Adjuvant or Salvage Radiotherapy after Radical Prostatectomy: Which is better?

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Massachusetts General Hospital
Harvard Medical School

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Definitions

**Adjuvant**
- No evidence of disease status post RP
- Consider RT for significant risk of residual disease in the surgical bed based on pathology

**Salvage**
- Rising, persistently elevated PSA or LR s/p RP
- Consider RT if determine that PSA or residual disease is from a local source
The Pathology Report

Will the patient fail?

If so where?

Is adjuvant therapy appropriate?

Systemic or local?
The Pathology Report

Size and extent of cancer

Gleason grade: primary, secondary, tertiary

Organ or specimen confined

Surgical margins

Seminal vesicles

Lymph nodes
Who fails after radical prostatectomy and who fails locally?

Hopkins 2003
Local failure or distant?
Local failure or distant?

D  D + L

D  L
What proportion of PSA failures have a local component?

TRUS re-biopies in men with rising PSA post-RP
All with negative bone and CT scans

<table>
<thead>
<tr>
<th>Author</th>
<th>Date</th>
<th>N</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connolly</td>
<td>1996</td>
<td>114</td>
<td>54%</td>
</tr>
<tr>
<td>Leventis</td>
<td>2007</td>
<td>99</td>
<td>41%</td>
</tr>
</tbody>
</table>

40-50% under-represents reality because of sampling error
Local recurrence after radical prostatectomy

UCSF 1996

Of those with biopsy proven local recurrence:

66% originally had positive margins
34% originally had negative margins
14% ECE
20% OC
Who fails after radical prostatectomy and who fails locally?

Positive surgical margins

Edelstein et al 1996
Molecular assessment of surgical margins after radical prostatectomy

Theodorescu et al 1999

30 consecutive radical prostatectomies

• Margins assessed by H & E
• Prostatic fossa assessed by 5 biopsies and RT-PCR for PSMA
Molecular assessment of surgical margins after radical prostatectomy

4 of 16 patients (25%) with organ-confined disease by H&E had positive molecular margins.

9 of 9 patients (100%) with positive H&E margins had positive molecular margins.
Sites of local recurrence after prostatectomy

UCSF 1996: US-guided rebiopsy study of 114 men with rising PSA post-op

A. Anastomotic site 66%
B. Bladder neck 16%
C. Posterior to trigone 13%
Local recurrence after RP

Various studies utilizing MRI or US have been published

- Perianastomotic region (~30-66%)
- Rectovesical region (<50%)
- Residual seminal vesicles (22%)
- Anterior or lateral surgical margins (9%)

Sella et al, Radiology 2004
Sites of local recurrence after prostatectomy

Bladder neck

Peri-anastomotic

Retrovesical

Sella et al, Radiology 2004
Perianastomotic recurrence

Sella et al, Radiology 2004
Rectovesical recurrence

Sella et al, Radiology 2004
Recurrence in prostatic fossa

Sella et al, Radiology 2004
Seminal vesicle bed recurrence

Sella et al, Radiology 2004
Surgical margin recurrence

Sella et al, Radiology 2004
Sites of local recurrence after prostatectomy
RTOG 96-01 Guidelines
Post-operative simulation - 2D
Post-operative simulation - 3D
Post-operative simulation - IMRT
### Postop simulation: can ‘experts’ agree on CTV?

*Michalski et al IJROBP 2010*

11 radiation oncologists
2 postop cases
Very little agreement

<table>
<thead>
<tr>
<th></th>
<th>Case # 1</th>
<th>Case # 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min Volume (cc)</td>
<td>23.5</td>
<td>31.8</td>
</tr>
<tr>
<td>Max volume (cc)</td>
<td>282</td>
<td>435</td>
</tr>
<tr>
<td>Volume (Mean+/-SD) (cc)</td>
<td>88.5 ± 74.8</td>
<td>159.4 ± 116.6</td>
</tr>
<tr>
<td>Total agreement volume (cc)</td>
<td>6.8</td>
<td>13.4</td>
</tr>
<tr>
<td>Union Volume (largest volume assuming outermost contours) (cc)</td>
<td>323</td>
<td>548</td>
</tr>
</tbody>
</table>
The “experts” volumes
Michalski et al 2010
RTOG Consensus on Postop CTV

