

Forgetting Rates as markers for Alzheimer's Dementia in Amnestic Mild Cognitive Impairment converters and non converters

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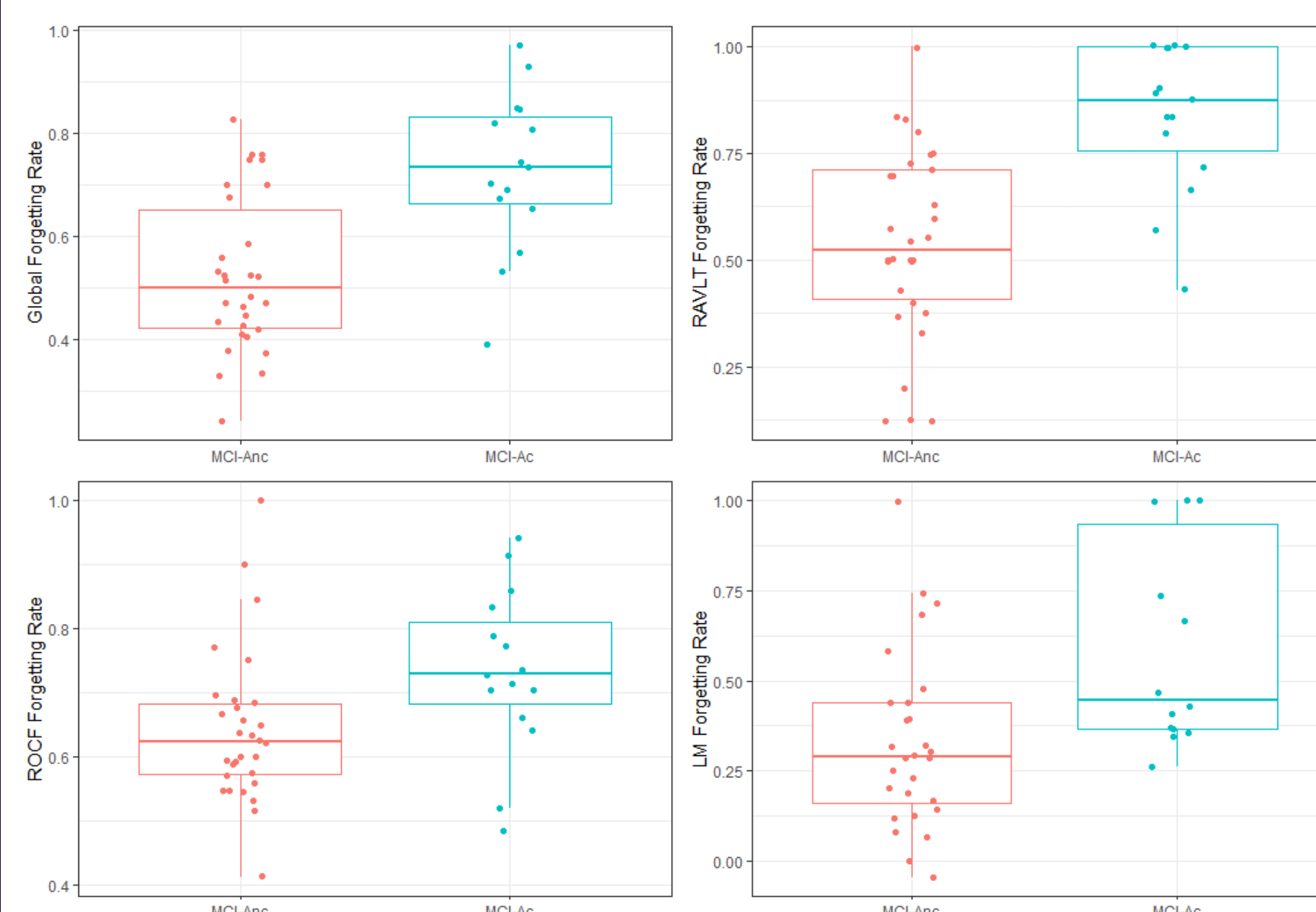
Our aim is to compare the effectiveness of Forgetting Rates (FRs) of several measures of episodic memory in participants with amnestic mild cognitive impairment who converted to probable Alzheimer's disease dementia (MCI-Ac) and who did not convert (MCI-Anc).

- Forgetting rates (FRs) can differentiate Amnestic MCI converting to probable AD dementia from Amnestic MCI not converting to dementia
- Might be a useful complementary measure to z-scores in clinical practice. However, larger and more balanced sample sizes are needed to confirm these findings

METHODS

- 15 MCI-Ac and 30 MCI-Anc.
- FRs were calculated as the proportion of information lost between the best trial for Rey Auditory Verbal Learning Test (RAVLT), immediate recall for Logical Memory (LM) and copy of Rey-Osterrieth Complex Figure (ROCF), and their delayed recall (dr).
- A global FR was calculated as a mean of the three measures combined.
- Demographic data included ACE III, IFS, age, education years, follow-up years, BDI-II, FAQ.

The MCI-Ac group showed a significantly higher Global FR, RAVLT-FR, LM-FR, and ROCF-FR, with large to moderate effect sizes (Global FR: $p = 0.0007$, $d = -1.32$; RAVLT-FR: $p = 0.0003$, $r = -0.48$; LM-FR: $p = 0.0012$, $r = -0.36$; ROCF-FR: $p = 0.009$, $r = -0.33$).



