What is new in the Brachy World?
ABG 2018 Sydney

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Clinical Professor Radiation Oncology
Department of Surgery UBC
Head, BCCA prostate Brachytherapy Program
Vancouver Cancer Centre, BC Cancer Agency
Canada
Prostate Brachytherapy - conclusions

Brachytherapy is the most effective radiation treatment for localized PC

PSA outcomes are durable and many patients may be cured

Addition of PB may increase OS in HR PCa - in young and healthy men may increase OS
Cervical Brachytherapy is Essential

Brachytherapy is associated with better survival in patients with locally-advanced cervical cancer.


Kathy Han, 2013
3. Changing patterns of practice in PCa

Significant increase in prostatectomy and decrease in radiation for T3 PCa 1998 - 2012.
Declining utilization of prostate brachytherapy - Why?

PSA screening changes - less incidence cases
AS - Change in Low Risk Treatment recommendation

New Technologies - Laparoscopic and Robotic Surgery
IMRT, SBRT, Protons
Higher reimbursement for IMRT and Robotic Surgery

Why increase utilization?

Brachytherapy is a
Most effective treatment for localized Pca
Most cost effective treatment for clinically localized Pca
How to increase utilization?
What has worked in Canada

Education of ROs, Urologist, and GPs
Education of public
Education in Brachytherapy
   Resident and fellowship programs
Rethink the reimbursement

When in doubt, follow the money trail…
Changes in risk stratification
Changes in Risk stratification

OLD - NCCN

- **LR**: T1–T2a, PSA <10 ng/mL and GS ≤6.
- **IR**: T1–T2, PSA <20 ng/mL or GS 7
- **HR**: T3a or PSA >20 ng/mL or GS 8–10.
- **Very HR**: T3b, or Gleason 5, >4 cores and GS 8–10

NEW - GURO Canada ProCaRS

- **LR**: low / extremely low
- **IR**: favourable / unfavourable
- **HR**: favourable / extreme
IR and HR pCa is a heterogeneous disease.

uIR and fHR have the same outcome!

**Low risk** 2 groups: PSA $\leq 6$

**IR** low-IR and high-IR:
- **High-IR**: PSA $>10$, and T2b/c or GS7

**HR** split into HR and Extreme Risk
- **HR**: PSA 20-30 or GS $\geq 8$ or $\geq$ T3
- **ER**: GS $\geq 8$ or $\geq$ T3 & PSA $>30$ or %PC $>87%$

Canadian National outcomes $>8000$ pts with 12y FU
Unfavorable Risk factors:
PSA >10,
GS > 7
CS > T2b
iPSA velocity > 2.0

1,063 men - med FU 5.6y
RP 559
EBRT 288
EBRT+ADT 116

PCa Deaths as a proportion of all deaths

PCa is the leading cause of death in men with >= 3 risk factors
WHY BRACHYTHERAPY?
Radiation Oncology 101

There is no radio-resistant tumors

Failure to cure localized cancer is due to:
- Inadequate dose
- Geographic miss

**Surgery:**
- Eliminate *bulk* – most common cause of RT failure

**Radiation:**
- Eliminate *microscopic* disease – most common cause of surgical failure

**BRACHYTHERAPY**
Eliminate tumor *bulk*

**EBRT + PB boost**
Eliminate *microscopic* disease and tumour *bulk*
BC CA Prostate Brachytherapy Program
First Implant - July 20, 1998
‘Likely cure’ for prostate cancer

Program benefits early-diagnosed patients

BY GERRY BELLETT
VANCOUVER SUN

A study of early-diagnosed prostate cancer patients shows that 95 per cent of those treated using brachytherapy — the planting of a radioactive particle in the prostate — have had their cancer cured.

The results of the study of 1,006 patients treated through the

2009
5y outcomes published

Prostate cancer ‘cure’ disputed

Program benefits early-diagnosed patients

BY GERRY BELLETT
VANCOUVER SUN

A study of early-diagnosed prostate cancer patients shows that 95 per cent of those treated using brachytherapy — the planting of a radioactive particle in the prostate — have had their cancer cured.