• Superiorly: caudal vas deferens remnant to 8-12mm below VUA

• Anterior: posterior edge of pubic bone or posterior 1-2cm of bladder wall (above pubic symphysis)

• Posterior: anterior rectal wall

• Lateral: levator ani, obturator internus

Michalski et al IJROBP 2010
RTOG Consensus

Michalski et al IJROBP 2010
RTOG Consensus
Purpose: reach interdisciplinary consensus for anatomic boundaries of CTV

- Urologists, rad onc, med onc, uroradiologists, uropathologists
Achieving consensus

3 urologists delineate regions at risk

Contours discussed at tumor board

CTV proposed by 2 rad onc + uroradiologist

Final PTV consensus approved by GU rad onc (n=10) + urologists (n=4) + uroradiologist (n=1)

Wiltshire KL et al IJROBP 2007
Consensus definition

Inferior boundary: 8 mm below VUA or top of PB

Wiltshire KL et al IJROBP 2007
Consensus definition

Ant: edge of symphysis pubis and posterior 1.5 cm of bladder wall
Lat: medial border of levator ani and obturator muscles
Post: anterior rectal wall/levator ani

Wiltshire KL et al IJROBP 2007
Consensus definition

Sup: surgical clips or 5 mm above inf vas deferens

Wiltshire KL et al IJROBP 2007
Consensus definition

Wiltshire KL et al IJROBP 2007
Can the “experts” agree on postop dose?

Yes!

All 11 “experts” gave a dose between 64 and 70Gy
9 of 11 said \textbf{64-65Gy}
<table>
<thead>
<tr>
<th>Institution</th>
<th>Postop Dose (Gy) for pT3aN0, PSA 0.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGH</td>
<td>64.8</td>
</tr>
<tr>
<td>UM</td>
<td>68.4</td>
</tr>
<tr>
<td>Beaumont</td>
<td>66.6</td>
</tr>
<tr>
<td>Wash U</td>
<td>64.8</td>
</tr>
<tr>
<td>Peter Mac</td>
<td>70</td>
</tr>
<tr>
<td>Duke</td>
<td>66</td>
</tr>
<tr>
<td>FCCC</td>
<td>68</td>
</tr>
<tr>
<td>ROC</td>
<td>68.4</td>
</tr>
<tr>
<td>MCW</td>
<td>63</td>
</tr>
<tr>
<td>Mayo</td>
<td>72-74 to VUJ, fossa 64.8</td>
</tr>
<tr>
<td>MSKCC</td>
<td>72</td>
</tr>
</tbody>
</table>
If a man is at risk for local failure his *curative* options are:

- Treat him with radiation early – adjuvant therapy
- Treat him with radiation later – salvage therapy
Timing of radiation after RRP

- Adjuvant RT
- Early salvage RT
- Later salvage RT
- Too late salvage RT
### Table 1. Characteristics and results of three randomized trials of postoperative radiotherapy

<table>
<thead>
<tr>
<th>Study</th>
<th>Inclusion criteria</th>
<th>Patients (n)</th>
<th>Median follow-up (y)</th>
<th>Biochemical progression-free survival (%)</th>
<th>Clinical progression-free survival (%)</th>
<th>Metastasis-free survival (%)</th>
<th>Overall survival (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EORTC 22911 (9)</td>
<td>pN0M0 tumors and ≥1 pathologic risk factors: capsular perforation, positive surgical margins, seminal vesicle invasion</td>
<td>1,005 (968 eligible)</td>
<td>5</td>
<td>74 vs. 52</td>
<td>85 vs. 75</td>
<td>94 vs. 94</td>
<td>92 vs. 93</td>
</tr>
<tr>
<td>SWOG 87-94 (10)</td>
<td>pT3N0M0 tumors and ≥1 pathologic risk factors: capsular perforation, positive surgical margins, seminal vesicle invasion</td>
<td>431 (425 eligible)</td>
<td>10.6</td>
<td>&lt;0.0001</td>
<td>0.004</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>65 vs. 36 (median, 10.3 vs. 3.1)</td>
<td>61 vs. 47</td>
<td>14.7 vs. 13.2</td>
<td>Median, 14.7 vs. 13.8</td>
</tr>
<tr>
<td>German trial (11)</td>
<td>pT3 R0 or R1 tumors with undetectable PSA</td>
<td>385 (307 with undetectable PSA)</td>
<td>4.5</td>
<td>72 vs. 54</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

