusted rate ratio was 1.08 (95% CI, 0.82–1.42). One limitation is the nonrandomised design of this study.

Conclusions: RARP was associated with a faster RTW compared with RRP, but the surgical method did not influence long-term rates of work disability in terms of days lost from work after RTW.

Patient summary: We compared disease-related absence from work between two surgical methods for the removal of the prostate. Robot-assisted surgery was associated with a faster return to work compared with open surgery but did not influence absence from work in a long-term perspective.

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1. Introduction

Radical prostatectomy (RP) is the most common treatment for localised prostate cancer (PCa). For many years, open retropubic RP (RRP) was the standard surgical method, but the uptake of robot-assisted RP (RARP) has been rapid. In 2009, more than half of all prostatectomies in Sweden [1] and the United States [2] were robot assisted. Previous research, often based on retrospective observations from single centres of excellence, reported short-term advantages of RARP compared with RRP such as reduced perioperative bleeding and shorter postoperative hospital stays [3,4], but it is unclear whether these differences translate into better recovery and a faster return to daily activities, including less absence from work.

Around 100 000 men of working age are diagnosed yearly with PCa in Europe [5]. A prompt return to work (RTW) and limited work loss after cancer treatment are important for more than financial reasons. For many men, work is a central aspect of life that enables social participation and gives life meaning [6]. RTW after cancer can be viewed as a symbol of recovery, marking the return to normality [7,8].

The Swedish setting provides a unique opportunity to study disease-related work loss, hereafter referred to as *work disability*, including sick leave and disability pension. All residents working in Sweden are entitled to sickness benefits as a part of a national social insurance system. Using data from the Swedish Social Insurance Agency (SSIA) linked to the National Prostate Cancer Register (NPCR), we conducted a nationwide study of men treated with RARP or RRP. We hypothesised that men treated with RARP return to work more quickly and experience less long-term work

disability than men treated with RRP because of the minimally invasive technique in RARP.

2. Patients and methods

2.1. Study population and data collection

This population-based cohort study is based on data from the NPCR, to which data on tumour stage, prostate-specific antigen (PSA), Gleason score, and primary treatment are reported [9]. The completeness of NPCR exceeds 98% compared with the Swedish Cancer Register, to which reporting is mandated by law [10,11]. By record linkage, the NPCR has been enriched with information from several national registers, forming the Prostate Cancer Data Base Sweden (PCBaSe 2.0) [9]. For the purpose of the present study, we used information from several registers. First, the Longitudinal Integration Database for Health Insurance and Labour Market Studies [12] provided sociodemographic data. The Patient Register [13] provided information about lymph node dissection, hospital stay, and comorbidities, further classified into the Charlson Comorbidity Index [14]. We obtained data on sick leave and disability pension from the MiDAS database [15]. To assess background rates of work disability, we included a comparison cohort of PCa-free men matched on birth year and county of residency, randomly selected from the Total Population Register [16].

All men with nonmetastatic PCa (clinical stage T1–T3, N0/NX, M0/MX, and PSA <50 ng/ml at the time of diagnosis), treated with primary RP between 1 January 2007 and 31 December 2009, reported to the NPCR or recorded in the Patient Register, were identified ($n = 6396$). We applied exclusion criteria leading to a final population of 2571 men treated with RARP or RRP in 43 hospitals (Fig. 1). Nine hospitals had introduced RARP between 2002 and 2008. We extracted the surgical method from the NPCR or from the Patient Register if the information was not available in the NPCR (36 hospitals reported surgical method to the NPCR from 2007, the remaining 7 from 2008). In one hospital, men with missing information in the NPCR were coded as RARP based on data from an administrative database (at this site, 99% of all prostatectomies in men aged <65 yr were robot assisted).

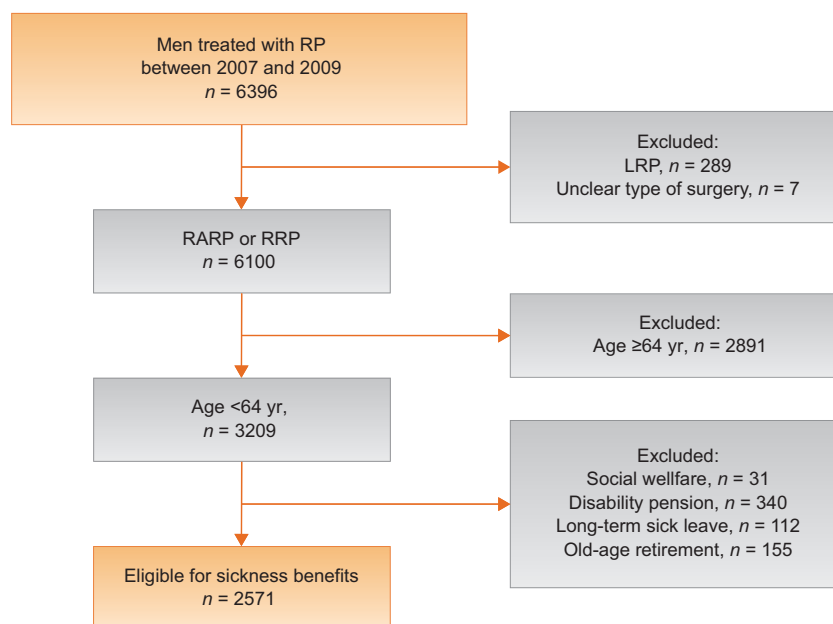


Fig. 1 – Flow chart of the study population selection. Long-term sick leave was defined as ongoing sick leave starting <2 mo before surgery. The standard age of retirement in Sweden is 65 yr. LRP = laparoscopic radical prostatectomy; RARP = robot-assisted radical prostatectomy; RP = radical prostatectomy; RRP = retropubic radical prostatectomy.

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