EVALUATION OF THE DIAGNOSTIC ACCURACY OF THREE MEMORY TESTS FOR EARLY ALZHEIMER'S DISEASE (PE-2013-02356465): A PRELIMINARY REPORT

M Brambilla[1], D Bottoni[2], L Maggiore[1], I Cova[1], F Alemanno[2], R Logie[3], S Iannaccone[2], S Cappa[4], L Pantoni[1,5] , MA Parra[6], S Della Sala[3], S Pomati[1].

[1]ASST Fatebenefratelli Ospedale Luigi Sacco - Centre for the treatment and study of cognitive disorders - L. Sacco Hospital – Milano
[2]Department of Clinical Neuroscience, Specialistic Neurorehabilitation of Neurological, Cognitive and Motor Disorders - San Raffaele Scientific Institute - Milano
[3]Human Cognitive Neuroscience, Psychology - University of Edinburgh – Edinburgh
[4]IRCCS - S. Giovanni di Dio Fatebenefratelli – Brescia
[5]'L. Sacco' Department of Biomedical and Clinical Sciences, University of Milan
[6]School of Social Sciences, Psychology - Heriot-Watt University - Edinburgh

INTRODUCTION

The main aim of this multicentric project is to investigate the specificity and sensitivity of three memory tests (Free And Cued Selective Reminding Test (FCSRT; Frasson, 2011), Short Term Memory Binding Test (STMBT; Parra, 2009), Delayed Match To Sample 48 (DMS48; Barbeau, 2004) proposed as cognitive markers for Alzheimer's disease (AD). **The study is funded by the Italian Ministry of Health under registration number PE-2013-02356465** and involves Luigi Sacco Hospital as coordinator Center, San Raffaele Scientific Institute and the University of Edinburgh.
The aim of this report is to identify for each test which scores better disentangle performances between patients and older controls according to previous literature and our preliminary data.

