Sexual Function in Men Receiving Androgen Deprivation Therapy for Prostate Cancer: A Controlled Comparison

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• Effects of primary treatment such as surgery and radiation for prostate cancer (PC) on sexual function have been well-characterized.

• Effects of androgen deprivation therapy (ADT) on sexual function in PC patients less well known.

• Few controlled studies of ADT effects on sexual function in PC.
Study Purpose

- Examine sexual function in PC patients receiving ADT compared to patients treated with radical prostatectomy only and men with no history of cancer
Methods: Study Design

• Prospective, longitudinal study design

• 3 groups of men:
  – Diagnosed with prostate cancer undergoing ADT (ADT+)
  – Diagnosed with prostate cancer treated with radical prostatectomy (ADT-)
  – Men with no history of cancer (CA-)

• Matched on:
  – Age (within 3 years)
  – Education (same level)
  – Time since diagnosis (ADT+ and ADT-)
Methods: Eligibility Criteria

All participants
- ≥ 18 years of age
- ≥ 6th grade education
- Able to speak/read English
- Able to provide consent

ADT-
- Non-metastatic PC
- No treatment besides surgery
- No testosterone supplementation

ADT+
- Non-metastatic or asymptomatic metastatic PC
- Scheduled to receive at least 12 mos. of ADT
- No previous ADT

CA-
- No cancer history besides non-melanoma skin cancer
- No testosterone supplementation
• Recruitment:
  – ADT+ and ADT- recruited at Moffitt Cancer Center and James A. Haley VA
  – CA- recruited via marketing firm contact list

• Participants competed self-report questionnaires:
  – prior to ADT and 6 months later (ADT+)
  – similar 6-month interval (ADT- and CA-)
Measures: EPIC

- Expanded Prostate Cancer Index Composite (EPIC) (Wei, et al., *Urology*, 2000, PMID:11113727)
  - Multi-item scale used to measure health-related QOL in men with PC
  - Four summary domains assess disease-specific aspects of prostate cancer and its therapies

<table>
<thead>
<tr>
<th></th>
<th>Function</th>
<th>Bother</th>
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<tr>
<td>Urinary</td>
<td></td>
<td></td>
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<tr>
<td>Bowel</td>
<td></td>
<td></td>
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<tr>
<td>Hormonal</td>
<td>X</td>
<td></td>
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<tr>
<td>Sexual</td>
<td>X</td>
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</tbody>
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Methods: Procedures

• Sexual function items:
  – Erectile function
  – Sexual desire
  – Ability to climax

• Hormonal function score

• Serum testosterone
|                          | ADT+  
n = 49 | ADT-  
n = 44 | CA-  
n = 33 |
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<thead>
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<tbody>
<tr>
<td>Age (years)</td>
<td>69</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>Caucasian</td>
<td>92%</td>
<td>96%</td>
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<tr>
<td>Married</td>
<td>71%</td>
<td>81%</td>
<td>82%</td>
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<td>College graduate</td>
<td>38%</td>
<td>42%</td>
<td>55%</td>
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<tr>
<td>Income ≥ 40K</td>
<td>53%</td>
<td>66%</td>
<td>58%</td>
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<td>Time since diagnosis (years)</td>
<td>3.9</td>
<td>5.5</td>
<td>n/a</td>
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Statistical Analyses

- Repeated measures analysis of variance to examine changes in
  - Sexual function
  - Hormonal function
  - Serum testosterone
Results: Erectile Function

significant group x time effect, p < .0001
Results: Sexual Desire

significant group x time effect, $p = .0009$
Results: Ability to Climax

significant group x time effect, $p < .0001$
Results: Hormonal Function

![Graph showing hormonal function with significant group x time effect, p < .0001](image-url)
Results

- Serum testosterone levels demonstrated differential effects consistent with receipt of ADT

significant group x time effect, $p < .0001$
Conclusions

- Findings suggest ADT affects sexual function in multiple domains

- Longer-term studies needed to determine full extent of dysfunction associated with ADT

- Whether sexual function is comparable to CA- and ADT-patients after cessation of ADT and recovery of normal serum testosterone levels remains to be determined
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