The results of the study of 1,006 patients treated through the
Population-Based 10-Year Oncologic Outcomes After Low-Dose-Rate Brachytherapy for Low-Risk and Intermediate-Risk Prostate Cancer

W. James Morris, MD, FRCPC1,2; Mira Keyes, MD, FRCPC1,2; Ingrid Spadinger, PhD1,2; Winkle Kwan, MD, FRCPC2,4; Mitchell Liu, MD, FRCPC1,2; Michael McKenzie, MD, FRCPC1,2; Howard Pai, MD, FRCPC1,2; Tom Pickles, MD, FRCPC1,2; and Scott Tyldesley, MD, FRCPC1,2

10 y outcomes in 1006 pts - Low and IR risk

Competing Risk Cumulative Incidence Functions for DFS

Figure 2. This is a Fine and Gray competing risks estimate of disease-free survival (DFS) for the androgen-deprivation therapy (ADT) subgroup (N = 658) and the non-ADT subgroup (N = 348).

10y PSA RFS 94%
Phoenix PSA relapse free definition “nadir +2”

Morris at al Cancer 2013
Evidence for Brachytherapy?

Retrospective studies
- Single institutional reports
- Multiinstitutional reports

Systemic overviews of the published results

Large US databases queries

RTC
- RTC surgery vs. Brachy (n=1)
- RTC EBRT vs. Brachy (n=5 +1)

Institutional Guidelines

Experts opinions
Canadian National Prospective multi institutional LDR outcomes >4800pts

Rodrigues et al. Radioth. Oncology, 2013

LDR

LR and Low IR 85-90%

uIR and HR 60-70%
EBRT outcomes >8000 pts
Canadian multicenter outcomes

Rodrigues at al. Radioth. Oncology, 2013
Systemic overviews of the published results

Comprehensive review of the literature

Risk stratified patients

All available treatments

Minimum 5y fu.

Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. Results from the Prostate Cancer Results Study Group

Peter Grimm¹, Ignace Billiet², David Bostwick³, Adam P. Dicker⁴, Steven Frank⁵, Jos Immerzeel⁶, Mira Keyes⁷, Patrick Kupelian⁸, W. Robert Lee⁹, Stefan Machtens¹⁰, Jyoti Mayadev¹¹, Brian J. Moran¹², Gregory Merrick¹³, Jeremy Millar¹⁴, Mack Roach¹⁵, Richard Stock¹⁶, Katsuto Shinhara¹⁷, Mark Scholz¹⁷, Ed Weber¹⁸, Anthony Zietman¹⁹, Michael Zelefsky²⁰, Jason Wong²¹, Barry Wentworth²², Robyn Vera²³ and Stephen Langley²⁴

21,600 Low risk

>14,000 Intermediate Risk

15,000 High Risk

>50,000 pts

Grimm at al BJU 2012
Low Risk

10y PSA RFS

PB 85-95%
EBRT 50-60%
Surgery 85%

http://www.pctrf.org/low-risk-results/
Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. Results from the Prostate Cancer Results Study Group

Intermediate Risk

10y PSA RFS

- LDR - 70-95%
- LDR+ EBRT ~ 85-90%
- EBRT <40-60%
- Surgery ~70%

http://www.pctrf.org/low-risk-results/
Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. Results from the Prostate Cancer Results Study Group

Peter Grimm¹, Ignace Billict², David Bostwick³, Adam P. Dicker⁴, Steven Frank⁵, Jos Immerzeel⁶, Mira Keyes⁷, Patrick Kupelian⁸, W. Robert Lee⁹, Stefan Machtens¹⁰, Jyoti Mayadev¹¹, Brian J. Moran¹², Gregory Merrick¹³, Jeremy Millar¹⁴, Mack Roach¹⁵, Richard Stock¹⁶, Katsuto Shinohara¹⁷, Mark Scholz¹⁸, Ed Weber¹⁹, Anthony Zietman¹⁰, Michael Zelefsky²⁰, Jason Wong²¹, Stacy Wentworth²², Robyn Vera²³ and Stephen Langley²⁴

High Risk PSA RFES @ 10y

http://www.pctrf.org/low-risk-results/

Non randomized data
PSA definition

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Survival Rate</th>
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<tbody>
<tr>
<td>LDR</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>LDR + EBRT</td>
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High Risk
Evidence for Brachytherapy?

