1H-MR spectroscopic imaging for characterization of prostate tumors: Proof of principle of imaging the polyamine concentration at a 7 Tesla MRI

Published: 16-07-2010
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Proof of principle of imaging the polyamine concentration with 7 Tesla 1H-MR spectroscopic imaging in patients with prostate cancer

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Renal and urinary tract neoplasms benign
Study type	Observational invasive

Summary

ID

NL-OMON38285

Source
ToetsingOnline

Brief title
7T MRS to characterize prostate cancer

Condition

- Renal and urinary tract neoplasms benign

Synonym
polyamines, Prostate cancer

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Utrecht
Source(s) of monetary or material Support: Dutch Cancer Society (NKB/KWF) project

UU2009-4500

Intervention

Keyword: 7T, MRS, Prostate cancer

Outcome measures

Primary outcome

Obtain proof of principle of the imaging of the polyamine concentration in

patients with prostate cancer, using 1H-MR spectroscopic imaging at 7T.

Secondary outcome

Study the concentration ratios of polyamines relative to creatine, choline and

citrate that occur in prostate tumors and healthy parts of the prostate.

Study description

Background summary

Escalation of the radiation dose to the prostate has been shown to benefit the outcome of radiotherapy for patients with prostate cancer, especially for aggressive tumors. It seems there is a correlation between the total required radiation dose and the prostate cancer Gleason score, which is related to tumor differentiation. To facilitate radiotherapy treatment planning, imaging is required to localize these aggressive tumor areas in the prostate. Several MRI techniques can be used to estimate aggressiveness, but there is a search for better imaging parameters. The spectroscopic imaging of polyamines seems promising. Polyamines are thought to be inversely correlated with Gleason score. On a regular MRI (up to 3 Tesla) the poor spectral resolution limits the capacity to image these polyamines. This study will investigate whether polyamines can be measured on a 7 Tesla MRI.

Study objective

Proof of principle of imaging the polyamine concentration with 7 Tesla 1H-MR spectroscopic imaging in patients with prostate cancer

Study design

Observational study.

Study burden and risks

Patients will undergo an MRI scan at the 7T MRI scanner. The scan will be scheduled in combination with a regular appointment.
The use of an endorectal coil for MRI of the prostate is common practice. This endorectal coil causes mild discomfort, but no risks have ever been described.
For the patients included in the study there is no individual benefit.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

prostate cancer
scheduled for a radiotherapy treatment

Exclusion criteria

Patient who meet the UMC Utrech 7T MRS exlusion criteria

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	31-03-2011
Enrollment:	40
Type:	Actual

Ethics review

Approved WMO

Date:	16-07-2010
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Utrecht (Utrecht)

Approved WMO

Date:	13-04-2012
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Utrecht (Utrecht)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL32058.041.10