*p* values for comparisons.
Postoperative radiotherapy after radical prostatectomy: a randomised controlled trial (EORTC trial 22911)

Michel Bolla, Hein van Poppel, Laurence Collette, Paul van Cangh, Kris Vekemans, Luigi Da Pozzo, Theo M de Reijke, Antony Verbaey, Jean-François Bosset, Roland van Velthoven, Jean-Marie Maréchal, Pierre Scalliet, Karin Haustermans, Marianne Piérart, for the European Organization for Research and Treatment of Cancer

Lancet 2005; 366: 572–78
Level I evidence
EORTC 22911

“Adverse” pathology
pT3, +sm, +sv

Adjuvant RT 60Gy Within 120 days
Watch and wait

Treat on relapse:
Salvage RT 60-70Gy or ADT

Bolla et al. Lancet 2005
Van der Kwast et al. JCO 2007
## Patients – preoperative characteristics

<table>
<thead>
<tr>
<th></th>
<th>RT</th>
<th>WW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>65 yrs</td>
<td>65 yrs</td>
</tr>
<tr>
<td>Median PSA</td>
<td>12ng/ml</td>
<td>12ng/ml</td>
</tr>
<tr>
<td>cT1</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>cT2</td>
<td>67%</td>
<td>63%</td>
</tr>
<tr>
<td>cT3</td>
<td>16%</td>
<td>19%</td>
</tr>
</tbody>
</table>
### Patients – post-operative characteristics

<table>
<thead>
<tr>
<th></th>
<th>RT</th>
<th>WW</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ SM</td>
<td>63%</td>
<td>62%</td>
</tr>
<tr>
<td>+ SVs</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td>+ SVs only</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>pT3a only</td>
<td>25%</td>
<td>27%</td>
</tr>
<tr>
<td>WHO grade 1</td>
<td>11%</td>
<td>14%</td>
</tr>
<tr>
<td>WHO grade 2</td>
<td>65%</td>
<td>60%</td>
</tr>
<tr>
<td>WHO grade 3</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>PSA &lt;0.2 after RRP</td>
<td>88%</td>
<td>90%</td>
</tr>
</tbody>
</table>
Freedom from PSA failure

Figure 2: Biochemical progression-free survival
## Treatment benefit and pathologic risk factors

<table>
<thead>
<tr>
<th></th>
<th>WW</th>
<th>RT</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>52%</td>
<td>74%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>+SM</td>
<td>48%</td>
<td>76%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>-SM</td>
<td>59%</td>
<td>70%</td>
<td>0.02</td>
</tr>
<tr>
<td>+SV</td>
<td>34%</td>
<td>61%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>-SV</td>
<td>59%</td>
<td>78%</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Freedom from clinical failure

No difference in overall survival – only 9% died

Bolla et al. Lancet 2005
Lack of QoL data

Cumulative incidence of late morbidity

Bolla et al. Lancet 2005
EORTC 22911 Update

Centralized pathology review (552 patients)

Van der Kwast et al. JCO 2007
EORTC 22911 Update

Centralized pathology review (552 patients)

Margin status strongest predictor of prolonged bDFS

• Immediate postop RT prevents 291 events/1000pts with +sm vs 88 events with –sm (HR 0.38 vs 0.88)

• No significant impact of +sm localization

Van der Kwast et al. JCO 2007
EORTC 22911 Update

Centralized pathology review

Van der Kwast et al. JCO 2007
EORTC 22911 Update

Centralised pathology review

Van der Kwast et al. JCO 2007
Management on relapse in watch and wait arm

No treatment 22%

Treatment 78%
  Salvage RT 60-70Gy 55%
  ADT 22%
  Other 1%

Reason
  PSA rise only 61%
  PSA rise + LF 32%
  LF no PSA rise 3%
  PSA at time of salvage ??

