Gleason score predicted mortality rate to 20 years for untreated early prostate cancer


Clinical impact ratings GP/FP/Primary care ★★★★★☆ Oncology ★★★★★☆☆

In patients with localized prostate cancer, what is the 20 year survival rate?

**METHODS**

**Design:** inception cohort followed for a median of 24 years (range 16–33 y).

**Setting:** 35 acute care hospitals and 2 Veterans Affairs medical centres in Connecticut, USA.

**Patients:** 767 men 55–74 years of age (mean age 69 y) diagnosed with clinically localized prostate cancer between 1 January 1971 and 31 December 1984 who were treated with observation or immediate or delayed androgen withdrawal therapy. Exclusion criteria were surgery, radiation therapy, brachytherapy, known metastatic disease, concomitant cancer, or survival <6 months.

**Prognostic factors:** age at diagnosis, treatment method, comorbid conditions, and tumour grade according to Gleason score (range 2–10; 10 = most undifferentiated).

**Outcomes:** death from prostate cancer or other competing causes.

**MAIN RESULTS**

Prostate cancer mortality rates were 33 deaths per 1000 person years (95% CI 28 to 38) in the first 15 years of follow up and 18 deaths per 1000 persons years (CI 10 to 29) after 15 years. After adjusting for Gleason score, the rates before and after 15 years did not differ (rate ratio 1.1, CI 0.6 to 1.9). Men with low grade tumours had low risk of dying from prostate cancer over the next 20 years; the mortality rate increased with increasing Gleason score (table).

**CONCLUSIONS**

In patients with localized prostate cancer, mortality rates were similar before and after 15 years when tumour grade at diagnosis was taken into account. Gleason score predicted a 20 fold difference in survival.

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**Discussion**

Death from prostate cancer by tumour grade at diagnosis*

<table>
<thead>
<tr>
<th>Gleason score</th>
<th>Number of prostate cancer deaths</th>
<th>Deaths per 1000 person years(95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2–4</td>
<td>10.7</td>
<td>6 (2 to 11)</td>
</tr>
<tr>
<td>5</td>
<td>16.6</td>
<td>12 (6 to 19)</td>
</tr>
<tr>
<td>6</td>
<td>83.4</td>
<td>30 (23 to 37)</td>
</tr>
<tr>
<td>7</td>
<td>63.4</td>
<td>65 (49 to 83)</td>
</tr>
<tr>
<td>8–10</td>
<td>54.4</td>
<td>121 (90 to 156)</td>
</tr>
</tbody>
</table>

*Gleason score range 2–10; 10 = most undifferentiated.