

Treatment for Early Prostate Cancer - Reducing Side Effects Without Jeopardizing Cure

AKADEMISK AVHANDLING

Som för avläggande av medicine doktorexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligen försvaras i Hjärtats aula, Blå Stråket 5, Sahlgrenska Universitetssjukhuset, fredagen den 22 oktober, klockan 9.00

av **Elin Axén**

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Avhandlingen baseras på följande delarbeten

- I. Steineck G, Bjartell A, Hugosson J, Axén E, Carlsson S, Stranne J, Wallerstedt A, Persson J, Wilderäng U, Thorsteinsdottir T, Gustafsson O, Lagerkvist M, Jiborn T, Haglind E, Wiklund P. **Degree of Preservation of the Neurovascular Bundles During Radical Prostatectomy and Urinary Continence 1 Year after Surgery.** *European Urology* 2015; 67: 559-568.
- II. Axén E, Arnsrud Godtman R, Bjartell A, Carlsson S, Haglind E, Hugosson J, Lantz A, Månsson M, Steineck G, Wiklund P, Stranne J. **Degree of Preservation of Neurovascular Bundles in Radical Prostatectomy and Recurrence of Prostate Cancer.** *European Urology Open Science* 2021; 30: 25-33.
- III. Axén E, Arnsrud Godtman R, Hugosson J, Månsson M, Stranne J. **Additional value of systematic biopsies for preoperative assessment in MRI-detected prostate cancer** (*in manuscript*).
- IV. Axén E, Stranne J, Månsson M, Holmberg E, Arnsrud Godtman R. **Biochemical recurrence after radical prostatectomy - a large, comprehensive, population-based study with long follow-up** (*submitted*).

SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR KLINISKA VETENSKAPER



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ABSTRACT

The overall aim of this thesis is to gain further knowledge of how surgical choices affects the outcome for patients undergoing radical prostatectomy for early prostate cancer; including preoperative evaluation and long-term prognosis after surgery. Within the non-randomized Laparoscopic Prostatectomy Robot Open trial, comparing the outcomes between open and robot-assisted radical prostatectomy, we evaluated the effect of preservation of the neurovascular bundles on postoperative incontinence (**paper I**), and recurrence of prostate cancer (**paper II**). Findings in Magnetic Resonance Imaging; targeted and systematic prostate biopsies were compared to findings in radical prostatectomy specimens in men diagnosed with prostate cancer within the randomized, controlled GÖTEBORG Prostate Cancer Screening 2 Trial (**paper III**). Long-term risk for recurrence and subsequent treatment after radical prostatectomy was evaluated within the population-based Western Sweden study of Opportunistic Prostate Cancer Screening database (**paper IV**).

Preservation of neurovascular bundles decreases the risk for postoperative incontinence, while increasing positive surgical margins; balancing these outcomes for the individual is essential. Systematic biopsies seldom contribute additional information of importance for surgical decisions and should be avoided if the only purpose is preoperative mapping. After radical prostatectomy, the risk for recurrence remains at 15 years. Length of follow-up should be related to life expectancy, rather than to time since surgery.

Keywords: incontinence, prostate cancer, radical prostatectomy, recurrence