Optimization of MRI protocols in patients.

Published: 21-03-2007
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The aim is the optimisation of MRI-sequences in patients for clinical and scientific purposes.

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON30773

Source
ToetsingOnline

Brief title
Optimization MRI protocols.

Condition

- Other condition

Synonym
not applicable

Health condition

géén van de bovenstaande, namelijk optimalisatie van MRI scan protocollen

Research involving
Human

Sponsors and support

Primary sponsor: Erasmus MC, Universitair Medisch Centrum Rotterdam
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: MRI, Optimization, Patiënts, Sequences

Outcome measures

Primary outcome

-enhancement of the signal-to-noise ratio and resolution

-the decrease in scantime for specific sequences

-enhancement of the detectability of specific pathologies.

Secondary outcome

Not applicable

Study description

Background summary

Magnetic Resonance Imaging (MRI), is a method used to render images of the inside of an object by using a strong magnetic field..After placing the patient in a bore, radiowaves are sent to the patient. These are absorbed in the patient and re-expelled to the scanner. This technique is non-invasive, uses no radiation, and no side-effects have been reported since its application.
Different scans are produced during one examination. These scans have their own specifications called sequences. These produce a different image contrast. For instance, in some sequences water is white and on the other is black depending on the weighting.
The longer a particular sequence is taking place the better the signal-to-noise balance. But because the patient is not able to reach more more than 45 minutes to an hour on the MRI-table a compromise has to be found between the scanning time, resolution and signal-to-noise balance.
Since the MRI scanner has to be upgraded regularly and new sequences are introduced, technical optimisation has to be performed for clinical purposes and scientific research.The ultimate purpose is to reach a protocol with sufficient information and resolution in the shortest possible time.
The optimisation of sequences is primarly performed using phantoms. But during the optimisation it is needed to compare different sequences in humans. Primarly, this is performed in healthy volunteers. But in several cases a sequence has to be optimized in order to better analyse a specific pathology.

This can only be performed in patients with known pathology.

Study objective

The aim is the optimisation of MRI-sequences in patients for clinical and scientific purposes.

Study design

The MRI will be performed at the department of radiology of the ErasmusMC.The total scan time will be limited to a maximum of 45 minutes. There will be no intravenous injection of contrast. During the examination, the patient will have contact with the specialist who is performing the MRI-scan.On any time, the patient can stop the examination, no reason has to be given.
During the examination, the patient is laying still in the bore.Sometimes it is necessary to hold the breath during some seconds.

Study burden and risks

not applicable

Contacts

Public
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Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

informed consent
age 18-65 years
not known medical problems in contradiction with the study

Exclusion criteria

- no informed consent
- patients who are to ill
- patients with claustrophobia
- patients using medicaments which can influence the results of the study
contra-indications for MRI
- pregnancy

Study design

Design

Study type: Observational non invasive

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-04-2007
Enrollment:	400
Type:	Actual

Ethics review

Approved WMO Date:	21-03-2007
Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)
Approved WMO Date:	30-06-2011
Application type:	Amendment
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

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	NL16053.078.07