Factors associated with current and severe physical side-effects after prostate cancer treatment: what men report


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**Factors associated with current and severe physical side-effects after prostate cancer treatment: what men report**

L Steentjes, S Siesling, FJ Drummond, JG van Manen, L Sharp, A Gavin

**Background:**
Prostate cancer (PCa), the second most common male cancer in the developed world is increasing. Ongoing side-effects post-treatment were reported by 75% of PCa survivors in population-based research (Ref below).

**Aim:**
To identify patient-related and disease-related characteristics that are associated with a range of current and ever experienced severe physical side-effects among prostate cancer survivors.

**Methods:**
Questionnaire survey to 6,937 PCa survivors identified from 2 population based Cancer Registries on the Island of Ireland (National Cancer Registry of Ireland (RoI) and N. Ireland Cancer Registry (NI)) diagnosed 2-18 years previously. Survey included symptoms at diagnosis, primary treatments and physical side-effects - ever and current at time of questionnaire completion. Clinical staff checked eligibility of survivors for (I) aware of their PCa diagnosis, (II) well enough to complete a survey, (III) usually a resident of RoI/NI and (IV) able to understand English.

**Results:**
3348 Men (54) Responded

<table>
<thead>
<tr>
<th>% reporting</th>
<th>Urinary incontinence</th>
<th>Loss of libido</th>
<th>Impotence</th>
<th>Bowel problems</th>
<th>Breast changes</th>
<th>Hot flushes</th>
<th>Fatigue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early n = 1700</td>
<td>14.9</td>
<td>19.6</td>
<td>53</td>
<td>66.7</td>
<td>14</td>
<td>17.3</td>
<td>5.1</td>
</tr>
<tr>
<td>Late n = 689</td>
<td>8.1</td>
<td>10.3</td>
<td>42.4</td>
<td>56.2</td>
<td>8.4</td>
<td>4.3</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**Figure 1a: ‘Current’ side-effects in early and late disease (%)**
- ‘Current’ and ‘Ever Had’ side-effects were more common in late than early disease (Fig 1a).
- Severe side effects were common with impotence highest at 40% in early patients and 53% in late PCa survivors (Fig 1b).

**Factors associated with ‘current’ side-effects in early disease**
- Radical Prostatectomy (RP) was associated with a higher risk of incontinence and Erectile dysfunction. Brachy therapy (BT) was associated with a lower risk of fatigue while Active Surveillance /Watchful waiting was associated with a lower risk of incontinence, sexual dysfunction, and fatigue (p<0.05).
- Multiple comorbidities at diagnosis and complications post-biopsy were associated with a higher risk of bowel problems (p<0.05).

**Conclusions:**
Treatment is the most important factor associated with post-treatment side-effects with radical prostatectomy associated with most side effects and most severe side effects of all treatments. After treatment, various other factors such as pre-treatment function, comorbidities and a history of biopsy complications were strongly associated with a higher risk of side-effects. These findings may be used to better inform PCa patients and physicians about the potential side-effects associated with specific treatments and patients may be at risk of these as well as informing strategies for post-treatment follow-up and monitoring. This could ultimately lead to better informed treatment decision-making and better support after treatment.

**METHODS continued**
Outcome variables post treatment were: incontinence, loss of libido, impotence, bowel problems, breast changes, hot flushes and fatigue.

Men were grouped according to ‘early’ stage I/II and Gleason Grade (GG) 2-7 at diagnosis (localised) and ‘late’ stage III/IV and any GG at diagnosis (n=689) (locally advanced/advanced) disease at diagnosis. Univariate and multivariate logistic regression analysis were performed to identify patient and disease-related factors associated with current side-effects of any severity and (ii) severe side-effects ever experienced.

Survivors with other combinations of stage and Gleason Grade (GG), or unknown stage or GG, were excluded from analysis (n=959) leaving 2,389 PCa survivors for analysis.

Potential explanatory variables: age and comorbidities at diagnosis, highest level of education completed, jurisdiction (RoI), pre-treatment symptoms, biopsy complications, TURPs and treatment ever had. Univariate and multivariate logistic regression analysis were performed to identify patient and disease-related factors associated with side-effects.

**Results:**

<table>
<thead>
<tr>
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<th>Urinary incontinence</th>
<th>Loss of libido</th>
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<th>Hot flushes</th>
<th>Fatigue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>8.6</td>
<td>25.8</td>
<td>40</td>
<td>39.6</td>
<td>52.7</td>
<td>8.4</td>
<td>4.3</td>
</tr>
<tr>
<td>Late</td>
<td>8.4</td>
<td>4.3</td>
<td>1.1</td>
<td>8.6</td>
<td>21.4</td>
<td>16.1</td>
<td>29.1</td>
</tr>
</tbody>
</table>

**Figure 1b: ‘Severe side-effects ever experienced’ in early and late disease (%)**

**Factors associated with ‘severe’ side-effects ever experienced in early disease**
- RP was associated with a higher risk of hot flushes and fatigue and the side-effects mentioned for ‘current’. BT was associated with a lower risk of impotence (p<0.05).

**Factors associated with ‘current’ side-effects in late disease**
- Complications post-biopsy were associated with a higher risk of sexual dysfunction (p<0.05).
- Comorbidities at diagnosis is associated with a higher risk of incontinence, bowel problems and fatigue (p<0.05).

**Factors associated with ‘severe’ side-effects ever experienced in late disease**
- Complications post-biopsy were associated with a higher risk of incontinence, hot flushes and fatigue (p<0.05).
- Multiple comorbidities at diagnosis was associated with a higher risk of bowel problems and fatigue (p<0.05).

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