



Research Project Proposal

Academic year 2019-2020

Project Nº 16

Title: *Resting state brain networks in mild cognitive impairment and Alzheimer's disease.*

Department/ Laboratory *Biomedical Imaging Laboratory, Radiology Department, CUN*

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Summary

Amnesic mild cognitive impairment (MCI) is a clinical stage characterized by memory impairment, without significant repercussions in daily life activities, that is considered a high-risk condition for the development of clinically probable Alzheimer's disease (AD). This prodromal phase offers an opportunity for early therapeutic interventions aiming to alter the course of the disease.

Arterial Spin Labeling (ASL) perfusion MRI is a neuroimaging technique that offers the unique possibility of measuring cerebral blood flow (CBF) and functional connectivity using data acquired in a single scan.

The goal of this project is to assess perfusion data acquired in a group of MCI patients to evaluate coherent large-scale brain networks and compare them with those obtained in a group of healthy control subjects, to determine whether functional connectivity of the brain at rest is altered in MCI.

This technique could provide an early biomarker for the diagnosis of MCI.

References:

Badhwar et al., Resting-state network dysfunction in Alzheimer's disease: A systematic review and meta-analysis. Alzheimer's&Dementia 8:73-85 (2017).

yes		Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?
no	x	