# BRAZILIAN INITIATIVE IN ALZHEIMER'S DISEASE

Multicenter, observational, prospective study in subjective memory impairment, mild cognitive impairment and Alzheimer's disease patients

ADNI-BR

AAIC 2013

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- Meta-analysis of Brazilian studies:

prevalence of dementia – 5.1 to 19% (>65 y)

- 55% due to AD

# Objectives

- To create a common databank among centers
- To determine possible relationships among clinic, imaging, genetics and biomarkers along AD spectrum
- To establish the diagnostic accuracy of NPS tests among different stages of AD and different geographic places in Brazil

# Objectives

- To establish norms for biomarkers in our country
- To determine which biomarkers can predict evolution among different stages of Ad
- To evaluate patients and biomarkers during 48 months
- To identify genetic polymorphisms linked to risk of cognitive impairment and frequency of mutations in APP, PSEN1, PSEN2 in presenile AD familial dementia patients


Ceará
1 centro
Goiás
1 centro
Minas Gerais
1 centro
São Paulo
7 centros
Rio de Janeiro
2 centros
Rio Grande do Sul
1 centro

# Samples

- >18 y
- Normal cognition (n=120)
  - No consistent memory complaints, MMSE ok, FAQ<2, CDR=0 (memory box=0)
- Subjective memory impairment (n= 120)
  - MMSE ok, FAQ<2, CDR=0 (memory box=0), RAVLT ok
- Mild MCI (n=120)
  - RAVLT scores between 1 to 1.5 SD < mean; MMSE ok, CDR0.5 (memory box 0.5), FAQ <4
- Late MCI (n=120)
  - RAVLT scores < 1.5 SD, MMSE ok, CDR0.5 (memory box 0.5), FAQ <4
- AD (n=120)
  - Familial AD (2 generations) (n=50)

- MMSE
- MOCA-Test
- ADAS-Cog
- Clock design
- RAVLT
- Logical memory
- Rey figure (copy and recall)
- TMT A and TMT B
- Digit span
- Verbal fluency (FAS)
- Verbal fluency (animals)
- Naming Test (Boston)
- Vocabulary (WAIS-III)- previous level

Cognitive evaluation

- Functional activities questionnaire (Pfeffer et al., 1982)
- Cognitive Changes Questionnaire (CCQ)

Functional evaluation

# Behavior evaluation

- NPI-Q
- Geriatric depression scale

- Abeta 1-42
- Tau protein
- P-tau protein

Serum and CSF biomarkers

- BDNF
- BACE1
- ADAM10 in platelets

- MRI – 1.5 T and 3T
- DTI
- MRI – resting state
- MRI – Arterial spin label –ASL
- PET-FDG
- PET- flutemetamol

Structural, molecular and functional imaging

- Polymorphisms
  - PICALM, CLU, CR1, ApoE, TREM2
- Familial
  - APP, PSEN1, PSEN2
- Neuropathology

Genetic analysis and neuropathology

# CENTROS

- Faculdade de Medicina da Universidade de São Paulo – Grupo de Neurologia Cognitiva e do Comportamento – GNCC – SP
- Programa Terceira Idade (PROTER) – Departamento e Instituto de Psiquiatria – FMUSP – São Paulo - SP
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- Hospital Geral de Fortaleza Valter Cantídeo – Fortaleza - CE
- Hospital Copa D'or – Rio de Janeiro - RJ
- Universidade Federal de Goiânia - GO

- General Coordination
  - Sonia MD Brucki
- Databank/Statistics
  - Cássio M Bottino
- CSF Biomarkers
  - Orestes Forlenza
- Genetics
  - Íscia Cendes
- Serum biomarkers
  - Paulo Caramelli / Francisco C Vale
- Structural and Functional Neuroimaging
  - Márcio Balthazar/Fernando Cendes
- Molecular Neuroimaging
  - Carlos Buchpiguel
- Pathology
  - Ricardo Nitrini/Lea T Grinberg
- Clinical data
  - Ivan H Okamoto/Márcia FL Chaves