Management of Localized Prostate Cancer

8th ESO, ESMO & Arab and Southern European Countries Masterclass in Clinical Oncology
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Amman, Jordan
Outline

• Incidence
• Facts
• Treatment of Localized Pca
  # Active Surveillance
  # Hypofractionation & SBRT
• Conclusion
Prostate
Source: Globocan 2018
Global Cancer Incidence 4th

Number of new cases in 2018, both sexes, all ages

- Lung: 2,093,876 (11.6%)
- Breast: 2,088,849 (11.6%)
- Colorectum: 1,849,518 (10.2%)
- Prostate: 1,276,106 (7.1%)
- Stomach: 1,033,701 (5.7%)
- Other cancers: 7,753,946 (42.9%)
- Cervix uteri: 569,847 (3.2%)
- Oesophagus: 572,034 (3.2%)
- Liver: 841,080 (4.7%)

Total: 18,078,957 cases
Global Cancer Mortality 8th

Number of deaths in 2018, both sexes, all ages

- Lung: 1,761,007 (18.4%)
- Colorectum: 880,792 (9.2%)
- Stomach: 782,685 (8.2%)
- Liver: 781,631 (8.2%)
- Breast: 626,679 (6.6%)
- Oesophagus: 508,585 (5.3%)
- Pancreas: 432,242 (4.5%)
- Prostate: 358,989 (3.8%)
- Other cancers: 3,422,417 (35.8%)

Total: 9,555,027 deaths
Global Pca Incidence
Rank of Prostate cancer in course participant’s countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Prostate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>4</td>
</tr>
<tr>
<td>Cyprus</td>
<td>1</td>
</tr>
<tr>
<td>Egypt</td>
<td>5</td>
</tr>
<tr>
<td>Iraq</td>
<td>3</td>
</tr>
<tr>
<td>Lebanon</td>
<td>1</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>3</td>
</tr>
<tr>
<td>Turkey</td>
<td>2</td>
</tr>
<tr>
<td>Tunisia</td>
<td>4</td>
</tr>
<tr>
<td>Algeria</td>
<td>3</td>
</tr>
<tr>
<td>France</td>
<td>1</td>
</tr>
<tr>
<td>Morocco</td>
<td>2</td>
</tr>
</tbody>
</table>
Prostate ca Treatment Outcome
Median Age at Diagnosis and Death – US Data

13 year age gap
Screening & Increase awareness
Clinical development of novel therapeutics for castration-resistant prostate cancer
NCCN Guidelines Version 4.2019
Prostate Cancer
NCCN Evidence Blocks™

SYSTEMIC THERAPY FOR M1 CRPC: ADENOCARCINOMA WITHOUT VISCERAL METASTASES

FIRST-LINE TREATMENT

- Docetaxel\(^{\text{IV}}\) (category 1)
- Radium-223\(^{\text{aa}}\) for symptomatic bone metastases (category 1)
- Pembrolizumab for MSI-H or dMMR\(^{\text{yy}}\) (category 2B)
- If not previously received:
  - Abiraterone\(^{\text{u}}\) with prednisone
  - Enzalutamide\(^{\text{u}}\)
  - Sipuleucel-T\(^{\text{ww}}\)

SECOND-LINE TREATMENT

- Prior therapy
  - Abiraterone/ enzalutamide
  - Clinical trial

- Prior therapy
  - Docetaxel

SUBSEQUENT TREATMENT

At progression\(^{\text{ddd,eee}}\):
- If not previously received:
  - Abiraterone\(^{\text{u}}\) with prednisone (category 1)
  - Enzalutamide\(^{\text{u}}\) (category 1)
  - Cabazitaxel\(^{\text{yy}}\) (category 1)
  - Radium-223\(^{\text{aa}}\) for symptomatic bone metastases (category 1)
  - Abiraterone\(^{\text{u}}\) with methylprednisolone
  - Mitoxantrone with prednisone\(^{\text{v,ggg}}\)
  - Pembrolizumab for MSI-H or dMMR\(^{\text{yy}}\) (category 2B)

