Prostate Cancer Patient-Reported Outcomes: What Do We Know and What is Still Unknown

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Why Do We Study PROs?

• To help patients make an informed decision on treatment
  – Prostate cancer: many treatment options – similar cure rates, but different side effects (confusing)
  – Clinicians need high-quality research data to communicate to their patients

• Helps clinicians treat side effects -- thereby improving the lives of cancer survivors
Quality-of-Life Outcomes in Men Treated for Localized Prostate Cancer

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PROs in Prostate Cancer

• Relatively well-studied
• Multiple validated instruments
  – Some in multiple languages
• Numerous prospective cohort studies examined PROs after prostate cancer treatments
WHAT DO WE KNOW?
(WHAT DO PATIENTS NEED TO KNOW?)
Surgery vs. Radiotherapy

• PROS-QA Study
  – 1,201 patients
  – Recruited from: Harvard (Beth-Israel), Cleveland Clinic, Wash U, Michigan, UCLA, MD Anderson
  – Validated instrument: Expanded Prostate Cancer Index Composite (EPIC-26)
  – Sexual function, urinary incontinence, urinary obstruction, bowel function, hormone

PROS-QA: Sexual Function

Nerve sparing better recovery

Erections (ability, quality, frequency), orgasm
PROS-QA: Urinary Function

A Prostatectomy
- Nerve-sparing
- Non-nerve-sparing

B Radiotherapy
- Radiotherapy alone
- Radiotherapy plus NHT

C Brachytherapy
- Brachytherapy alone
- Brachytherapy plus radiotherapy, NHT

Burning, bleeding, weak stream, frequency
PROS-QA: Bowel Function

Urgency, frequency, blood, pain, incontinence
PROS-QA: Hormonal/Vitality

- Hot flashes, breast, energy, weight
What Do We Not Know (1)

- How to communicate these research results to patients?
PROS-QA: Sexual Function

Nerve sparing better recovery

Erections (ability, quality, frequency), orgasm
What Do We Not Know (1)

• How to communicate these research results to patients?
  – What is a clinically-meaningful difference?
    • 1/2 standard deviation (yes/no)
  – What does this “feel” like to the patient?
<table>
<thead>
<tr>
<th>Quality-of-Life Domain and EPIC Questionnaire Item</th>
<th>Prostatectomy</th>
<th>External-Beam Radiotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>2 Mo</td>
</tr>
<tr>
<td></td>
<td>(N=603)</td>
<td>(N=571)</td>
</tr>
<tr>
<td>Urinary function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation or obstruction†</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysuria</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Hematuria</td>
<td>&lt;1</td>
<td>1</td>
</tr>
<tr>
<td>Weak stream</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Frequency</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Incontinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaking &gt;1 time per day</td>
<td>4</td>
<td>52</td>
</tr>
<tr>
<td>Frequent dribbling</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Any pad use</td>
<td>1</td>
<td>67</td>
</tr>
<tr>
<td>Leaking problem†</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Overall urinary problem†</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Bowel function†</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urgency</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Frequency</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Fecal incontinence</td>
<td>&lt;1</td>
<td>1</td>
</tr>
<tr>
<td>Bloody stools</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Rectal pain</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Overall bowel problem</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Sexual function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor erections</td>
<td>14</td>
<td>88</td>
</tr>
<tr>
<td>Difficulty with orgasm</td>
<td>12</td>
<td>62</td>
</tr>
<tr>
<td>Erections not firm†</td>
<td>17</td>
<td>90</td>
</tr>
</tbody>
</table>
What Do We Not Know (2)

• Does treatment affect everyone the same way?
  – Of course not

• Patient with normal sexual function at baseline: “what are my chances of preserving function after treatment?”
  – Patient with poor sexual function at baseline
PROS-QA: Sexual Function

Nerve sparing better recovery

Erections (ability, quality, frequency), orgasm
Functional Levels

• Prostate Cancer Symptom Indices

Functional Levels

- Prostate Cancer Symptom Indices

Functional Levels

- Prostate Cancer Symptom Indices

What Do We Not Know (3)