- Retrospective studies
  - Single institutional reports
  - Multiinstitutional reports
- Systemic overviews of the published results
- Large US databases queries
- RTC
  - RTC surgery vs. Brachy (n=1)
  - RTC EBRT vs. Brachy (n=5 +1)
- Institutional Guidelines
- Experts opinions
RTC: Brachytherapy vs. Surgery n=1

200 LR pts
PB - no dosimetry data vs.
RP - one surgeon did all cases

5y PAS RFS 91% both arms

PSA EFS - same

RP: gr 3 >20%?
- 18% incontinence
- 6.5% Stricture

PB: late gr 3 <5%
- 20% irritative symptoms
- Stricture 2%

ED 35% - same
QIL same

Fig. 1 Biochemical disease-free survival rate in group 1 and 2 during the 5 years follow-up
5 RTC - EBRT +PB boost

- ASC ENDE RT - **LDR**
- RTOG 0232 - **LDR**
- UK Trial - **HDR**
- Canadian Trial - **Iridium HDR**
- Canadian Trial **HDR**
  - (phase II) 1vs. 2 HDR fractions
- Australian trial **TROG RADAR trial**
Clinical Investigation
Androgen Suppression Combined with Elective Targeted pelvic Irradiation: A Prospective Randomized Trial Comparing
ASCENDE-RT: An Analysis of Treatment-Related Morbidity for a Randomized Trial Comparing

Phoenix bNED

Low
Low-tier IR

High
High-tier IR

Very high
ASC ENDE RT
PSA PFS (Phoenix) at 5y – primary outcome

- 5 years follow up is inadequate to assess effectiveness of prostate cancer treatment
- Brachytherapy - stable long term outcomes
- 10 y EBRT outcomes are poor

<table>
<thead>
<tr>
<th>PFS</th>
<th>7 yr</th>
<th>9 yr</th>
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<tr>
<td></td>
<td>75.0 (±7.2)</td>
<td>62.4 (±9.8)</td>
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<tr>
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<td>86.2 (±5.4)</td>
<td>83.3 (±6.6)</td>
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</table>

LDR + EBRT + ADT bNED 83% @9y

Absolute difference
5y - 4.9%
7y - 11.2%
9y - 20.95%
**ASC ENDE RT**

**PSA PFS >0.2 PSA threshold**

**surgical definition**

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**Absolute difference**

- 5y – 38.9%
- 7y – 42.9%
- 9y – 47.8%

**Log rank P < 0.0001**

**EBRT 78Gy + ADT bNED 20% @ 9y**

**LDR+EBRT + ADT – bNED 80%@9y**
Nadir+2 vs. PSA>0.2 failure definition for PB vs. EBRT boost arms

**PB BOOST**

- LDR-PB arm
- nadir+2ng/m
- PSA >0.2

**EBRT BOOST**

- DE-EBRT arm
- nadir+2ng/m
- PSA >0.2

**Numbers at risk:**

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<thead>
<tr>
<th>Time (yrs)</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
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<tbody>
<tr>
<td>Nadir+2mg/ml</td>
<td>188</td>
<td>177</td>
<td>137</td>
<td>98</td>
<td>55</td>
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<td>&gt;0.2 ng/mL</td>
<td>188</td>
<td>170</td>
<td>130</td>
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<td>Nadir+2mg/ml</td>
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Submitted to IJ ROBP Jan 2018. Morris, Kkeyes Pickles
PSA >0.2 failure definition for IR and HR

Intermediate risk R

High Risk

Numbers at risk:

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<td>LDR-PB</td>
<td>54</td>
<td>50</td>
<td>41</td>
<td>37</td>
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<td>4</td>
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<tr>
<td>DE-EBRT</td>
<td>64</td>
<td>50</td>
<td>28</td>
<td>20</td>
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<td>120</td>
<td>87</td>
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<td>31</td>
<td>6</td>
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<tr>
<td>DE-EBRT</td>
<td>134</td>
<td>101</td>
<td>48</td>
<td>26</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

Submitted to JROBP Jan 2018. Morris, Keyes Pickles
A trial comparing the treatment with dose-escalated external beam radiotherapy found that it was much more successful at banishing cancer. Men who underwent LDR-PB were twice as likely to be cancer-free five years later. Scientists studied 398 men with cancer that had not spread outside the prostate gland who were judged to be at high risk of treatment failure based on standard test results.

Lead researcher Professor James Morris, from Vancouver Cancer Centre in Canada, said: “At five years follow-up, we saw a large advantage in progression-free survival in the LDR-PB group. “Although, to date, overall survival and prostate cancer-specific survival do not appear to differ between the two groups, existing trends favour LDR-PB and an overall survival advantage is likely to emerge with longer follow-up.”

