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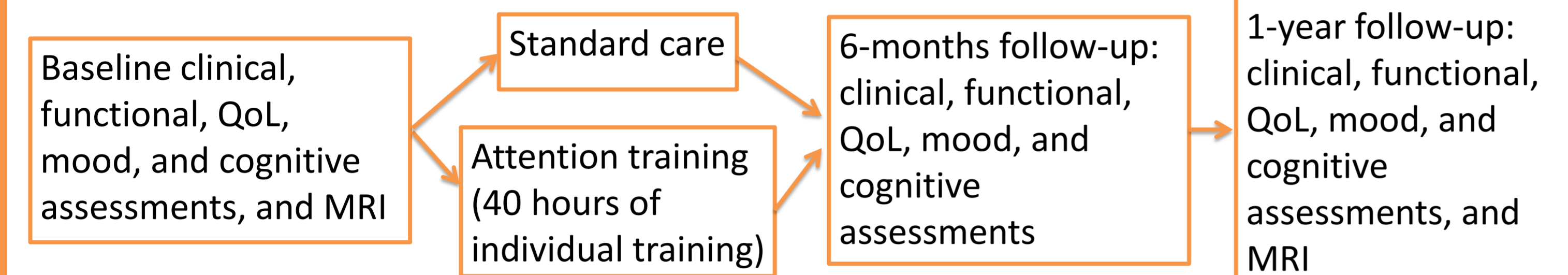
PI: Leonardo Pantoni - Bando Ricerca Finalizzata 2010, Ministero della Salute & Regione Toscana - ClinicalTrials.gov: NCT02033850

OBJECTIVES

- 1) Investigate the effectiveness of the APT-II program on the rehabilitation of attention in patients with MCI with SVD
- 2) Investigate the effect of the possible cognitive improvement in real life, in terms of functionality in daily activities and quality of life
- 3) Investigate the possible impact of the attention training on brain activity evaluated with resting state functional MRI (rsfMRI)

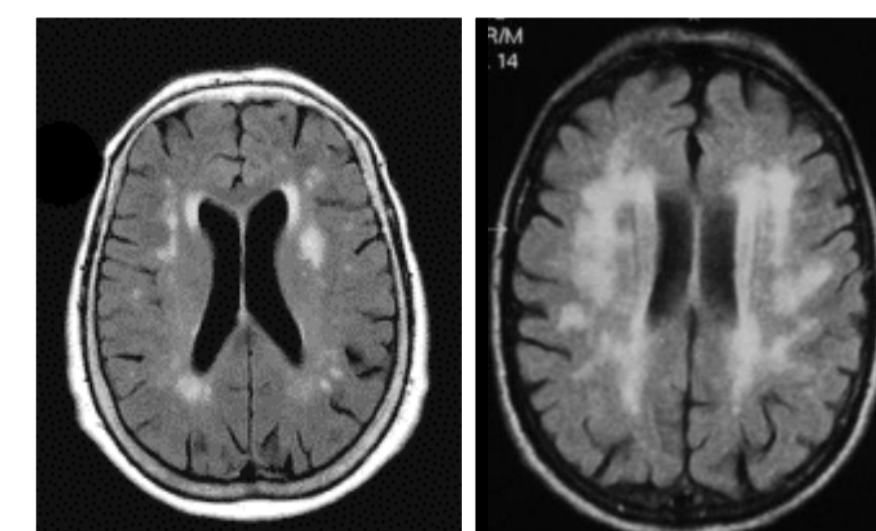
MATERIALS AND METHODS

The RehAtt study is a 3-year prospective, single-blinded, randomized clinical trial.



Inclusion Criteria

- MCI defined according to Winblad et al. criteria
- Evidence of impairment across attention cognitive tests
- Evidence on MRI of moderate to severe white matter hyperintensities.