Median time after RRP 2.2 years
Limitations

Not a screen detected population

Pragmatic trial

No common management on use of RT on relapse in the WW arm

No common guidelines on the use of ADT on progression in both arms

Treatment not always required for relapse after RRP

Morbidity data but no quality of life data
Accrual: 1988-1997

431 men with pT3 cancer after RRP

Randomization:
- Adjuvant RT 60-64Gy (n=214) vs observation (n=211)

Primary end-point:
- Metastasis free survival

Follow-up:
- Median 12.7 years

*Thompson et al JAMA 2006, J Urol 2009*
## SWOG 8794

<table>
<thead>
<tr>
<th></th>
<th>5yr bDFS</th>
<th>10yr bDFS</th>
<th>10yr MFS</th>
<th>10yr OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT</td>
<td>61%</td>
<td>47%</td>
<td>83%</td>
<td>74%</td>
</tr>
<tr>
<td>Obs</td>
<td>38%</td>
<td>23%</td>
<td>61%</td>
<td>63%</td>
</tr>
</tbody>
</table>

- **significant**
- **non-significant**
SWOG 8794
2007 Update

Majority of patients in observation arm had PSA failure

Majority of clinical failures were local
Observation arm:
• 33% subsequent radiation
• Doubled use of hormonal therapy

Adjuvant arm:
• Rectal complications 3.3% vs 0%
• Urethral strictures 17.8% vs 9.5%
• Urinary incontinence 6.5% vs 2.8%
Companion QOL study

- Acute GI/GU side effects more common in adjuvant arm
- No difference in rate of ED
- Global QOL initially worse in adjuvant arm, similar by 2yrs, increasingly superior in the following 3yrs

Moinpour et al JCO 2008
Level I evidence
SWOG trial 8794

431 men pT3 cancer or + margins randomized to adj. RT or observation

Conclusions
• Metastasis free survival benefit
• Freedom from hormonal therapy benefit
• Survival benefit (median 2 year benefit, treat 9 pts to prevent 1 death)

Thompson et al J Urol 2009
Level I evidence
SWOG trial 8794

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Events/N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post-Prostatectomy PSA</strong>*</td>
<td></td>
</tr>
<tr>
<td>Undetectable</td>
<td>106/249</td>
</tr>
<tr>
<td>Detectable (&gt;0.2)</td>
<td>76/127</td>
</tr>
<tr>
<td><strong>Gleason Score</strong></td>
<td></td>
</tr>
<tr>
<td>Gleason 2-6</td>
<td>66/167</td>
</tr>
<tr>
<td>Gleason 7-10</td>
<td>73/158</td>
</tr>
<tr>
<td><strong>Extent of Disease</strong></td>
<td></td>
</tr>
<tr>
<td>Extracapsular or + Margins</td>
<td>133/286</td>
</tr>
<tr>
<td>Seminal Vesicle Involved</td>
<td>74/139</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>207/425</td>
</tr>
</tbody>
</table>

Hazard Ratio (Radiotherapy vs. Observation)
Level I evidence
SWOG trial 8794
What is the efficacy of salvage RT?

- 501 men treated with salvage radiation (median 64.8Gy) for detectable/rising PSA after RRP
- Pooled data from 5 academic centers
- Median FU 45 months

Selective but not effective
Local failure precedes a late wave of metastasis

Coen 2002

Years after RT

local control n=1271
local failure n=198

hazard rate of DM (%/yr)

0-3 3-6 6-9 9-12 12-15
Years after RT
Predictors of PSA progression after salvage RT

- Gleason 8-10 (HR 2.3 vs Gleason 4-6)
- PSA >2 before salvage XRT (HR 2.3 vs PSA≤1)
- Negative surgical margin (HR 1.9)
- PSA-DT ≤10 months (HR 1.7)
- SV invasion (HR 1.4)
What is the efficacy of salvage RT?