The findings were presented at the third European Society for Radiotherapy and Oncology forum in Barcelona, Spain.
ASCENDE RT - toxicity

Toxicity - GU
- 5y cumulative incidence GU 18% vs. 5%
- 5y prevalence 8 vs. 2%

Toxicity - GI
- 6y cumulative incidence 8 vs. 3%
- 5y prevalence 1 vs. 2%

EF
- 45% for PB and 37% for EBRT

QOL
- Decline in mean scores both arms for physical and sexual function scales, worse with LDR arm
ASCENDE RT conclusions:

- **OS same**
  - 6% absolute difference, p = ns

- **Mets Free survival - same**
  - 89 and 85%, p = ns
  - PB pts failed early on, mets early on (2 y after PSA failure) - failing from occult metastatic disease

- **PSA failure - 2x higher with EBRT**
  - 20% absolute difference
  - 1% per year for PB arm
  - 5% per year for EBRT arm

- **Toxicity higher in PB arm**
RTC with HDR

N=220 pts  IR and HR

EBRT 55Gy/20#  vs.  HDR 17Gy/2 + EBRT 35.7Gy/13#

Absolute difference 18%

7y bNED 66%
7y bNED 48%
104 pts T2, T3, LN- no ADT  
Med Fu 8.2y  
40 Gy/20# + 35 Gy/48h Ir  
vs.  
EBRT 66 Gy/33#

Absolute difference 40%
Long-Term Results of a Randomized Trial Comparing Iridium Implant Plus External Beam Radiation Therapy With External Beam Radiation Therapy Alone in Node-Negative Locally Advanced Cancer of the Prostate

Ian S. Dayes, MD, * Sameer Parpia, PhD, † Jaclyn Gilbert, MD, ‡
Jim A. Julian, MMath, † Ian R. Davis, MD, † Mark N. Levine, MD, *, †
and Jinka Sathyia, MD †

Fig. 1. Prostate cancer—specific survival by treatment group. Abbreviation: Rad = radiation.

Fig. 2. Probability of metastases by treatment group. Abbreviation: Rad = radiation.

**2017 update on MFS and OS 100 pts!**
**UK HDR Trial**

bPFS Absolute bPFS difference 18%

**ASCENDE RT**

bPFS Absolute bPFS difference 20%

**Canadian HDR trial**

bPFS Absolute bPFS difference 40%

---

1. Morris at al IJROBP TBA
3. Sathya at al JCO 2005

**RTC:**
With PB, absolute difference in PSA RFS is 20-40%

---

**UK HDR Trial**

bPFS Absolute bPFS difference 18%

---

**Canadian HDR trial**

bPFS Absolute bPFS difference 40%
Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. Results from the Prostate Cancer Results Study Group

High Risk PSA RFES @ 10y

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Non randomized data
30-35% difference between EBRT and EBRT + PB boost

Randomized data
20-40% PSA difference
RTOG 2032
LDR+ EBRT for Low-tier IR pCa

588 pts low IR
EBRT 45Gy/25# + LDR boost
VS.
LDR monotherapy

PSA RFS -
Med fu 6.7y - 85 vs 86%

Toxicity - higher in PB arm
Overall gr 3: 12% vs 7%
GU: 7% vs 3%

No benefit to EBRT in low IR pts
ADT and Brachytherapy
American Brachytherapy Society Task Group Report: Use of androgen deprivation therapy with prostate brachytherapy—A systematic literature review

M. Keyes¹,*, G. Merrick², S.J. Frank³, P. Grimm⁴, M.J. Zelefsky⁵

¹Department of Radiation Oncology, British Columbia Cancer Agency, University of British Columbia, Vancouver, BC, Canada
²Department of Radiation Oncology, Schiffrer Cancer Center, Wheeling Jesuit University, Wheeling, WV
³Department of Radiation Oncology, University of Texas MD Anderson Cancer Center, Houston, TX
⁴Prostate Cancer Center of Seattle, Seattle, WA
⁵Department of Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York, NY

1. Systemic literature review of the published literature
2. Impact of ADT on PSA PFS, CSS and OS
3. Review of RTC
Why even ask this question?
ADT improves OS with EBRT 10%

QOL
ED
hot flashes
fatigue
Anemia
Loss of muscle mass.
Cognitive dysfunction and
Depression
Psychiatric illness (1/3)
osteoporosis
fractures