[Scala visiva di Fazekas modificata (Pantoni et al. Neuroepidemiology 2005)]

Primary outcomes

Improvement of functionality in activities of daily living and quality of life

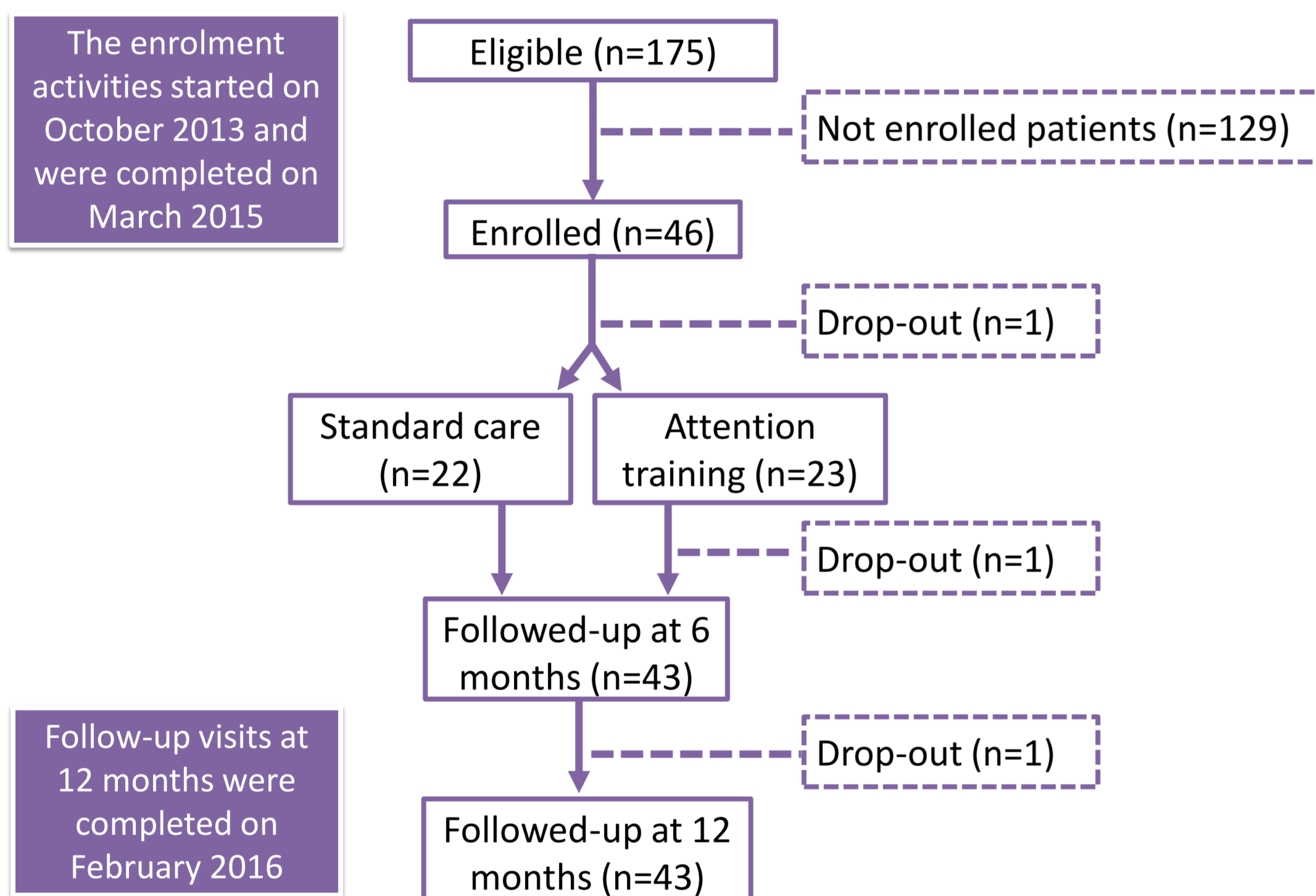
- Activities of Daily Living scale (ADL): preserved items.
- Instrumental Activities of Daily Living scale (IADL): impaired items.
- Disability Assessment in Dementia scale: total score in percentage.
- Short Form Health Survey (SF-36): Physical and Mental summary scores.
- EuroQol: single summary index and visual analogue scale.
- Attention Questionnaire: total score.
- Geriatric Depression Scale: total score.

Secondary outcomes

- Improvement in cognitive performance in any of 14 scores deriving from the 11 neuropsychological tests included in the VMCI-Tuscany battery.
- Reduction of the risk of transition to dementia according to DSM-IV criteria.
- Improvement in long-term brain activity as measured by means of regional homogeneity (ReHo) of rsfMRI data.

