Prostate Cancer Results Study Group
2014 – Results Comparing Treatment of Prostate Cancer

Peter Grimm, DO
Prostate Cancer Center of Seattle
Seattle, WA

About This Review Study

- 28,000+ prostate studies were published between 2000 and June 2013
- 1,127 of those studies featured treatment results
- 233 of those met the criteria to be included in this review study (*1st & 2nd group)
- Some treatment methods are under-represented due to failure to meet criteria
Prostate Cancer Results Study Group

• David Bostwick, MD – Bostwick Laboratories
• David Crawford, MD – University of Colorado, Denver, CO
• Brian Davis, MD – Mayo Clinic, Rochester, MN
• Adam Dicker, MD – Thomas Jefferson University, Philadelphia, PA
• Steven Frank, MD – MD Andersen, Houston, TX
• Peter Grimm, DO – Prostate Cancer Center of Seattle, WA
• Jos Immerzeel, MD – De Prostaat Kliniek, the Netherlands
• Stephen Langley, MD – St Luke's Cancer Centre, Guildford, England
• Alvaro Martinez, MD – William Beaumont, Royal Oak, MI
• Mira Keyes, MD – BC Cancer Agency, Vancouver, Canada
• Patrick Kupelian, MD – UCLA Medical Center, Los Angeles, CA
• Robert Lee, MD – Duke University Medical Center, Durham, NC

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• Stefan Machtens, MD – University Bergisch, Gladbach, Germany
• Jyoti Mayadev, MD – UC Davis, Davis, CA
• Brian Moran, MD – Chicago Prostate Institute, Chicago, IL
• Gregory Merrick, MD – Schiffler Cancer Center, Wheeling, WV
• Jeremy Millar, MD – Alfred Health and Monash University, Melbourne, Australia
• Mack Roach, MD – University of California - San Francisco, CA
• Richard Stock, MD – Mt. Sinai, New York, NY
• Katsuto Shinohara, MD – University of California - San Francisco, CA
• Mark Scholz, MD – Prostate Cancer Research Institute, Marina del Ray, CA
• Edward Weber, MD – Prostate Cancer Center of Seattle, Seattle, WA
• Anthony Zietman, MD – Harvard Joint Center, Boston, MA
• Michael Zelefsky, MD – Memorial Sloan Kettering, New York, NY
• Jason Wong, MD – University of California - Irvine, CA
• Robyn Vera, DO – Radiant Oncology, Lacey, WA
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• **Problem**: Patients, physicians, and carriers need a simple, unbiased means to compare the cancer control rates of modern prostate cancer treatment methods

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• **Expert Panel from key treating disciplines**: Surgery, External Radiation, Internal (or Brachytherapy), High Frequency Ultrasound, and Proton Therapy

• **Purpose**: Comprehensive comparative review of the current literature on prostate cancer treatment
Criteria for Inclusion of Article*

1. Patients should be separated into Low, Intermediate, and High Risk
2. Success must be determined by PSA analysis
3. All treatment types considered: seeds (brachy), surgery (standard or robotic), IMRT (intensity-modulated radiation), HIFU (high-frequency ultrasound), CRYO (cryotherapy), protons, HDR (high-dose-rate brachytherapy)
4. Article must be in a peer-reviewed journal

* Expert panel consensus

Criteria for Inclusion of Article (Cont’d)

5. Low-risk articles must have a minimum of 100 patients
6. Intermediate-risk articles must have a minimum of 100 patients
7. High-risk articles, because of fewer patients, need only 50 patients to meet criteria
8. Patients must have been followed for a median of 5 years
9. For additional criteria information, contact lisa@prostatecancertc.com
% Articles Meeting Criteria