- Clinical trial
- Docetaxel rechallenge\(^{\text{vv,fff}}\)
- Other secondary hormone therapy\(^{\text{u}}\)
- Best supportive care
Role of RT in organ confined Prostate ca

- Sx (Open, Lap, Robotic)
- Brachy
- EBRT
  - Conventional 75.6 – 78 Gy/36-39 frs
  - Moderate Hypof 60Gy/20frs
  - SBRT 4-5 frs
- Active Surveillance
Prostate Cancer Risk Groups combine: Stage, PSA & Gleason score

- **Low risk**: (T1c, T2a Gleason 6, PSA <10)
- **Intermediate risk**: (T2b, T2c, Gleason 7, PSA 10-20)
- **High risk**: (T3, Gleason 8-10 or PSA > 20)
# ISUP Prostate Cancer Grade Groups

<table>
<thead>
<tr>
<th>Grade group</th>
<th>Gleason score</th>
<th>Gleason pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>≤6</td>
<td>≤3+3</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>3+4</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>4+3</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>4+4, 3+5, 5+3</td>
</tr>
<tr>
<td>5</td>
<td>9 or 10</td>
<td>4+5, 5+4, or 5+5</td>
</tr>
</tbody>
</table>
Prostate Cancer Treatment from (National Cancer Data Base-USA, 2016)
Cure Rates with Radiation versus Surgery for Early Stage Prostate Cancer

from the Cleveland Clinic.

The Radiation **Dose** is Critical

*IJROBP 2004; 58:25*

External beam $> 72$Gy

Surgery or Seeds

External beam $< 72$Gy

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Cure Rate (PSA cure) in 2991 Men By Therapy

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>5 yr</th>
<th>7 yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostatectomy</td>
<td>1034</td>
<td>81</td>
<td>76</td>
</tr>
<tr>
<td>EBRT ≥72 Gy</td>
<td>301</td>
<td>81</td>
<td>82</td>
</tr>
<tr>
<td>EBRT &lt;72 Gy</td>
<td>484</td>
<td>51</td>
<td>47</td>
</tr>
<tr>
<td>Brachytherapy</td>
<td>950</td>
<td>83</td>
<td>76</td>
</tr>
<tr>
<td>Brachytherapy + EBRT</td>
<td>222</td>
<td>77</td>
<td>77</td>
</tr>
</tbody>
</table>

BRFS: Biochemical relapse free survival.


Best results with high dose external
Improvements in RT techniques

**2D**

**3DCRT** (3 Dimensional Conformal Radiotherapy)

**IMRT** (Intensity Modulated Radiotherapy)

**IMRT with IGRT** (Image Guided Radiotherapy)

1.8 - 2 Gy per fraction (Total fractions 39-42 fractions/ 8-8.2 weeks)

**SBRT**

- **Moderately hypofractionated IMRT / VMAT with IGRT**
  (2.4 – 4 Gy per fraction over 4-6 weeks)

- **Extremely hypofractionated IMRT / VMAT with IGRT/SBRT**
  (6.5 Gy -10 Gy per fraction or greater: 35 Gy/ 5 fractions or 36.5 Gy/ 5 - 6 fractions 1-2 weeks)
Hypofr / SBRT in Prostate ca
Best matches for sbrt prostate:

Hypo-fractionated SBRT for localized prostate cancer: a German bi-center single treatment group feasibility trial.

Stereotactic radiotherapy for prostate cancer: A review and future directions.

Oligometastases from prostate cancer: local treatment with stereotactic body radiotherapy (SBRT).

Switch to our new best match sort order

Search results

Items: 1 to 20 of 376
Hypofractionation & SBRT for Prostate ca

Approved benefit (therapeutic Ratio)

Technical consideration:
  # High technology
  # Prostate motion
  # On-line tracking
  # Medical & Physics Expertise

Hypofractionation & SBRT

Patient’s convenience

Better resource utilization

Lower treatment cost ??
About Prostate motion

Factors significantly affect Prostate internal motion:

- Rectal filling
- Bladder filling
- Breathing
- Peristalsis of surrounding bowels

