Trial Description

Title

Validation of the new Positron Emissions Tomography (PET) Radioligand (+)-[18F]-Flubatine for Imaging of Nicotinic Acetylcholine Receptors (nAChR) in Alzheimer's Dementia

Trial Acronym

+Flubatine

URL of the trial

[---]*

Brief Summary in Lay Language

This clinical study has been started to improve the diagnostics of Alzheimer Dementia (AD). With our new radioligand (+)-[18F]-NCFHEB, Alzheimer Dementia imaging and evaluation will be possible for Positron Emissions Tomography (PET). The study is structured into pre-examination, ß-Amyloid-PET/MRI examination, the main studyday (PET examination with (+)-[18F]-NCFHEB) and a post-examination. 20 patients with Alzheimer Dementia and 20 subjects without Alzheimer Dementia will be included in this study. Additional 3-5 subjects will be used to determine exact radiation exposure values.

Brief Summary in Scientific Language

This clinical study has been started to improve the diagnostics of Alzheimer Dementia (AD). With our new radioligand (+)-[18F]-NCFHEB, Alzheimer Dementia imaging and evaluation will be possible for Positron Emissions Tomography (PET). As the name implies, (+)-[18F]-NCFHEB is a radioactive substance, which binds at nicotinic acetylcholine receptors and can be depicted via PET-examination. This study will help to find differences in the transmission of this substance between healthy controls and patients with alzheimer dementia and will help in finding fitting therapy.The study is structured into pre-examination, ß-Amyloid-PET/MRI examination, the main studyday (PET examination with (+)-[18F]-NCFHEB) and a post-examination. 20 patients with AD and 20 subjects without AD (healthy controls) will be included in this study. Additional 3-5 subjects will be used to determine exact radiation exposure values.

Organizational Data

- DRKS-ID: **DRKS00005819**
- Date of Registration in DRKS: **2014/04/01**
- Date of Registration in Partner Registry or other Primary Registry: **[---]***
- Investigator Sponsored/Initiated Trial (IST/IIT): **yes**
- Ethics Approval/Approval of the Ethics Committee: **Approved**

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Date of Registration in DRKS: **2014/04/01**
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Investigator Sponsored/Initiated Trial (IST/IIT): **yes**
Ethics Approval/Approval of the Ethics Committee: **Approved**

- (leading) Ethics Committee Nr.: **442/12-24092012 , Ethikkommission an der Medizinischen Fakultät der Universität Leipzig**

Secondary IDs

- EudraCT-No.
(for studies acc. to Drug Law): **2012-003473-26**

Health condition or Problem studied

- ICD10: **F00 - Dementia in Alzheimer disease**
- Free text: **healthy volunteers**

Interventions/Observational Groups

- Arm 1: **(+)-[18F]-NCFHEB-PET for patients with Alzheimer`s Dementia**
- Arm 2: **(+)-[18F]-NCFHEB-PET for subjects without Alzheimer`s Dementia**

Characteristics

- Study Type: **Interventional**
- Study Type Non-Interventional: **[---]***
- Allocation: **Non-randomized controlled trial**
- Blinding: **[---]***
- Who is blinded: **[---]***
- Control: **Active control (effective treament of control group)**
- Purpose: **Pharmacogenetics**
- Assignment: **Parallel**
- Phase: **I**
- Off-label use (Zulassungsüberschreitende Anwendung eines Arzneimittels): **N/A**

Primary Outcome

Examination of (+)-[18F]-Flubatine as in-vivo marker of brain α4β2 nicotinic acetylcholine receptor availability in patients with mild Alzheimer's disease compared to healthy controls and its evaluation for clinical routine. This will be evaluated on the informations gathered through the (+)-[18F]-Flubatine PET investigation.

Secondary Outcome

1. Determination of the pharmacokinetic parameters and exposure to radiation by (+)-[18F]-Flubatine

2. Determination of safety and tolerability of (+)-[18F]-Flubatine

3. Development of a kinetic model in order to quantitatively describe regional central α4β2 nAChR availability in the brain of patients with AD, as well as healthy volunteers

Countries of recruitment

- DE **Germany**

Locations of Recruitment

- University Medical Center **Klinik und Poliklinik für Nuklearmedizin, Leipzig**
- University Medical Center **Klinik und Poliklinik für Psychiatrie und Psychotherapie, Leipzig**

Recruitment

- Planned/Actual: **Actual**
- (Anticipated or Actual) Date of First Enrollment: **2014/04/11**
- Target Sample Size: **40**
- Monocenter/Multicenter trial: **Monocenter trial**
- National/International: **National**

Inclusion Criteria

- Gender: **Both, male and female**
- Minimum Age: **55 Years**
- Maximum Age: **no maximum age**

Additional Inclusion Criteria

Healthy volunteers:

1. Males/females aged older than or equal to 55 years of age, females must be without childbearing potential (confirmed by either: age ≥ 60; or history of hysterectomy; or hormone analysis in serum: Estradiol ≤ 20 pg/mL and follicle stimulating hormone (FSH) ≥ 40 IU/L, or last spontaneous bleeding at least 2 years prior to the study start)

2. Able to understand the information provided on purpose and conduct of the clinical study

3. Have signed the informed consent to participate in the study

4. No history of any psychiatric or neurological diseases. Clinical Dementia Rating (CDR) score of 0 (zero) and psychometric test results lying within an interval of one standard deviation from the mean value (mean value and standard deviations adjusted for age and education), for all subtests of the test battery applied.

