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Serial-position effect as a biomarker in the diferential diagnosis of mild cognitive impairment. A multimodal biomarkers aproach. (P3.1-018)

Ismael Calandri, María Eugenia Martín, Patricio Chrem Méndez, Belén Helou, María Florencia Clarens, Lucía Crivelli, Ricardo Allegri

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Abstract

Objective: To study the serial-position effect in a hippocampal disease as early stages of Alzheimer's disease.

Background: The serial-position effect, present in the learning of lists of words, is divided in primacy (PE) and a recency effect (RE), which consists of better recall of first and last elements respectively. Its study has provided insight into the memory system functioning.

Design/Methods: Observational study with 168 subjects. Classified according to cognitive performance into mild amnestic cognitive impairment (aMCI) and cognitively normal (NC) and classified by their Alzheimer biomarkers profile (NCBk– = 31, NCBk + = 21, aMCIBk- =45 and aMCIBk + = 71). All subjects were studied with MRI, and voxel-based morphometry was performed to evaluate hippocampal volume. The Rey Auditory Verbal Learning Test (RAVLT) performance and serial position effect on learning and delayed memory were registered.

Results: aMCI showed deficit in total learning and delayed recall compared with controls; the was no difference between biomarker profiles. In the first trial, the PE between CNBk– was significantly higher (p=0.03) compared with aMCIBk– and aMCIBk+. In total delayed recall there were non-significant differences between aMCI groups, but RE of delayed recall, showed a significantly better performance of aMCIBk– against aMCIBk+(p=0.028).

RE in Trial6 and delayed recall correlated with T-tau levels (r2= –0.39, p= 0.01 and r2= –0.26 p= 0.027, respectively). Levels of Ab42, hippocampal volume and cortical thickness of the parahippocampal regions did not correlate with any of the effects.

Conclusions: These results show that serial-position effect in the delayed recall is a measure superior to the conventional test scores for the detection of positive biomarkers in aMCI. This effect correlates with the increase in Tau-T in CSF but not with hippocampal volume. This finding suggests serial position effect could be a biomarker of neurodegeneration earlier than MRI.

Disclosure: Dr. Calandri has nothing to disclose. Dr. Martin has nothing to disclose. Dr. Chrem Méndez has nothing to disclose. Dr. Helou has nothing to disclose. Dr. Clarens has nothing to disclose. Dr. Crivelli has nothing to disclose. Dr. Allegri has nothing to disclose.

Disputes & Debates: Rapid online correspondence

No comments have been published for this article.

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