- Anterior-posterior directions about 2-5 mm
- Superior/inferior directions about 1.7-4.5 mm
- Lateral (left/right) direction about 1-2 mm
Movement of the prostate gland based on **daily** gas in rectum

Planned target

Missed badly if rectal gas pushes the prostate forward

No Rectal gas

Rectal gas
Methods of Prostate Tracking

- Implanted fiducial markers (gold seeds) and daily imaging
- Cone beam CT (on board imager)
- Implanted electromagnetic transponder (Calypso® system)
- Daily prostate 3D ultrasound
Prostate – rectum Spacer
( Polythene glycol hydro Gel )
Calypso Marker (Electromagnetic Transponders)

GPS for Calypso 4D Localization System
Most commonly used, practical & accepted by pts:

# Full comfortable bladder
# Empty rectum
IMRT  IGRT (image guided)
Lower Risk of Side Effects with Image Guided IMRT compared to IMRT

High-dose IGRT vs non-IGRT for prostate cancer

Late GU Grade 2+ Toxicity Free Survival

Fig. 1. Comparison of actuarial likelihood of grade 2 or higher late urinary toxicity for patients treated with image-guided radiotherapy (IGRT) to 86.4 Gy vs. intensity-modulated radiotherapy.
IMRT / VMAT
Evidence from Literature

# Hypofractionation (2.4-5 Gy/fr)  20 fractions

# SBRT (more than 5 Gy/fr)  4 - 5 fractions
## Table 6.1.7: Major phase III randomised trials of moderate hypofractionation for primary treatment

<table>
<thead>
<tr>
<th>Study/Author</th>
<th>n</th>
<th>Risk, ISUP grade, or NCCN</th>
<th>ADT</th>
<th>RT Regimen</th>
<th>BED, Gy</th>
<th>Median FU, mo</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee, et al. 2016</td>
<td>550</td>
<td>low risk</td>
<td>None</td>
<td>70 Gy/28 fx</td>
<td>80</td>
<td>70</td>
<td>5 yr. DFS 86.3% (n.s.)</td>
</tr>
<tr>
<td></td>
<td>542</td>
<td></td>
<td></td>
<td>73.8 Gy/41 fx</td>
<td>69.6</td>
<td></td>
<td>5 yr. DFS 85.3%</td>
</tr>
<tr>
<td>Dearnaley, et al.</td>
<td>1077/19</td>
<td>15% low 73% intermediate 12% high</td>
<td>3-6 mo. before and during EBRT</td>
<td>57 Gy/19 fx</td>
<td>73.8</td>
<td>62</td>
<td>5 yr. BCDF 85.9% (19 fx)</td>
</tr>
<tr>
<td>CHHiP 2012 [436]</td>
<td>1074/20</td>
<td></td>
<td></td>
<td>60 Gy/20 fx</td>
<td>77.1</td>
<td></td>
<td>90.6% (20 fx)</td>
</tr>
<tr>
<td></td>
<td>1065/37</td>
<td></td>
<td></td>
<td>74 Gy/37 fx</td>
<td>74</td>
<td></td>
<td>88.3% (37 fx)</td>
</tr>
<tr>
<td>Aluwini, et al.</td>
<td>403</td>
<td>30% ISUP grade 1 45% ISUP grade 2-3, 25% ISUP grade 4-5</td>
<td>None</td>
<td>64.6 Gy/19 fx</td>
<td>90.4</td>
<td>60</td>
<td>5 yr. RFS 80.5% (n.s.)</td>
</tr>
<tr>
<td>2015 [441], 2016</td>
<td>392</td>
<td></td>
<td></td>
<td>78 Gy/39 fx</td>
<td>78</td>
<td></td>
<td>5 yr. RFS 77.1%</td>
</tr>
<tr>
<td></td>
<td>[444,445]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catton, et al.</td>
<td>608</td>
<td>intermediate risk 53% T1c 46% T2a-c</td>
<td>None</td>
<td>60 Gy/20 fx</td>
<td>77.1</td>
<td>72</td>
<td>5 yr. BCDF both arms 85%</td>
</tr>
<tr>
<td>2017 [446]</td>
<td>598</td>
<td>9% ISUP grade 1 63% ISUP grade 2 28% ISUP grade 3</td>
<td></td>
<td>78 Gy/39 fx</td>
<td>78</td>
<td></td>
<td>HR: 0.96 (n.s)</td>
</tr>
</tbody>
</table>
### General guidelines for active treatment