<table>
<thead>
<tr>
<th>RP</th>
<th>EBRT/IMRT</th>
<th>Cryo</th>
<th>Brachy/HDR</th>
<th>Robot RP</th>
<th>Proton</th>
<th>HIFU</th>
</tr>
</thead>
<tbody>
<tr>
<td>9%</td>
<td>13%</td>
<td>5.4%</td>
<td>21%</td>
<td>5.3%</td>
<td>24%</td>
<td>8%</td>
</tr>
<tr>
<td>28/320</td>
<td>40/302</td>
<td>2/37</td>
<td>64/306</td>
<td>4/76</td>
<td>4/17</td>
<td>3/38</td>
</tr>
</tbody>
</table>

Total of 1,127 treatment articles. Some articles addressed several treatments and were counted as separate articles for each treatment. *A few articles evaluated other/minor treatments and are not listed here. These calculations only include primary accepted articles, and do not include secondary acceptance totals.

Low-Risk Group Definition

- Clinical stage: T1 or T2a,b
- Gleason score: ≤6
- PSA: ≤10 ng/mL
Low-Risk Results

- Treatment Success vs. % PSA Progression Free
- Years from Treatment

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• Numbers within symbols refer to references

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Low-Risk Results – Weighted

- Treatment Success vs. % PSA Progression Free
- Years from Treatment

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Low-Risk Results – Weighted
>40 months’ follow-up or <100 patients

Intermediate-Risk Patient Definition

• Zelefsky definition
  - Only 1 factor
    - Clinical stage: T2c
    - Gleason score: >7
    - PSA: >10 ng/mL

• D’Amico definition
  - PSA 10–20 ng/mL, Gleason score 7, or Stage T2b
Intermediate-Risk Results – Weighted

![Graph showing treatment success and PSA progression free rates over time for different treatment combinations including EBRT, Seeds + ADT, Robot RP, Seeds Alone, EBRT, Seeds + ADT, Hypo EBRT, Seeds Alone, Surgery, EBRT, CRYO, HIFU, HDR, EBRT, Seeds + ADT, and Protons.]

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Favorable vs Unfavorable*
Intermediate Risk

Favorable
- Single feature
- Gleason 3+4=7
- <50% of biopsy cores +

Unfavorable
- All other intermediate

*Zumsteg et al (MSKCC): New Risk Classification system for therapeutic decision making. PCA pts undergoing dose escalated EBRT. European Urology 64 p.895-902 2013 Favorable vs Unfavorable
### Intermediate-Risk Results – Weighted Favorable vs Unfavorable*

#### Treatment Success

<table>
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<tr>
<th>% PSA Progression Free</th>
<th>Years from Treatment</th>
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</thead>
<tbody>
<tr>
<td>90</td>
<td>1</td>
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<tr>
<td>80</td>
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<td>60</td>
<td>4</td>
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<tr>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>40</td>
<td>6</td>
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</tbody>
</table>

### Intermediate-Risk Results

>40 months’ follow-up or <100 patients

#### Treatment Success

<table>
<thead>
<tr>
<th>% PSA Progression Free</th>
<th>Years from Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1</td>
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<tr>
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<td>50</td>
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</tbody>
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Intermediate-Risk Results – Weighted
>40 months’ follow-up or <100 patients

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High-Risk Patient Definition

• Zelefsky definition
  - 2 or more factors
    - Gleason score: >7
    - PSA: 10–20 ng/mL
    - Clinical stage: T1c–2b

• D'Amico
  - Gleason score: 8–10
  - PSA: >20 ng/mL

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High-Risk Results – Weighted
>40 months’ follow-up or <100 patients

![Graph showing treatment success rates for different therapies.]

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Numbers within symbols refer to references


Observations

- For most low-risk patients, most therapies will be successful
- There appears to be a higher cancer control success rate for brachytherapy over EBRT and surgery for all groups. Patients are encouraged to look at graphs and determine for themselves
- Serious side-effect rates must be considered for any treatment
For More Information/Slides

Peter Grimm, DO
peter@grimm.com

Or contact PCRS member
Prostate Cancer Center of Seattle website
www.Prostatecancertreatmentcenter.com