Optimization of ASL MRI in healthy elderly, and validation with TCD and NIRS

Published: 16-08-2012
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The aim is to optimize the brain imaging technique; specifically the settings for the ASL MRI sequence, and to explore the parameters of use to our study.

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

Summary

ID

NL-OMON37114

Source
ToetsingOnline

Brief title
ASL optimization

Condition

- Other condition

Synonym
cerebral blood flow, cerebral perfusion

Health condition

er wordt niet gekeken naar een aandoening, maar naar de toepassing van de techniek

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud
Source(s) of monetary or material Support: Subsidie van Alzheimer Nederland

toegekend aan dr. Olga Meulenbroek voor onderzoek met deze nieuwe MRI sequentie

Intervention

Keyword: ASL MRI, healthy elderly, optimization

Outcome measures

Primary outcome

CBF measured with ASL (ml/100 gr/min), and cerebral auto regulation measured

with TCD (cm/s), NIRS (concentration oxy/deoxy Hb in mmol/L)

Secondary outcome

non

Study description

Background summary

ASL is a technique with which one can measure cerebral perfusion in a MRI scanner. This MRI technique will be used in an intervention study later this year. Prior to testing AD patients for the intervention study, 10 healthy elderly will be measured using ASL MRI to optimize the brain imaging technique. The quality of these images will be compared, and subsequently the most optimal scan settings will be used for the ASL measurements in the NILVAD study. Furthermore, the ASL MRI measurements will be compared with TCD and NIRS data.

Study objective

The aim is to optimize the brain imaging technique; specifically the settings for the ASL MRI sequence, and to explore the parameters of use to our study.

Study design

Elderly who fulfill the criteria are informed about the study. When willing to participate, they are asked for their written informed consent. The study is comprised of one visit to the hospital. Participants will be asked to first undergo MRI (taking approximately one hour), followed by a combined TCD/ NIRS measurement (taking approximately two hours). Based on the data from the first six participants, we will determine if any more measurements (i.e.

participants) are necessary, up to a maximum of ten participants.

Study burden and risks

Participation will cost only one visit of approximately three hours and travel expenses will be reimbursed. The techniques used (MRI, TCD/NIRS) have no risk for the participants. Healthy elderly are preferred, as they are as close in comparison with Alzheimer*s patients, and to keep the burden for patients to a minimum.

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

healthy elderly aged over 50 years, MMSE score over 25

Exclusion criteria

neurological or psychiatric disorders
contraindication for MRI (metal implantates, claustrophobia)

Study design

Design

Study type: Observational non invasive

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	18-03-2013
Enrollment:	10
Type:	Actual

Ethics review

Approved WMO

Date:	16-08-2012
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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	NL41054.091.12

Study results

Date completed: 31-03-2014

Actual enrolment: 4