- Pre-RT PSA
  - ≤ 2.0
    - 4-year PFP (CI) 52% (49-56)
      - 980 patients
    - 4-year PFP (CI) 19% (15-24)
      - 346 patients
  - > 2.0
    - 4-year PFP (CI) 27% (19-35)
      - 151 patients

- Gleason score
  - 4-7
    - 4-year PFP (CI) 58% (54-62)
      - 689 patients
  - 8-10
    - 4-year PFP (CI) 33% (22-43)
      - 151 patients

- Surgical margins
  - Positive
    - 4-year PFP (CI) 61% (55-67)
      - 360 patients
    - PSADT
      - > 10
        - 4-year PFP (CI) 69% (59-79)
          - 110 patients
      - ≤ 10
        - 4-year PFP (CI) 57% (49-66)
          - 192 patients
  - Negative
    - 4-year PFP (CI) 55% (49-61)
      - 314 patients
    - PSADT
      - > 10
        - 4-year PFP (CI) 48% (40-56)
          - 175 patients
      - ≤ 10
        - 4-year PFP (CI) 61% (50-72)
          - 96 patients

What is the efficacy of salvage RT?

![Graph showing survival probability over time with different salvage treatment options. The graph includes survival data for three groups: salvage radiotherapy only, salvage radiotherapy plus hormonal, and no salvage radiotherapy. The log-rank test statistic is $\chi^2 = 22.8, P < .001$. The table below shows the number of patients at risk at different time points.](image)

Trock et al JAMA 2008
**RTOG 96-01**

**A PHASE III TRIAL OF RADIATION THERAPY WITH OR WITHOUT CASODEX IN PATIENTS WITH PSA ELEVATION FOLLOWING RADICAL PROSTATECTOMY FOR pT3N0 CARCINOMA OF THE PROSTATE**

**SCHEMA**

<table>
<thead>
<tr>
<th>S</th>
<th>Neoadjuvant Hormone Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>1. No</td>
</tr>
<tr>
<td></td>
<td>2. Yes</td>
</tr>
<tr>
<td>R</td>
<td>Positive Surgical (inked) Margins</td>
</tr>
<tr>
<td></td>
<td>1. No</td>
</tr>
<tr>
<td></td>
<td>2. Yes</td>
</tr>
<tr>
<td>T</td>
<td>PSA Nadir after Surgery &lt;0.5 ng/ml</td>
</tr>
<tr>
<td></td>
<td>1. No</td>
</tr>
<tr>
<td></td>
<td>2. Yes</td>
</tr>
<tr>
<td>F</td>
<td>Entry PSA level</td>
</tr>
<tr>
<td></td>
<td>1. 0.2 to 1.5 ng/ml</td>
</tr>
<tr>
<td></td>
<td>2. 1.6 to 4.0 ng/ml</td>
</tr>
<tr>
<td>A</td>
<td>Radiation Therapy&lt;sup&gt;a&lt;/sup&gt; plus</td>
</tr>
<tr>
<td>N</td>
<td>Casodex 150 mg&lt;sup&gt;b&lt;/sup&gt; vs.</td>
</tr>
<tr>
<td>D</td>
<td>Radiation Therapy&lt;sup&gt;a&lt;/sup&gt; plus</td>
</tr>
<tr>
<td>O</td>
<td>placebo&lt;sup&gt;b&lt;/sup&gt; daily</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td></td>
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<tr>
<td>E</td>
<td></td>
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</tbody>
</table>

<sup>a</sup> **Radiation Therapy**: 64.8 Gy in 36 fx (1.8 Gy in 5 daily sessions per week) to the original prostate volume, the tumor resection bed and the proximal membranous urethra.

