Early Prostate Cancer
On prognostic markers and predictors of treatment outcome after radical prostatectomy

Akademisk avhandling

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The thesis is based on the following papers:

I) Khatami A, Damber J-E, Lodding P, Pihl CG, Hugosson J.
Does initial surveillance in early prostate cancer reduce the chance of cure by radical prostatectomy? A case control study.
Scand Journal of Urology and Nephrology. 2003; 37(3):213-7.

II) Khatami A, Pihl CG, Norrby K, Hugosson J, Damber J-E.
Is tumour vascularity in prostate core biopsies a predictor of PSA recurrence after radical prostatectomy?
Acta Oncologica. 2005; 44(4):362-8.

III) Khatami A, Aus G, Damber J-E, Lilja H, Lodding P, Hugosson J.
PSA doubling time predicts the outcome after active surveillance in screening-detected prostate cancer: results from the European Randomized Study of Screening for Prostate Cancer, Sweden section.
International Journal of Cancer. 2007 Jan 1;120(1):170-4.

IV) Khatami A, Hugosson J, Wang W, Damber J-E.
Ki-67 in screen-detected, low-grade, low-stage prostate cancer relation to PSADT, Gleason score and PSA relapse after radical prostatectomy.
Manuscript

V) Khatami A, Aus G, Damber J-E, Lilja H, Wessman C, Hugosson J.
PSA doubling time (PSADT) is influenced by prostate volume and the presence of high-grade cancer. Results from the European Randomized Study of Screening for Prostate Cancer (ERSPC) Sweden section.
Manuscript

GÖTEBORG UNIVERSITY

Early Prostate Cancer
On prognostic markers and predictors of treatment outcome after radical prostatectomy

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Abstract

The incidence of prostate cancer (PC) has increased by 4.6% annually in Sweden during the past ten years. Today's clinically used prognostic markers are not accurate enough to separate the potentially life-threatening tumours from the insignificant ones in 50-80% of newly diagnosed PCs.
Curative treatment of all men with early PC results in substantial overtreatment and subsequently a large number of men would suffer from the side effects of this treatment. There is an urgent need for more accurate prognostic tools to distinguish the insignificant PC from the potentially lethal PC in its early stage.

We studied whether an initial period of surveillance in these patients might decrease their chance of cure by radical prostatectomy.
The prognostic significance of tumour vascularity (TVC) from biopsy was evaluated.
The outcome in 270 consequent screening-detected PC patients under active surveillance was studied and PSA doubling time (PSADT) as a predictor of outcome was evaluated.
The proliferation marker Ki-67 was evaluated as a prognostic marker.
The factors that influence the variations in PSADT were explored in the entire cohort in the screening study and in the men with PC.

The results revealed that up to two years of surveillance in patients with early PC did not reduce the chance of cure by radical prostatectomy.
TVC and Ki.67 were both significantly correlated to PSA relapse after prostatectomy. However, these markers could not improve the prognostic information generated from routinely used markers.
Some 61% of patients were treatment-free after a follow-up period of 63 months in the active surveillance cohort. No patient has developed bone metastasis or died from PC. Fourteen patients died for reasons other than PC during the follow-up. PSADT was the only significant predictor of PSA relapse after radical prostatectomy in this cohort of patients.
PSADT is mainly influenced by prostate volume and the presence of high-grade PC.

The active surveillance approach offers an alternative to active treatment in patients with early-detected, low-stage, low-grade PC. PSADT seems to be a useful, reliable and discriminating prognostic marker of disease progression and active treatment during the follow-up of patients with screening-detected early PC who opt for the active surveillance strategy.
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