Research Project Proposal
Academic year 2021-2022
Máster en Investigación Biomédica

Project Nº 30

Title: Assessment of cerebrovascular reactivity using magnetic resonance imaging

Department/ Laboratory
Biomedical Imaging Laboratory, Radiology, CUN

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Summary:

Cerebrovascular reactivity (CVR), the increase in cerebral blood flow (CBF) induced by a vasoactive agent, is an indicator of cerebrovascular heath, that is impaired in many disease states, including neurodegenerative diseases such as Alzheimer's and Parkinson's disease. CVR can be measured using different imaging methods, such as PET, SPECT and MRI. We have developed a method to measure CVR using an MRI technique and a breath-holding paradigm as vasodilatory challenge [1]. The objectives of this project are to evaluate the reproducibility of this method in healthy volunteers and assess changes in CVR with age. To that end, CVR will be measured twice in a group of young healthy volunteers, that will be scanned in two sessions separated by 1 week and the measurements will be compared with CVR obtained in a group of older adults.

References:

[1] Solis-Barquero et al., Breath-hold induced cerebrovascular reactivity measurements using optimized pseudocontinuous arterial spin labeling. Frontiers in Physiology. 12:621720 (2021)

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