Metabolic syndrome
Central and peripheral obesity
Increase in cholesterol
Increase in triglycerides
HDL decreased
Elevated blood pressure
Elevated fasting glucose
Elevated fasting insulin
Decrease insulin sensitivity
Increase diabetes by 44%
Increase cardiovascular events
Sudden cardiac death
Decrease OS?
52 studies > 43,000 patients 45 LDR and 7 HDR

- **71% of the studies, reported no benefit to ADT**
  - LR, Low IR and HDR
- **28% showed benefit to ADT (15% improvement)**
  - Suboptimal dosimetry
  - High-tier IR
  - HR

- **4 studies showed CSS benefit with multimodality treatment**
- No OS benefit with ADT
- **4 studies showed OS detriment with ADT and brachytherapy**
Ongoing RTC’s to assess role of ADT with PB

<table>
<thead>
<tr>
<th>LDR vs HDR - monotherapy 2 trials</th>
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<tr>
<td>• Kelowna and Quebec</td>
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<tr>
<th>RTOG 0815</th>
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<td>• EBRT 79Gy or PB boost + 0 vs 6 mo ADT</td>
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<td>• EBRT 79Gy or PB boost + 3 vs 36 mo ADT</td>
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<th>SHIP 0804</th>
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<tr>
<td>• PB 0 vs. 3 mo ADT</td>
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<tr>
<th>SHIP 36B</th>
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<tr>
<td>• EBRT +PB + 6 mo ADT and 0 vs. 24 mo ADT</td>
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High-intermediate prostate cancer treated with low-dose-rate brachytherapy with or without androgen deprivation therapy

Tom Pickles, W. James Morris, Mira Keyes

Radiation Program, BC Cancer Agency, and Department of Radiotherapy and Developmental Radiotherapeutics, University of British Columbia, Vancouver, Canada

Conclusion

6 m ADT for H-IR PCa does not significantly improve 5 PSA control.

Med FU 5 y, N=260 no ADT 53% and ADT 47%
bNED 8y 82% vs. 79% (Phoenix) and 79 vs. 61% (<0.2 definition)
Brachytherapy for Intermediate-Risk Prostate Cancer, Androgen Deprivation, and the Risk of Death

Tom Pickles,*† Scott Tyldesley,*† Jeremy Hamm,§ Sean A. Virani, W. James Morris,*† and Mira Keyes *†

*Radiation Program, BC Cancer Agency; †Department of Radiotherapy and Developmental Radiotherapeutics, and ‡Division of Cardiology, University of British Columbia; §Cancer Surveillance and Outcomes, BC Cancer Agency; and ‡University of BC, Vancouver, British Columbia, Canada

Received Jul 18, 2017, and in revised form Aug 21, 2017. Accepted for publication Aug 24, 2017.

N=3155 with med FU 7.9y
Low risk=1142   IR =2013
ADT - 47%
IR: older, more cardiac comorbidities
10y bNED better with ADT
86% vs 89% at 10y (P=.006).

10y OS worse with ADT
83% vs 86%  (p=.0274)
LR pts same OS
IR pts worse OS
Brachytherapy and OS
Brachytherapy increase PSA RFS
NO RTC evidence that PB increase in OS

Is PSA relevant endpoint for PCa?

PSA failure has significant negative effect on
1. QOL
2. Medical system
   1. Multiple follow up visits ???$
   2. Imaging (PET PSMA) - 3,000$
   3. Multiple life long treatments LHRH - 1,500$
   4. Enzalutamide Abiroterone 50,000$
   5. CHEMO 10,000$
   6. SBRT 10,000$
   7. Ra 223 6,000$
DESPITE IMPROVED PSA CONTROL OS THE SAME WHY?

1. PCa has a long natural history
2. New treatments for metastatic disease increase OS
3. Competing risk of dying – effect of comorbidities
Biochemical Control With Radiotherapy Improves Overall Survival in Intermediate and High-Risk Prostate Cancer Patients Who Have an Estimated 10-Year Overall Survival of >90%


Effect of Comorbidities?

1,060 EBRT pts, healthy man >90% chance of 10y survival
OS compared in patients with PSA failure or PSA control

healthy and young man
With PSA control - 20% in OS
62 to 86% (p=0.002) (HR)
75 to 95% (p=0.33) (IR)

Herbert at al IROBP 83;2012
206 men treated on RCT (EBRT vs EBRT+6 mo ADT) - med follow-up 16.6 y
76% died, 19% died from PCa.

**Aim:** determine whether PSA failure is associated with the risk of All Cause Mortality stratified by **comorbidity score**.