RESULTS

Flow diagram showing patients' attrition



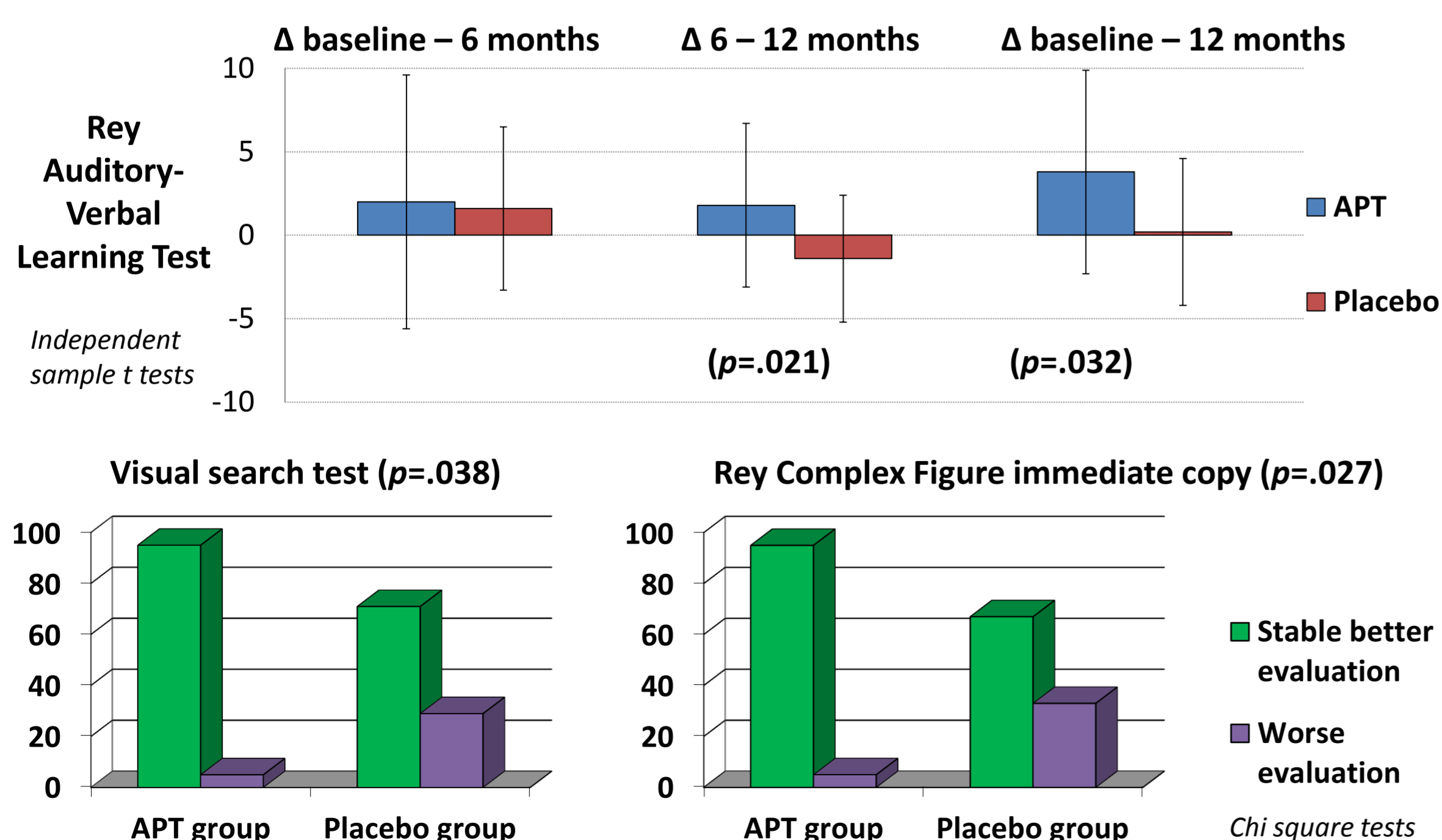
Total sample characteristics at baseline

	Score range	Total sample N=43
Age, years (mean±SD)	-	75.1±6.8
Years of education	-	8.2±4.3
Sex (% males)	-	65% (n=28)
MMSE	0-30	26.4±3
MoCA	0-30	19.2±4.6
ADL (preserved items)	0-6	5.9±0.4
IADL (impaired items)	0-8	2.1±2.2
Disability Assessment in Dementia	0-100	88±15.5
Physical summary score (SF-36)	0-100	44.3±8.2
Mental summary score (SF-36)	0-100	42.4±9.1
Attention Questionnaire	0-36	15.5±9.9
EuroQol (summary index)	-1/+1	0.7±0.3
EuroQol (visual scale)	0-100	65.2±17.8
Geriatric Depression Scale	0-15	4.8±3.8

