

CHOOSING THE RADIATION DOSE IN THE TREATMENT OF PROSTATE CANCER

*Information for patients about the
choice between two treatment plans*

from the Radboud University Medical
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This research is subsidized by the Dutch Cancer Society and focuses on the possibility and desirability of involving patients in treatment choices. The authors of the decision aid or their affiliations do not gain or lose by choices people make after using the decision aid. The last update was 10th of January, 2013.

Trade-off

In radiotherapy, a trade-off needs to be made between cure and side effects. A higher radiation dose leads to better outcomes, but also to more side effects. We would like to involve you as a patient in this trade-off. To this end, information about the possible treatment choices is presented to you.

Which side effects

Radiotherapy aims to destroy cancer cells, but it may also damage healthy cells in the organs close to the prostate. This may lead to gut and urinary problems. Such symptoms can be temporary or they may be long-lasting. In addition to temporary impotence due to hormone therapy, radiotherapy may additionally cause permanent impotence (loss of erections).

Minor side effects: These may involve urgency, pain or irritation while urinating, some blood and mucus with bowel movements or constipation.

Severe side effects: Similar side effects may also occur with more severity, affecting your daily life. The

need to visit a toilet every hour, for example, could seriously interfere with going on a daytrip. It may also be difficult to be faced with incontinence (unwanted loss of urine or stool) or to face a medical intervention for urine retention or bleeding. Such symptoms are referred to as severe side effects. Impotence is also considered a severe side effect.

Risk of side effects

Most patients will only experience minor and/ or temporary side effects. These side effects will be disregarded below. A smaller number of patients, however, will be faced with severe and lasting side effects. The information below refers to severe and long-lasting side effects.

Radiation dose

The figures below show the outcome of two different treatment plans. The numbers are based on the outcome of large patient groups. Of course, in your particular case, it cannot be predicted with certainty whether cure and/ or side effects will occur for you.

Treatment A involves a radiation dose of 70 Gray. Treatment B involves a dose of 74 Gray, that is a higher radiation dose. The numbers beneath are based on a 3D-conformal radiotherapy technique. The treatment with a higher dose more often leads to cure (more green). The life expectancy for an average 70 year old man is usually longer after treatment with a higher dose. On the other hand, it also leads to more severe side effects (more red). There is a higher chance of permanent loss of erections and long-lasting severe urinary and gut problems after a higher dose, as you can see in the figures.

There is a choice

Some people focus on cure, while others aim to avoid extra side effects. We invite you to consider your own preference for one or the other treatment option.

Your disease status

Your disease may be more or less advanced. Patients in the low risk group are characterized by a PSA value less than 10 ng/ml, a Gleason score less than 7, and a T1 or T2 tumor size (please check with your doctor). If you don't fall in the low risk group, you are in the medium to high risk group. The latter group is subdivided in three different age groups. Please pay close attention to the categories in the upper left corner of the figures to see if it is applicable.

Literature

van Tol Geerdink JJ, Stalmeier PFM, Pasker de Jong PCM, Huizenga H, van Lin E, Schimmel EC, Leer JW, van Daal WAJ. Systematic review of the effect of radiation dose on tumor control and morbidity in the treatment of prostate cancer by 3D CRT. *International Journal of Radiation Oncology, Biology, Physics*, 2006;64:534-543.

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van Tol Geerdink JJ, Stalmeier PFM, ENJTh van Lin, EC Schimmel, H Huizenga, WAJ van Daal, JW Leer. Do patients with localized prostate cancer treatment really want more aggressive treatment? *Journal of Clinical Oncology*, 2006;24:4581-6.

Stalmeier PFM, van Tol Geerdink JJ, van Lin ENJTh, Schimmel EC, Huizenga H, van Daal WAJ, and Leer JW. Doctors' and patients' preferences for participation and treatment in curative prostate cancer radiotherapy. *Journal of Clinical Oncology*, 2007;25:3096-3100.

van Tol Geerdink JJ, JW Leer, ENJTh van Lin, EC Schimmel, H Huizenga, WAJ van Daal, Stalmeier PFM. Offering a treatment choice in the irradiation of prostate cancer leads to better informed and more active patients, without harm to well-being. *International Journal of Radiation Oncology, Biology, Physics*, 2008;70:442-8.