METHODS

Data collected on 20 patients with AD and 20 healthy older adults (HO) were analyzed. All participants underwent the three experimental tests along with a standard neuropsychological evaluation including a verbal associative memory test in one single session. For each tests we calculated the following scores:
• FCSRT : % of accuracy of immediate free (IFR) and cued recall score (ITR) and a delayed [30 minutes] free (DFR) and cued recall score (DTR) according to standard procedures
• DMS48 : % of accuracy of immediate and delayed [1 hour] recognition tasks
• STMBT : % of accuracy of the shape only (S) and shape-color binding (B) conditions for each number of items presented (2 or 3)
• Paired-associate learning (PAL): total easy (E) and difficult (D) items recalled.
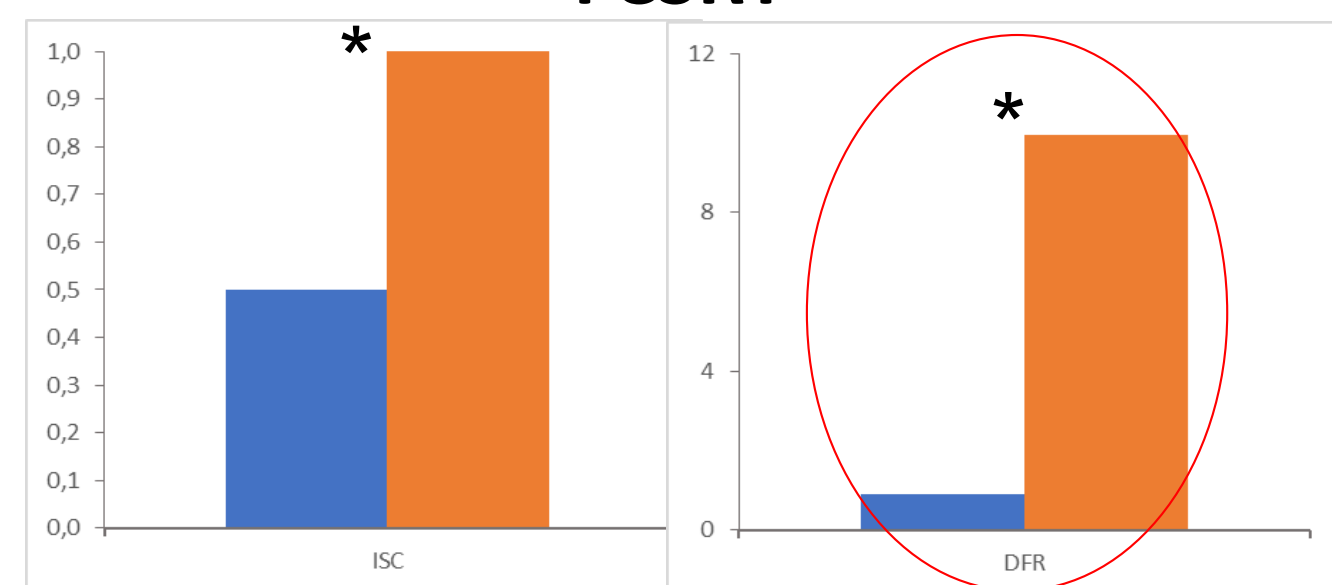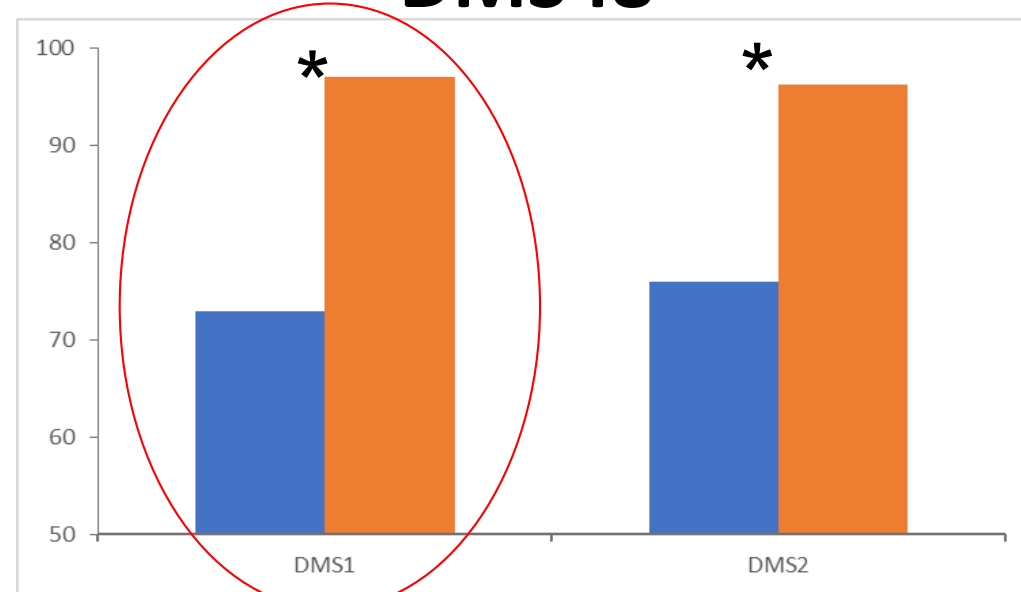

