Research in Prostate Cancer data Base Sweden (PCBaSe) Nation-wide, population-based cohort

Pär Stattin, MD PhD
professor urology, Umeå University
chair NPCR, PI PCBaSe
Prostate Cancer data Base Sweden (PCBaSe)

Cancer Register
25 889 cases

Multi-Generation Register
40 528 men with male siblings

Cause of Death Register
59 196 cases

Prescribed Drug Register
118 600 cases

Patient Register
137 108 in-patient events

LISA database
144 210 cases

NCPR
144 220 cases + 5 controls/case

Personal identity number

Van Hemelrijck Int J Epidemiol 2012
Smörgåsbord

- treatment patterns
- rare adverse effects
- outcome studies
- familiar aggregation
Bone scan for low risk cancer

![Graph showing the proportion of different risk categories over years of diagnosis.](Makarov JNCI 2013)
Increased use of active surveillance for very low risk cancer
Age vs treatment locally advanced cancer
Range in 10 year life expectancy vs age, comorbidity and education.
Age 70-74 years

CCI 0
High education
Middle
Low

CCI 1
High education
Middle
Low

CCI 2
High education
Middle
Low

CCI 3+
High education
Middle
Low

0 20 40 60 80 %
Age 75-80 years

**CCI 0**
High education
Middle
Low

**CCI 1**
High education
Middle
Low

**CCI 2**
High education
Middle
Low

**CCI 3+**
High education
Middle
Low

0 20 40 60 80 %
Age, comorbidity vs life expectancy and proportion treated

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Comorbidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;65</td>
<td>CCI 0</td>
</tr>
<tr>
<td>&lt;65</td>
<td>CCI 1</td>
</tr>
<tr>
<td>&lt;65</td>
<td>CCI 2</td>
</tr>
<tr>
<td>&lt;65</td>
<td>CCI 3+</td>
</tr>
<tr>
<td>65–69</td>
<td>CCI 0</td>
</tr>
<tr>
<td>65–69</td>
<td>CCI 1</td>
</tr>
<tr>
<td>65–69</td>
<td>CCI 2</td>
</tr>
<tr>
<td>65–69</td>
<td>CCI 3+</td>
</tr>
</tbody>
</table>

- Estimated 10-year survival
- Curative treatment
Androgen deprivation therapy and risk of cardiovascular disease

• androgen deprivation therapy standard treatment metastatic disease
• adverse effects
• case mix
Androgen deprivation therapy and cardiovascular disease

Relative Risk (95% CI)

RCT

Observational study

Denham et al.
0.79 (0.48-1.31)
Roach et al.
1.23 (0.76-2.01)
Efstathiou et al.
0.78 (0.56-1.10)
Studer et al.
0.91 (0.70-1.18)
Schröder et al.
0.97 (0.42-2.23)
Bolla et al.
1.30 (0.71-2.38)
Messing et al.
3.26 (0.35-30.2)
D’Amico et al.
1.02 (0.50-2.09)
Van Hemelrijck et al.
2.38 (2.12-2.66)
Van Hemelrijck et al.
1.64 (1.51-1.77)
Martin-Merino et al.
1.34 (0.99-1.82)
Keating et al.
1.69 (1.37-2.09)
Keating et al. (SEER)
1.24 (1.08-1.42)
Jespersen et al.
1.28 (1.03-1.58)
Azoulay et al.
1.39 (1.07-1.81)
Hu et al.
1.29 (1.07-1.56)
Temporal association ADT, previous CVD and cardiovascular event

O´Farrell J Clin Oncol accepted
Familiar aggregation of prostate cancer, all risk categories

- General population
- Brothers of PCa cases
- Brothers of PCa cases, age at dx < 60 yrs
- Brothers of PCa cases, age at dx 60 – 75 yrs
- Brothers of PCa cases, age at dx > 75 yrs
Risk of intermediate and high risk cancer
Large range in outcome according to risk category

![Graphs showing cumulative probability of death over time since diagnosis for low, intermediate, and high risk categories.](Rider Eur Urol 2010)
Outcome low risk cancer
Cause of death 60 years at diagnosis
Charlson comorbidity index 0

Low risk

Controls

- PCa
- Other cancers
- CVD
- Other specified causes

Van Hemelrijck BJUI Accepted
Conclusions and perspectives

• Cancer quality register vs The Cancer Register
• Linkages cost-efficient way of data enhancement
  – defining case mix comorbidity, educational level
  – follow-up
  – post marketing surveillance adverse events
• Control population
• Selective follow-up questionnaires, data collection
• Biological samples
Large range in outcome according to risk category
Treatment patterns

Proportion treated with curative intent

Age <70, CCI 0–1

Age <70, CCI 2+

Age 70–80, CCI 0–1

Age 70–80, CCI 2+

Year of dx 2001 2006 2012

2001 2006 2012
Kurativ behandling
män 75-80 år, CCI=0
Treatment for erectile dysfunction

Swedish men diagnosed with PCa
1 July 2006 and 31 Dec 2009

- Radical Prostatectomy (n = 7810)
- Radiotherapy (n = 4070)
- Active surveillance (n = 4435)
- Watchful waiting (n = 1999)