Beta amyloid oligomers in the early diagnosis of AD and as marker for treatment response

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Ethical review	Approved WMO
Status	Pending
Health condition type	Dementia and amnestic conditions
Study type	Observational invasive

Summary

ID

NL-OMON31716

Source
ToetsingOnline

Brief title
EDAR

Condition

- Dementia and amnestic conditions

Synonym
Alzheimer's disease

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: Diagenic, een Noors biotech bedrijf,Europese Unie

Intervention

Keyword: Alzheimer's disease, amyloid, cerebrospinal fluid, diagnosis

Outcome measures

Primary outcome

- Area under the curve (AUC) of a Receiver Operating Characteristic (ROC) curve for the ability of beta amyloid oligomers to differentiate subjects with AD from control subjects and subjects with other types of dementia.

- AUC of a ROC curve for the ability of beta amyloid oligomers to differentiate subjects with MCI who progressed to AD at follow-up from those who will remain stable.

- AUC of ROC curves to investigate the difference in diagnostic accuracy for AD of beta amyloid oligomers compared to other biomarkers of AD.

- Differences in oligomer levels according to genotype.

- Change over time of oligomer levels in control subjects, subjects with MCI, and subjects with AD.

Additional outcome for amendment:

- Difference in gene expression profiles between subjects with high and low beta amyloid oligomer levels.

Secondary outcome

- Correlation between cognitive markers and levels of beta amyloid oligomers cross-sectionally and over time.

Study description

Background summary

Alzheimer*s disease (AD) is one of the most common neurodegenerative disorders. There are yet no accurate biomarkers for the early stage of the disease. The goal of the project is to develop new diagnostic markers of AD which can be used for the early diagnosis and for the monitoring of treatment response in drug trials. The project focuses on beta amyloid oligomers and the effect of genes involved in beta amyloid processing on these oligomers. Oligomers have been recognized as a key pathogen in AD only recently.

Background of the amendment:
Previous studies indicated that subjects with familial AD have different gene expression profiles compared to control subjects. The relation between beta amyloid oligomer levels and gene expression profiles has not been investigated yet.

Study objective

The project has the following objectives:

1. To investigate the diagnostic value of beta amyloid oligomers in CSF and plasma for AD in subjects with mild dementia.
2. To investigate whether beta amyloid oligomers in CSF and plasma can predict AD in subjects with mild cognitive impairment.
3. To compare the diagnostic accuracy of the beta amyloid oligomers with that of known biomarkers of AD.
4. To investigate whether genes involved in beta amyloid processing modify the levels of beta amyloid oligomers.
5. To investigate the change over time of in beta amyloid oligomers in CSF and plasma.

Objectives added as part of amendment:
6. To investigate which set of gene expression profiles are associated with beta amyloid oligomer levels both cross-sectionally and longitudinally
7. To compare the diagnostic accuracy of beta amyloid oligomer levels for a diagnosis of AD with that of gene expression profiles.

Study design

Cross-sectional study and prospective cohort study

Study burden and risks

There are no direct potential benefits for the participants but the study is likely to increase the diagnostic accuracy for AD which will be beneficial for future patients with cognitive impairments. Lumbar puncture is safe and well tolerated. Collection of CSF samples may be accompanied by post-lumbar puncture headache in less than 5% of the patients but this complication is reversible. Other complications such as bleeding, infection, or leakage have been described but these are very uncommon. They have not been noted by the clinical centres in the study which have already performed lumbar puncture for research purposes during the past five years in over 1000 subjects.

Contacts

Public
Vrije Universiteit Medisch Centrum

Postbus 7057
1007 MB Amsterdam
NL
Scientific
Vrije Universiteit Medisch Centrum

Postbus 7057
1007 MB Amsterdam
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Dementia or mild cognitive impairment according to established clinical criteria

Exclusion criteria

Contra indication for lumbar puncture
Score on Mini Mental State examination below 18
Co-morbid disorders that have a major impact on cognition
Age below 40 (demented subjects and controls) or below 60 (subjects with mild cognitive impairment)
Cognitive impairment (control subjects)

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Diagnostic

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-09-2007
Enrollment:	100
Type:	Anticipated

Ethics review

Approved WMO

Application type:	First submission
Review commission:	METC Amsterdam UMC

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	NL18420.029.07