RESULTS

*: p<0.05
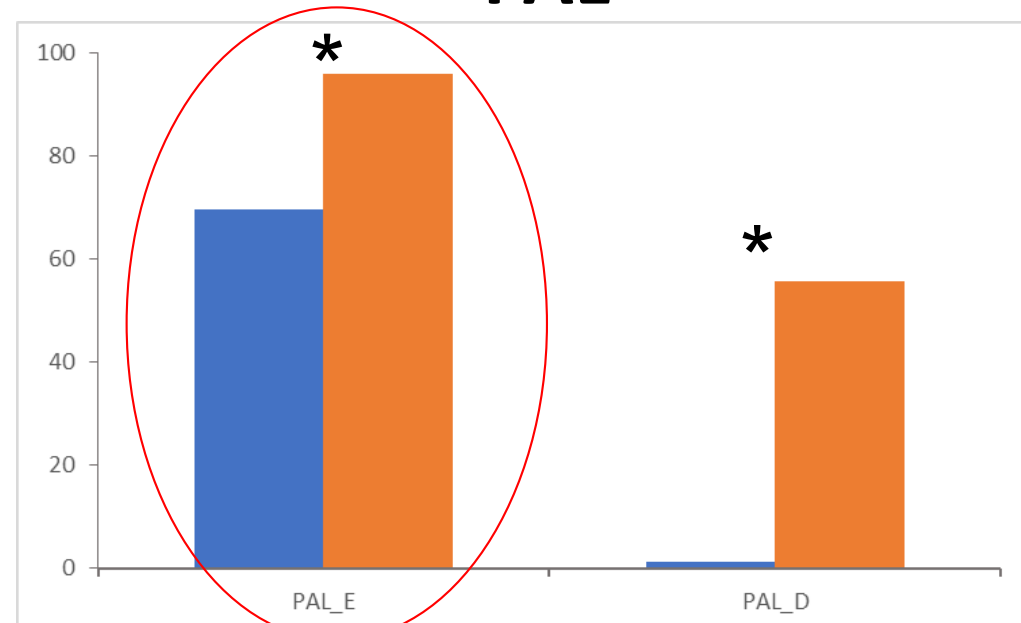
PAL
total accuracy of easy items is a better index than total accuracy of difficult items → no floor effects observed in AD
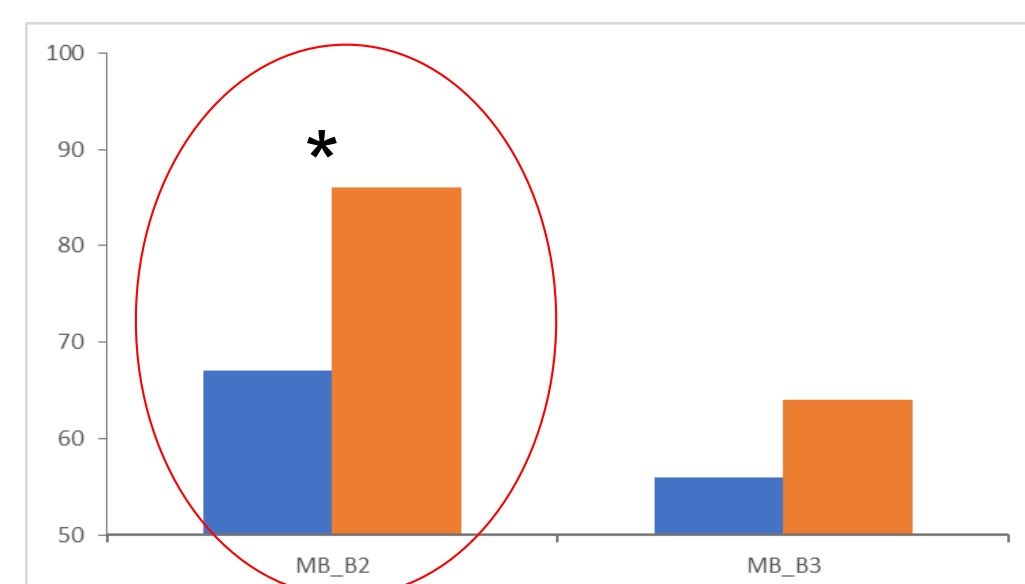
FCSRT
DFR is a better index than ISC → not a composite score and better differentiates between AD and HO