PSA failure increased ACM risk in healthy men HR 1.59 P = 0.04
No difference in men with moderate or severe comorbidity.
20,279 Pts cN0M0 pCa from the National Cancer Database treated 2004 to 2006

- EBRT alone (71% pts) (75-81 Gy)
- EBRT + Brachy (29% pts)
- 12,617 IR, 7,662 HR
- Median follow-up was 82 months

MVA

- EBRT + Brachy - improved OS (HR 0.75, p < 0.001)
- Both IR and HR (HR 0.73 and 0.76, < 0.001)

Brachy Boost Increase OS?
Let's move away from PSA as an endpoint

Clinical Outcomes for Patients with Gleason Score 9–10 Prostate Adenocarcinoma Treated With Radiotherapy or Radical Prostatectomy: A Multi-institutional Comparative Analysis


487 pts HR pts with GS 9–10 Pca
Med fu 4.6y
ADT 24mo

- EBRT (230)
- EBRT+ PB (87)
- RP 170

KM, MVA Cox regression
5-y and 10-y

- DMFS
- CSS
- OS
CSS

Overall Survival

RT and RP provide equivalent CSS and OS
EBRT+ PB + ADT  improved systemic control

• Optimal upfront treatment for patients with GS 9–10 CaP.
BCCA treatment policy

Low Risk and Low-IR
- Brachytherapy

High-IR
- EBRT + PB boost (ADT optional)

High Risk (PSA <40)
- EBRT + PB boost + ADT
- Duration 0-12 mo

1. Good urinary function
2. Minimal comorbidities
Conclusions

• Brachytherapy is the most effective radiation treatment for localized PCa

• 10y PSA outcomes are durable and many patients may be cured

• Addition of Brachytherapy substantially decrease (or eliminate?) the need to ADT
Conclusions

- Addition of Brachytherapy may increase OS in HR PCa - in young and healthy men

- Almost any dose intensification in oncology has come with a price of higher toxicity

- EBRT+ PB boost is only appropriate for younger patents with good urinary function and good life expectancy
For patients with high-risk prostate cancer receiving EBRT and ADT, PB boost (LDR/HDR) should be offered to eligible pts.

**New standard of care:**
All eligible patients with PCa should be offered Prostate Brachytherapy
RESIDENT SCHOLARSHIP PROGRAM

Highlights from the 2017 HDR LDR Prostate Workshop

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Leading North American experts in prostate brachytherapy gathered in Chicago in early December to host the annual HDR Prostate Brachytherapy Workshop. In attendance were thirty pairs of practicing radiation oncologists and physicists who were chosen through a rigorous selection process and were awarded $2000 scholarships to cover the costs of participation.

ABS has a long-standing tradition of supporting education in brachytherapy through hands-on learning to ensure that the practice of brachytherapy continues to flourish in the United States. Since 2006, ABS, with partial sponsorship from Elekta, was able to support 20 scholarships a year for both physicists and physicians to travel to designated sites of brachytherapy excellence for an entire week. In 2017, ABS changed their scholarship format to a centralized two-day workshop, where a combination of didactic lectures, hands-on planning sessions, and hands-on simulations allow practicing physicians and physicists of various expertise levels to both solidify their knowledge and advance their technique. Participants have a chance to plan several cases in various software formats for both HDR and LDR. During the two-day workshop, they spend 5 hours at 8 different hands-on stations where experts share their knowledge on how to do everything from LDR to HDR, using pre-planning or real-time planning, with US-based or CT-based or MRI-based planning, with loose or stranded seeds, etc. Alongside the instructors, industry sponsors are present to answer questions and to network.

I commend ABS leadership for organizing an event that promotes education, technical finesse and networking. It's difficult to imagine a more intimate and dynamic setting for learning or refining brachytherapy technique. Going from one hands-on workshop to the next, I heard world experts in prostate brachytherapy say that they were surprised to have learned something new in this type of relaxed interactive atmosphere that promotes dialogue and free exchange of ideas.

I am happy to say that I left the workshop, ready to implement changes that will undoubtedly result in higher quality implants for my patients.
APPLICATION FOR ACCREDITATION OF AN AREA OF FOCUSED COMPETENCE PROGRAM IN BRACHYTHERAPY

This questionnaire is to provide the Royal College with a complete description of the AFC program. The completed questionnaire must be signed by the AFC director and submitted to the decanal unit within the faculty of medicine responsible for oversight of AFC programs.

Thank you!