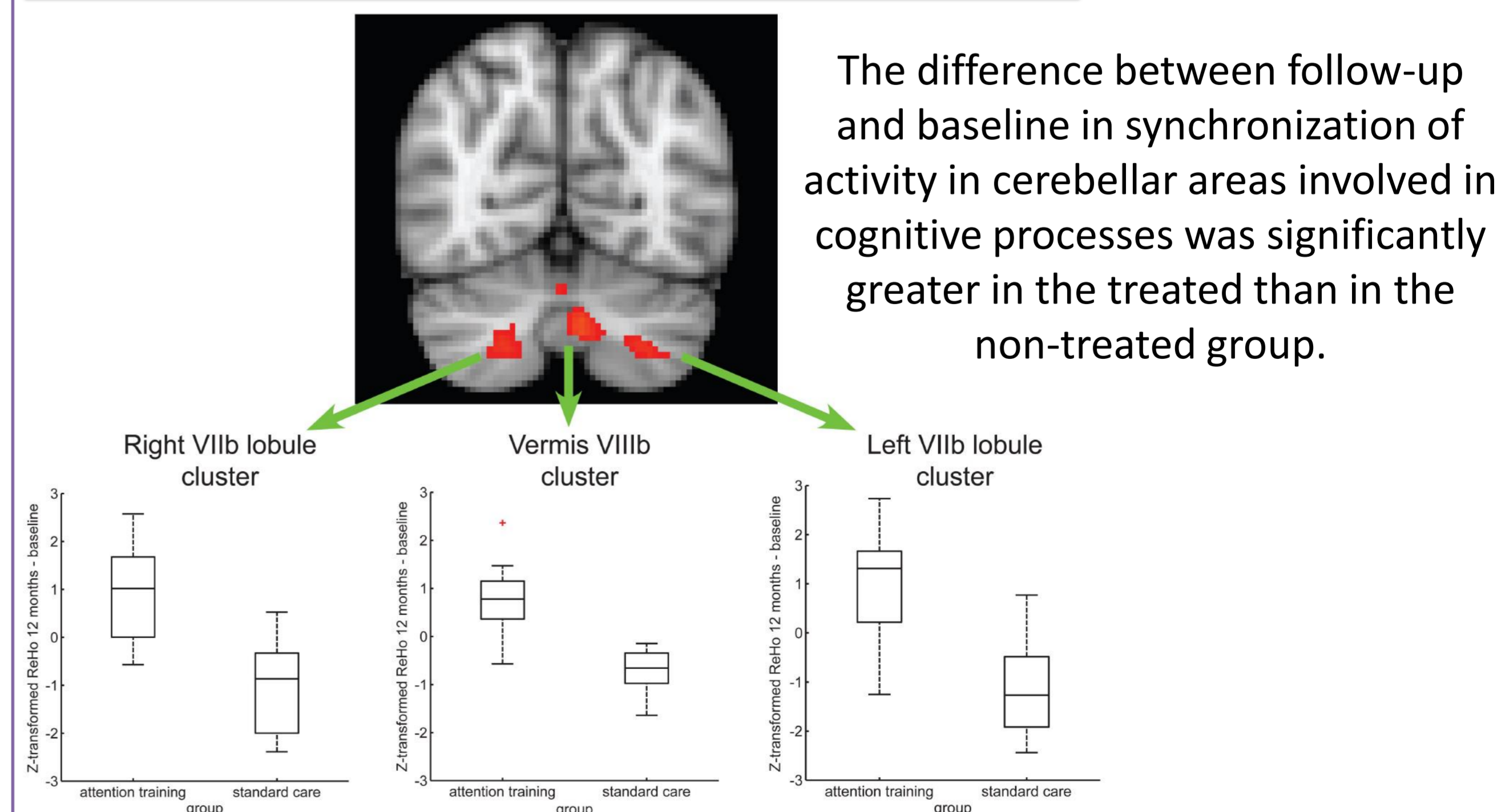
Comparisons between treated and non-treated groups showed that there were not statistically significant differences in baseline demographics, and global cognitive and functional status

No change was seen in the primary outcomes (functional status and quality of life) between treated and non-treated patients.

Secondary cognitive end-points



Secondary resting state functional MRI end-points



DISCUSSION

Treatment of MCI patients with SVD with APT-II program does not produce significant effects in quality of life or functional status. APT-II however seems to produce some improvement in focused attention and working memory, as well as an increased activity in brain circuits involved in cognitive processes.