DMS48
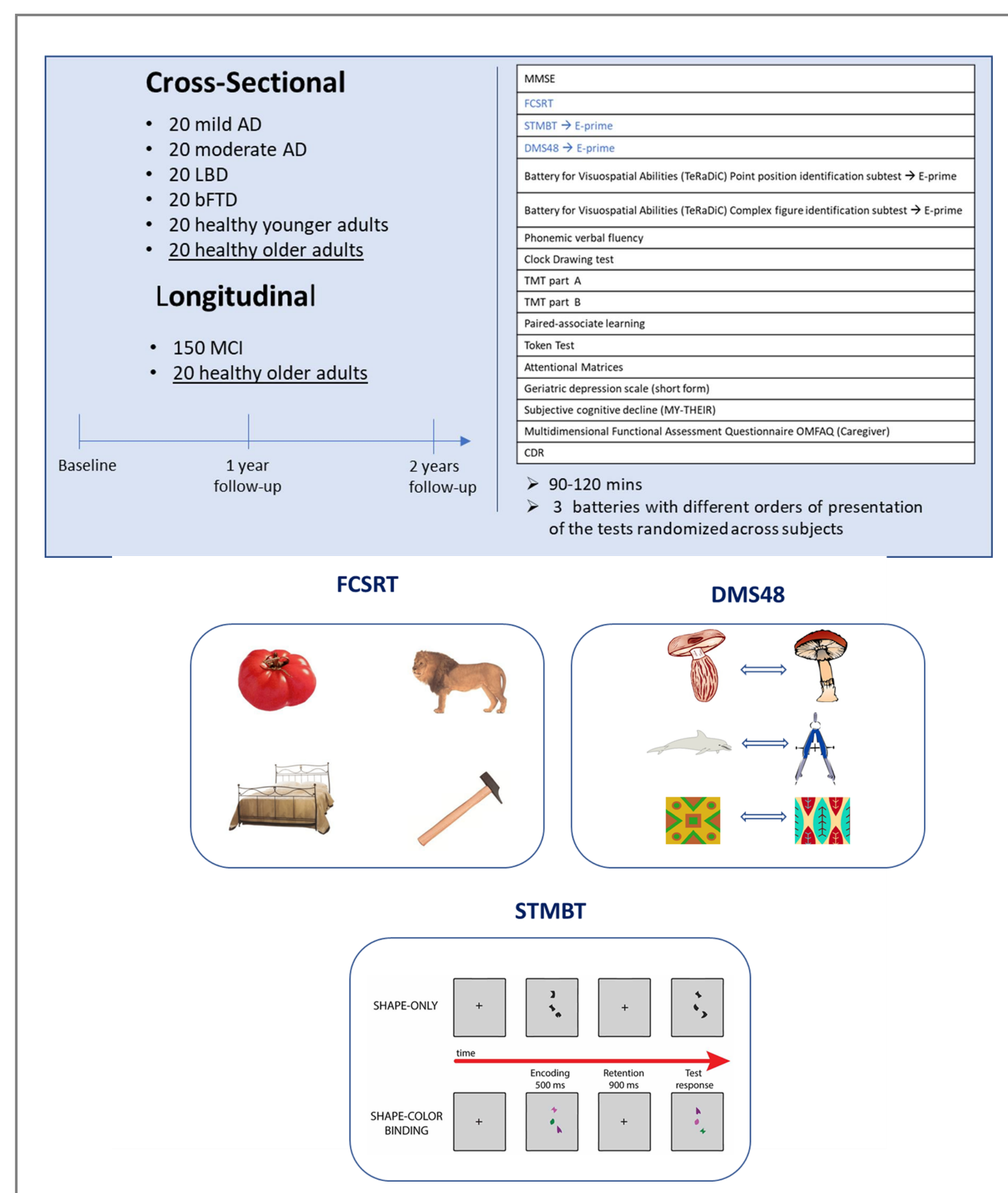DMS2 is as good as DMS1 → no need for an additional delayed test

STMBT
total accuracy of binding with 2 items is a better index than total accuracy of binding with 3 items → better differentiates between AD and HO

Demographic characteristics of the sample

Group	N	Age	Education (years)	Gender (% female)
AD	20	78.4 (5.0)	8.8 (4.5)	65
HO	20	71.3 (5.1)	10.4 (4.5)	50

CONCLUSION

The present study reports for the first time a comparison across controls and AD on three memory tests proposed as cognitive markers for AD.

Our preliminary data, in line with previous literature, are encouraging in confirming that the outcomes selected for each test may offer an aid to diagnosis of early AD, but a larger sample and longitudinal data are needed to address the main research question of this planned study.

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