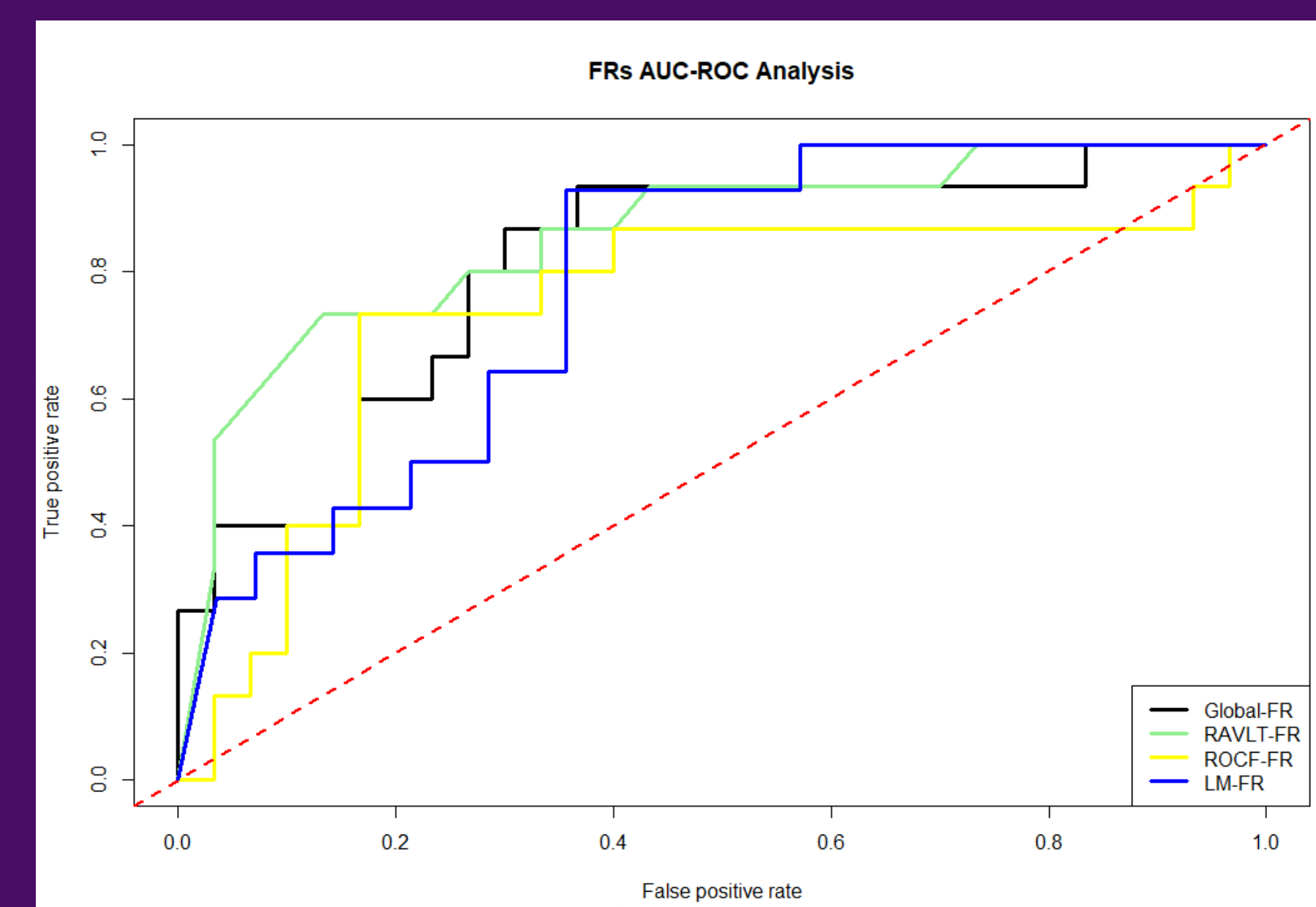
RESULTS

Global FR (AUC = 0.81; optimal cutoff = 0.244; clinical threshold = 56.3%; sensitivity = 0.86; specificity = 0.70)

RAVLT-FR (AUC = 0.85; optimal cutoff = 0.465; clinical threshold = 77.5%; sensitivity = 0.73; specificity = 0.87)

LM-FR (AUC = 0.78; optimal cutoff = 0.256; clinical threshold = 61.2%; sensitivity = 0.93; specificity = 0.64),

ROCF-FR (AUC = 0.74; optimal cutoff = 0.361; clinical threshold = 70.3%; sensitivity = 0.83; specificity = 0.64)

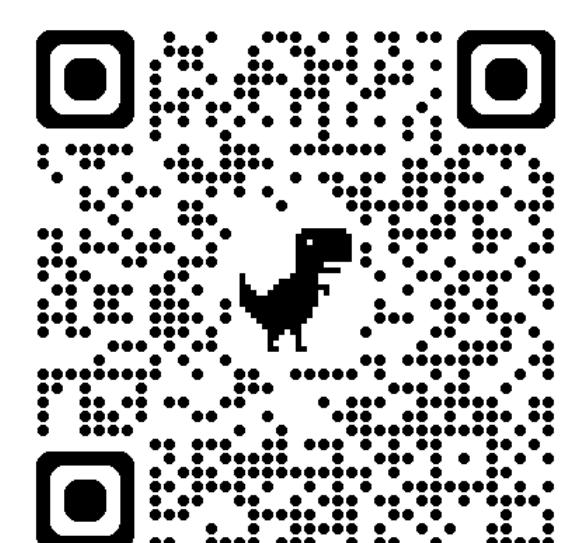


CONCLUSIONS

Overall, Forgetting Rates may represent an effective cognitive marker for detecting differences between MCI-Ac and MCI-Anc to probable Alzheimer's Dementia. However, larger sample sizes are required to confirm these findings.

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