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Strength rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform patients that no active treatment modality has shown superiority over any other active management options in terms of survival.</td>
<td>Strong</td>
</tr>
<tr>
<td>Inform patients that all active treatments have side effects.</td>
<td>Strong</td>
</tr>
</tbody>
</table>

### Surgical treatment

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Strength rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform patients that no surgical approach (open, laparoscopic- or robotic radical prostatectomy) has clearly shown superiority in terms of functional or oncological results.</td>
<td>Strong</td>
</tr>
<tr>
<td>Perform an extended lymph node dissection (LND), when a LND is deemed necessary.</td>
<td>Strong</td>
</tr>
<tr>
<td>Do not perform nerve-sparing surgery when there is a risk of extracapsular extension (based on cT stage, ISUP grade, nomogram, multiparametric magnetic resonance imaging).</td>
<td>Strong</td>
</tr>
<tr>
<td>Do not offer neoadjuvant androgen deprivation therapy before surgery.</td>
<td>Strong</td>
</tr>
</tbody>
</table>

### Radiotherapeutic treatment

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Strength rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer intensity-modulated radiation therapy (IMRT) or volumetric arc external-beam radiotherapy (VMAT) for definitive treatment of PCa by external-beam radiation therapy.</td>
<td>Strong</td>
</tr>
<tr>
<td>Offer moderate hypofractionation (HFX) with IMRT/VMAT, including image-guided radiation therapy to the prostate, to carefully selected patients with localised disease.</td>
<td>Strong</td>
</tr>
<tr>
<td>Ensure that moderate HFX adheres to radiotherapy protocols from trials with equivalent outcome and toxicity, i.e. 60 Gy/20 fractions in four weeks or 70 Gy/28 fractions in six weeks.</td>
<td>Strong</td>
</tr>
</tbody>
</table>
### PRINCIPLES OF RADIATION THERAPY

Table 1: Regimens that have shown acceptable efficacy and toxicity. The optimal regimen for an individual patient warrants evaluation of comorbid conditions, voiding symptoms and toxicity of therapy. Additional fractionation schemes may be used as long as sound oncologic principles and appropriate estimate of BED are considered.

<table>
<thead>
<tr>
<th>Regimen for Definitive Therapy</th>
<th>NCCN Risk Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Low&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Beam Therapies</td>
<td></td>
</tr>
<tr>
<td>72–80 Gy at 2 Gy per fraction</td>
<td>✓</td>
</tr>
<tr>
<td>75.6–81.0 Gy at 1.8 Gy per fraction</td>
<td>✓</td>
</tr>
<tr>
<td>70.2 Gy at 2.7 Gy per fraction</td>
<td>✓</td>
</tr>
<tr>
<td>70 Gy at 2.5 Gy per fraction</td>
<td>✓</td>
</tr>
<tr>
<td>60 Gy at 3 Gy per fraction</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Table 6.1.8: Selected trials on extreme hypofractionation for intact localized PCa

<table>
<thead>
<tr>
<th>Reference</th>
<th>n</th>
<th>med FU (mo)</th>
<th>Risk-Group</th>
<th>Regimen (TD/fx)</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeman, et al. 2014 [451]</td>
<td>1,743</td>
<td>-</td>
<td>41% low, 42% intermediate, 10% high, 7% data missing</td>
<td>35-40 Gy/4-5 fx (8% SBRT-boost 19.5-21.8 Gy/3 fx after 45-50 Gy EBRT)</td>
<td>FFBF 92% at 2 yr. 99% low risk 97-85% intermediate 87% high risk</td>
</tr>
<tr>
<td>Katz, et al. 2014 [452]</td>
<td>515</td>
<td>72</td>
<td>63% low, 30% intermediate, 7% high</td>
<td>35-36.25 Gy/5 fx</td>
<td>FFBF at 7 yr. 96% low risk 89% intermediate 69% high risk</td>
</tr>
</tbody>
</table>

EBRT = external beam radiotherapy in standard fractionation; FFBF = freedom from biochemical failure; FU = follow-up; fx = number fractions; mo = months; n = number of patients; TD = total dose; SBRT = stereotactic body radiotherapy; y = year.
Are we Ready?