• Outcomes of “real world” patients
• Most PRO studies are published by a few institutions
  – Are these results generalizable to your patient?
  – My results are likely different than Dr. Sanda’s
  – Are results the same across countries?
• Need studies including patients from smaller hospitals
• Need every physician everywhere to collect PRO as part of clinical care
Collecting PRO in Clinic

• Weekly assessment of PROs during RT
  – Start easy: paper
  – While patient waiting to see physician
  – Real-time feedback to physician for symptom management
  – Allows me to describe outcomes to my (potential) patients

• Easy buy-in from patients, nurses
Patient Form  
Rectal and Urinary OTV/Status Check Symptom Sheet

*Name: ____________________________

*MR: ____________________________

*Date: ____________________________

**Treated Dose: ____________________________

### Rectal Symptoms

**In the past week have you...**

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all</th>
<th>Occasionally (once or twice)</th>
<th>Fairly frequently (several times)</th>
<th>Frequently (at least once a day)</th>
<th>Very Frequently (several times a day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Had diarrhea or loose watery stools?</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Had a sense of urgency that you move your bowels?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>3. Had any tenderness or pain when you move your bowels?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>4. Had bleeding with your bowel movements?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>5. Had abdominal cramping or pain?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>6. Passed much or from your rectum?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>7. Had the urge to move your bowels, but had nothing to pass?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
</tbody>
</table>

### Urinary Symptoms

**In the past week...**

<table>
<thead>
<tr>
<th>Question</th>
<th>Very easy</th>
<th>Fairly easy</th>
<th>Slow, but I don't have to strain or bear down</th>
<th>Very slow, and I do have to strain or bear down</th>
<th>Very slow, and I have to strain or bear down hard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How easy has your urine flow been?</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. How often did you urinate at night?</td>
<td>Seldom or never</td>
<td>Once a night</td>
<td>2 to 3 times a night</td>
<td>More than 3 times a night</td>
<td></td>
</tr>
<tr>
<td>3. How often did you urinate?</td>
<td>4 or fewer times a day</td>
<td>5 to 8 times a day</td>
<td>9 to 12 times a day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. How often have you felt pain or burning during urination?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>5. How often did you have the feeling that it is urgent that you pass your urine?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
<tr>
<td>6. How much control did you have over your urine?</td>
<td>Had complete control (no leaking)</td>
<td>Leaked urine, but only at certain times</td>
<td>Leaked urine most of the time</td>
<td>Little or no control</td>
<td></td>
</tr>
<tr>
<td>7. How often did you leak urine?</td>
<td>Not at all</td>
<td>Occasionally (once or twice)</td>
<td>Frequently (at least once a day)</td>
<td>Very Frequently (several times a day)</td>
<td></td>
</tr>
</tbody>
</table>
Collecting PRO in Clinic

• Collect PRO during treatment for management of acute symptoms

What Do We Not Know (4)

• PROs of new treatments
• Comparative outcomes of modern treatment options
  – New exciting treatment technologies: robotic surgery, Cyberknife, proton radiation treatment
    • Do these really improve quality of life?
Rapid Technology Advances

Almost complete diffusion of IMRT in 8 years

Rapid Technology Advances

By 2009: 64% robotic

What Do We Not Know (4)

- PROs of new treatments
- Comparative outcomes of modern treatment options
  - New exciting treatment technologies: robotic surgery, Cyberknife, proton radiation treatment
    - Do these really improve quality of life?
- New treatments (e.g. abiraterone, enzalutamide)
  - Do current instruments fully capture relevant PROs?
- PRO researchers need to keep up with the rapidly evolving treatments – timely results
What Do We Not Know (5)

• Other potentially important aspects:
  – Regret
  – Anxiety about disease

• For each patient, what is his most important domain?

• Can we use PROs to help individualize the care of prostate cancer patients and survivors?
Summary

• Patient reported outcomes play a central role in helping patients make informed decisions in prostate cancer
• Large body of literature, much is still unknown
• Continued research (clinical, methodology) will directly impact the lives of cancer survivors