All ages
Low Risk Group

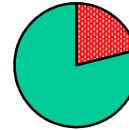
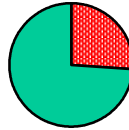
A (70 Gray)

B (74 Gray)

Cured after 5 years
Tumor no longer detectable
Even PSA remains low

Cured after 5 yrs
86 out of 100

Cured after 5 yrs
89 out of 100



Differences in life expectancy
Compared to men without prostate cancer

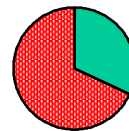
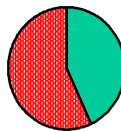
Almost none

Almost none

Loss of erections
Permanent loss of the ability to have erections

Loss of erections
57 out of 100

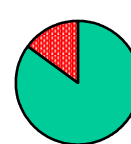
Loss of erections
68 out of 100



Severe gut problems
More frequent stool
Unintentional stool loss
Constipation
Pain with bowel movements
Slime/blood in stool
Affects daily life

Severe gut problems
8 out of 100

Severe gut problems
15 out of 100



Severe urinary problems
More frequent urination
Unintentional urine loss
Difficulty urinating
Pain with urination
Blood in urine
Affects daily life

Severe urinary problems
8 out of 100

Severe urinary problems
11 out of 100



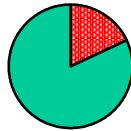
**younger than 57
medium to high risk**

Alive after 5 years

All causes of death included, not only prostate cancer

A (70 Gray)

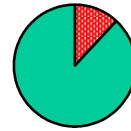
Alive after 5 yrs
82 out of 100



4 years

B (74 Gray)

Alive after 5 yrs
88 out of 100



2 years

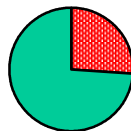
Loss in life expectancy

Compared to men without prostate cancer

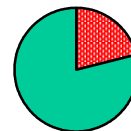
Cured after 5 years

Tumor no longer detectable
Even PSA remains low

Cured after 5 yrs
74 out of 100



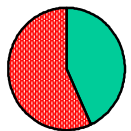
Cured after 5 yrs
79 out of 100



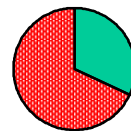
Loss of erections

Permanent loss of the ability to have erections

Loss of erections
57 out of 100



Loss of erections
68 out of 100



Severe gut problems

More frequent stool
Unintentional stool loss
Constipation
Pain with bowel movements
Slime/blood in stool
Affects daily life

Severe gut problems
8 out of 100



Severe gut problems
15 out of 100



Severe urinary problems

More frequent urination
Unintentional urine loss
Difficulty urinating
Pain with urination
Blood in urine
Affects daily life

Severe urinary problems
8 out of 100



Severe urinary problems
11 out of 100



your age: 57-72
medium to high risk

Alive after 5 years

All causes of death included, not only prostate cancer

A (70 Gray)

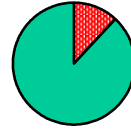
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82 out of 100



2 years

B (74 Gray)

Alive after 5 yrs
88 out of 100

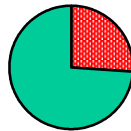


1 year

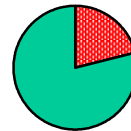
Loss in life expectancy

Compared to men without prostate cancer

Cured after 5 yrs
74 out of 100



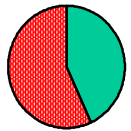
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79 out of 100



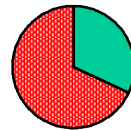
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Severe urinary problems
11 out of 100



**older than 72
medium to high risk**

Alive after 5 years

All causes of death included, not only prostate cancer

A (70 Gray)

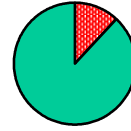
Alive after 5 yrs
82 out of 100



1 year

B (74 Gray)

Alive after 5 yrs
88 out of 100



0 years

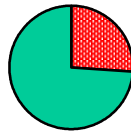
Loss in life expectancy

Compared to men without prostate cancer

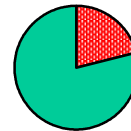
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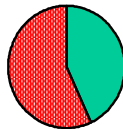
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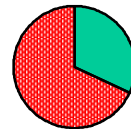
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Loss of erections
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