• Data from level I evidence supports the use of hypofractionated in prostate ca (4 - 6.5 wks) provided strict IGRT IMRT protocols are followed.

• Extreme hypofractionated regimens/SBRT (7 - 9 Gy per fraction for 5 fractions) are promising but long-term level I results are awaited (wait for more data)
Active Surveillance
Case I
74 old retired teacher with prostate ca T2c, PSA 22, GS 4+5
Pt has IHD, DM, Renal failure on dialysis

Case II
64 old businessman with T2a, PSA 9, GS 3+3
# Active Surveillance Vs Watchful Waiting

<table>
<thead>
<tr>
<th></th>
<th>Active surveillance</th>
<th>Watchful waiting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment intent</strong></td>
<td>curative</td>
<td>Palliative</td>
</tr>
<tr>
<td><strong>Follow up</strong></td>
<td>Predefined schedule</td>
<td>Patient specific</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td>DRE, PSA, re-biopsy, (MRI)</td>
<td>Not predefined</td>
</tr>
<tr>
<td><strong>Life expectancy</strong></td>
<td>&gt; 10 years</td>
<td>&lt; 10 years</td>
</tr>
<tr>
<td><strong>Aim</strong></td>
<td>Minimize treatment related toxicity without compromising survival</td>
<td>Minimize treatment related toxicity</td>
</tr>
</tbody>
</table>

*European Association of Urology*
Screening Indolent cancer

- Up to 50% from screen detected patients
  \((Klotz\ Urol\ Oncol;\ 2006)\)

- Rotterdam (screening): 49%
  \((Laurila\ AUA\ 2006)\)

- From 7 to 69%
  \((Dall'\Era\ Eur\ Urol\ 2012)\)
SPCG-4
(Bill et al, N Eng J Med 2011)

- At 15 yrs, 15 pts to be treated to save 1
- > 75 % T2 - mean PSA 12.8
Radiotherapy / Watchful Waiting: localized (Widmark ASTRO 2011)

RCT: N = 214 T1b-T2, pN0 grade 1-2 M0 (1986-1997): RT (64-68 Gy) / watchful waiting

Minium follow up: 16 years (Widmark ASTRO 2011, LBA)

<table>
<thead>
<tr>
<th></th>
<th>RT (N=207) HR (95%CI)</th>
<th>WW (N=207) HR (95%CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS (20 years)</td>
<td>0.35 (0.25-0.48)</td>
<td>0.31 (0.22-0.42)</td>
<td>0.26</td>
</tr>
<tr>
<td>SS (15 years)</td>
<td>0.79 (0.71-0.89)</td>
<td>0.72 (0.63-0.83)</td>
<td>0.31</td>
</tr>
<tr>
<td>Mets free survival (15 years)</td>
<td>0.81 (0.74-0.90)</td>
<td>0.66 (0.57-0.77)</td>
<td>0.022</td>
</tr>
<tr>
<td>Clinical RFS (15 years)</td>
<td>0.67 (0.58-0.78)</td>
<td>0.40 (0.31-0.51)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

*Clinical relapse: PSA OR local clinical relapse OR specific death
Active Surveillance
Table 6.1.2: **Active surveillance** in screening-detected prostate cancer