5. Adequate visual and auditory abilities to complete neuropsychological testing, as assessed by the recruiting investigator

6. ≥ 1 year no smoking or passive smoking

AD patients

1. Males/females aged older than or equal to 55 years of age; females must be without childbearing potential (confirmed by either: age ≥ 60; or history of hysterectomy; or hormone analysis in serum: Estradiol ≤ 20 pg/mL and follicle stimulating hormone FSH ≥ 40 IU/L, or last spontaneous bleeding at least 2 years prior to the study start)

2. Capable of understanding the information provided on purpose and conduct of the clinical study and able to give meaningful informed consent by himself / herself

3. Have signed the informed consent to participate in the study

4. Adequate visual and auditory acuity to complete neuropsychological testing, as assessed by the recruiting investigator

5. AD patients, characterized by:
o Progressive cognitive decline with DSM-IV criteria for Dementia
o Probable Alzheimer Disease according to the NINCDS-ADRDA criteria
o Severity of dementia: mild, with a score of 1 on the Clinical Dementia Rating (CDR) and 20-26 on the Mini Mental State Examination (MMSE)

6. ≥ 1 year no smoking or passive smoking

Exclusion criteria

All subjects:

1. Haematological or biochemical parameters that are outside the normal range and are considered clinically significant by the investigator.

2. History of alcohol or drug abuse/dependence

3. History of major allergic reactions

4. History of epilepsy

5. History of electroconvulsive therapy

6. Any significant disease or unstable medical condition (e.g. unstable angina, myocardial infarction or coronary revascularization in the preceding 12 months, cardiac failure, chronic renal failure, chronic hepatic disease, severe pulmonary disease, blood disorders, poorly controlled diabetes, chronic infection)

7. Criteria which in the opinion of the investigator preclude participation for scientific reasons, for reasons of compliance, or for reasons of the volunteer's safety

8. Participants in whom magnetic resonance imaging (MRI) is contraindicated.

9. Patient / Volunteer is in custody by order of an authority or a court of law

10. Exclusion periods from other studies or simultaneous participation in other clinical studies

11. Patient / Volunteer has received another investigational drug in the preceding 2 months

12. Previous enrollment in this study

13. Active Smokers

14. Interuption of central acting drugs less than 5 to 10 half lifes is not possible

15. Inadequate collateral circulation of the hand

AD patients:

1. History, physical or imaging findings of other neurological illness apart from AD such as cerebrovascular disease, inflammatory or infectious disease and other degenerative diseases or other types of dementia such as fronto-temporal lobe dementia or Lewy body disease.

Healthy volunteers:

1. Clinical significant abnormal physical examination

2. Evidence of any significant psychiatric or neurological illness from history, clinical or para – clinical findings

3. History, physical or imaging findings of any significant neurological illness such as cerebrovascular disease, inflammatory or infectious disease and other neurodegenerative diseases

4. Previous significant occupational exposure to ionizing radiation or in whom, within the last 10 years, radioactive substances or when ionizing radiation was applied for the purposes of research. (According to § 24 Abs. 1 Nr. 6 StrlSchV / §

28b Abs. 1 Nr. 6 RöV)

Addresses

- **Primary Sponsor**

  Universität Leipzig
  Ritterstraße 26
  04109 Leipzig
  Germany

  Telephone: **[---]***
  Fax: **[---]***
  E-mail: **[---]***
  URL: **[---]***

- **Contact for Scientific Queries**

  Universitätsklinikum Leipzig, Klinik und Poliklinik für Nuklearmedizin
  Mr. Martin Wehner
  Liebigstraße 18
  04103 Leipzig
  Germany

  Telephone: **03419718107**
  Fax: **[---]***
  E-mail: **Martin.Wehner at medizin.uni-leipzig.de**
  URL: **http://nuklmed.uniklinikum-leipzig.de/**

- **Contact for Public Queries**

  Universitätsklinikum Leipzig, Klinik und Poliklinik für Nuklearmedizin
  Mr. Martin Wehner
  Liebigstraße 18
  04103 Leipzig
  Germany

  Telephone: **03419718107**
  Fax: **[---]***
  E-mail: **Martin.Wehner at medizin.uni-leipzig.de**
  URL: **http://nuklmed.uniklinikum-leipzig.de/**

Sources of Monetary or Material Support

- **Private sponsorship (foundations, study societies, etc.)**

  Universität Leipzig

Private sponsorship (foundations, study societies, etc.)

Universität Leipzig
04109 Leipzig
Germany

Telephone: **[---]***
Fax: **[---]***
E-mail: **[---]***
URL: **[---]***

- **Institutional budget, no external funding (budget of sponsor/PI)**

Universitätsklinikum Leipzig AöR
04103 Leipzig
Germany

Telephone: **[---]***
Fax: **[---]***
E-mail: **[---]***
URL: **[---]***

Status

- Recruitment Status: **Recruiting complete, follow-up complete**
- Study Closing (LPLV): **2015/11/30**

Trial Publications, Results and other documents

** This entry means the parameter is not applicable or has not been set.*
**** This entry means that data is not displayed due to insufficient data privacy clearing.*