<sup>b</sup> **Casodex or Placebo**: Patients will receive either one (150 mg) tablet of Casodex or placebo in a double-blinded fashion p.o. daily for two years beginning immediately upon, or just prior to, the initiation of irradiation.
Eligibility: (See Section 3.0 for details)
- Pathologic stage T3 N0 with radical prostatectomy, or pT2 pN0 with a positive inked resection margin or positive prostate fossa/anastomosis biopsy.
- Entry PSA ≥ 0.2 ng/ml to ≤ 4.0 ng/ml.
- No distant metastases.
- Karnofsky performance status ≥ 80.
- No prior chemotherapy, prior hormones, (except for neoadjuvant hormone therapy) or radiation for prostate cancer.
- Treatment on both arms must begin within 4 weeks after randomization.
- Hgb ≥ 10, WBC ≥ 4,000, platelets, ≥100,000, SGOT (or SGPT) ≤ 2.5 x institutional upper normal limit, serum creatinine ≤ 2 x institutional upper normal limit.
- PSA levels prior to surgery until study entry must be available.
- Life expectancy > 10 years
RTOG 9601

Freedom From Progression: Treatment Effect

Freedom from Progression (%)

Years after Randomization

Patients at Risk

RT+ATT

RT Alone

Failed

Total

RT+ATT

RT Alone

Greenwood's p value <0.0001

Failed

Total

57%

40%

Patients at Risk

RT+ATT

RT Alone

0

1

2

3

4

5

6

7

8

0

25

50

75

100

RT+ATT

RT Alone

Patients at Risk

RT+ATT

RT Alone
New trials

UK-NCIC RADICALS Trial

RRP

Low risk

Int risk

Observation

Early salvage RT

Adjuvant RT

No ADT

Short ADT

Long ADT

High risk

Adjuvant RT

Opened: Jan 2007    Target: 4000 patients
New trials

EORTC 22043

High-risk after RRP

adjuvant RT

6 mo ADT + adjuvant RT

Opens: 2009  Target: 600 patients
Lymphotropic Nanoparticle LN Mapping

26 postoperative PSA failures referred for salvage RT

Node Negative PSA <4.0 ng/ml

6 of 26 (23%) with incidental LN+ by LNMRI

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of positive LN</th>
<th>LN Location</th>
<th>LN Diameter (mm)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>Obturato(^a)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presacral</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>External iliac</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Peri-rectal</td>
<td>3</td>
</tr>
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<td>2</td>
<td>1</td>
<td>PARA-aortic</td>
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<tr>
<td>3</td>
<td>1</td>
<td>Obturato(^a)</td>
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</tr>
<tr>
<td>4</td>
<td>1</td>
<td>Presacral</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>External iliac(^a)</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Peri-rectal(^b)</td>
<td>12</td>
</tr>
</tbody>
</table>

LN=lymph node.

\(^a\) CT-guided biopsy performed but nondiagnostic.
\(^b\) CT-guided biopsy positive for metastatic prostate cancer.

Ross RW et al Clin Imaging 2009
Improved Relapse Free Survival

log rank p value = 0.00044

Moghanaki D et al ASTRO 2010
RTOG 0534

Rising PSA after RRP

- Salvage RT
- 4-6 mo ADT + Salvage RT
- 4-6 mo ADT + Salvage RT with Nodal radiation

Opened: Jan 2008  Target: 1764 patients
Conclusions

- Rising PSA is common for pT3 tumors and +margins
- Adjuvant RT reduces risk of PSA recurrence, clinical failure and metastasis
- Adjuvant RT improves survival and reduces need for subsequent ADT
- Benefit is perhaps concentrated among those with +sms
- Benefit may be seen when SVs are involved
- Morbidity appears low and is certainly lower than the current systemic alternatives
Conclusions

- When surgery has probably failed to cure the patient, the best prospective data supports the use of adjuvant radiation.

- The onus is on the uro-oncologist to discuss adjuvant RT with the patient and justify not using it.

- Salvage RT cannot be more effective than adjuvant and may be less.
Parting message

If we had a drug

- Cost thousands of dollars per patient
- Extended life by 2 months but cured no-one
- Significant toxicity
- Marketed aggressively
- Call it X

We would declare it a “major breakthrough”
Parting message

So why is it that when we have a therapy

• Saves lives
• Saves men from castration
• Relatively little toxicity
• Call it radiation

We are hesitant to use it?
Parting message

In the hunt for a useful systemic therapy don’t lose sight of the one therapy proven to reduce recurrence and the need for subsequent castration

THINK LOCAL !