<table>
<thead>
<tr>
<th>Studies</th>
<th>n</th>
<th>Median FU (mo)</th>
<th>pT3 in RP patients</th>
<th>10-year OS (%)</th>
<th>10-year CSS (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Van As, et al. 2008</td>
<td>326</td>
<td>22</td>
<td>8/18 (44%)</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>Carter, et al. 2007</td>
<td>407</td>
<td>41</td>
<td>10/49 (20%)</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>Adamy, et al. 2011</td>
<td>538-1,000</td>
<td>48</td>
<td>4/24 (17%)</td>
<td>90</td>
<td>99</td>
</tr>
<tr>
<td>Soloway, et al. 2010</td>
<td>99</td>
<td>45</td>
<td>0/2</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Roemeling, et al. 2007</td>
<td>278</td>
<td>41</td>
<td>-</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>Khatami, et al. 2007</td>
<td>270</td>
<td>63</td>
<td>-</td>
<td>n.r.</td>
<td>100</td>
</tr>
<tr>
<td>Klotz, et al. 2015</td>
<td>993</td>
<td>77</td>
<td>-</td>
<td>85</td>
<td>98.1</td>
</tr>
<tr>
<td>Tosolan, et al. 2015</td>
<td>1,298</td>
<td>60</td>
<td>-</td>
<td>93</td>
<td>99.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,204-4,671</td>
<td>46.5</td>
<td>-</td>
<td>93</td>
<td>100</td>
</tr>
</tbody>
</table>

* Patients receiving active therapy following initial active surveillance.
Longest follow up data: Toronto

Klotz J Clin Oncol 2010

• **Inclusion criteria**
PSA < 10, Gleason = 6, (3+4), T1c - T2a  
([If expected survival > 15 years: < 3 + cores, < 50% each core]

• **Follow up: how?**
PSA, DRE / 3 months during 2 years, then / 6 months (if stable PSA)  
Prostate biopsies (10 - 12 cores) at 1 year, then / 3 years until 80 years of age

**Treatment: when?**
• PSA DT < 3 years (based on at least 8 values)
• Grade progression (= 7: 4+3)
• Patient's request
Active surveillance
Toronto, n= 993

55% men untreated after 15y

ORIGINAL ARTICLE

10-Year Outcomes after Monitoring, Surgery, or Radiotherapy for Localized Prostate Cancer


Comments open through October 19, 2016
ProtecT Study
(Prostate Testing for Cancer and Treatment)

UK 1999- 2008
• World’s first & largest trial comparing active surveillance, Sx, RT for localized Pca
• Primary end-point prostatic specific survival at 10 yrs
• All-cause death
• Cancer progression
• Patient-reported outcome

# Fit men, No symptoms, age 50-69 yrs
# Bx for raised PSA → AS , Sx or RT
# T1c 75%

<table>
<thead>
<tr>
<th>Stage</th>
<th>%</th>
<th>GS</th>
<th>%</th>
<th>PSA</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1c</td>
<td>75%</td>
<td>6</td>
<td>77%</td>
<td>3-5.9</td>
<td>68%</td>
</tr>
<tr>
<td>T2</td>
<td>25%</td>
<td>7</td>
<td>20%</td>
<td>6-9.9</td>
<td>21%</td>
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<td></td>
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<td>8-10</td>
<td>2%</td>
<td>&gt; 10</td>
<td>10%</td>
</tr>
</tbody>
</table>
Conclusions at 10 yrs

- **99%** survival without differences between treatment arms
- **10%** of men died of all causes with No differences between the arms
- **80%** of men with AS had No signs of progression
- Radical treatments reduced mets & progression by half
- Sx & RT had **same effectiveness**
- More than **50%** had received treatment by 10 yrs
- **44%** men on AS avoided treatment
Active surveillance follow up

- Follow up in AS should be based on repeat biopsy, serial PSA measurements and clinical examination (DRE). The optimal biopsy regimen is still unclear.

- MRI cannot replace follow-up biopsies and should not be used alone as an assessment tool to prompt active treatment

• Further research is needed to distinguish “lethal” from non-lethal prostate cancer in order to give:
  “the right treatment to the right patient at the right time”

• The data should aid in counselling patients & enabling them to make “an informed” choice on management options.
Conclusion

• Sx, RT, Active Surveillance & Watchful waiting
• RT: Hypofractionation is getting more popularity
• Awaiting long results of SBRT

• AS is a real, good option for patients with a low risk Pca
• Whatever the patient's age (provided 10 to 15 years survival expected), otherwise WW is definitely a better choice
• Improvement: imaging / biomarkers
• All treatment options required to be discussed with patients, in terms of their outcomes (functional and oncologic) and their costs.
• Multidisciplinary approach
Thank You