

Neuropsychiatric symptoms and large-scale network dysfunction in early Alzheimer's Disease

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MBI in prodromal AD is associated with amygdala-centered hyperconnectivity and hippocampal-centered hypoconnectivity, suggesting an imbalance between salience/attention and memory-control networks.

INTRODUCTION

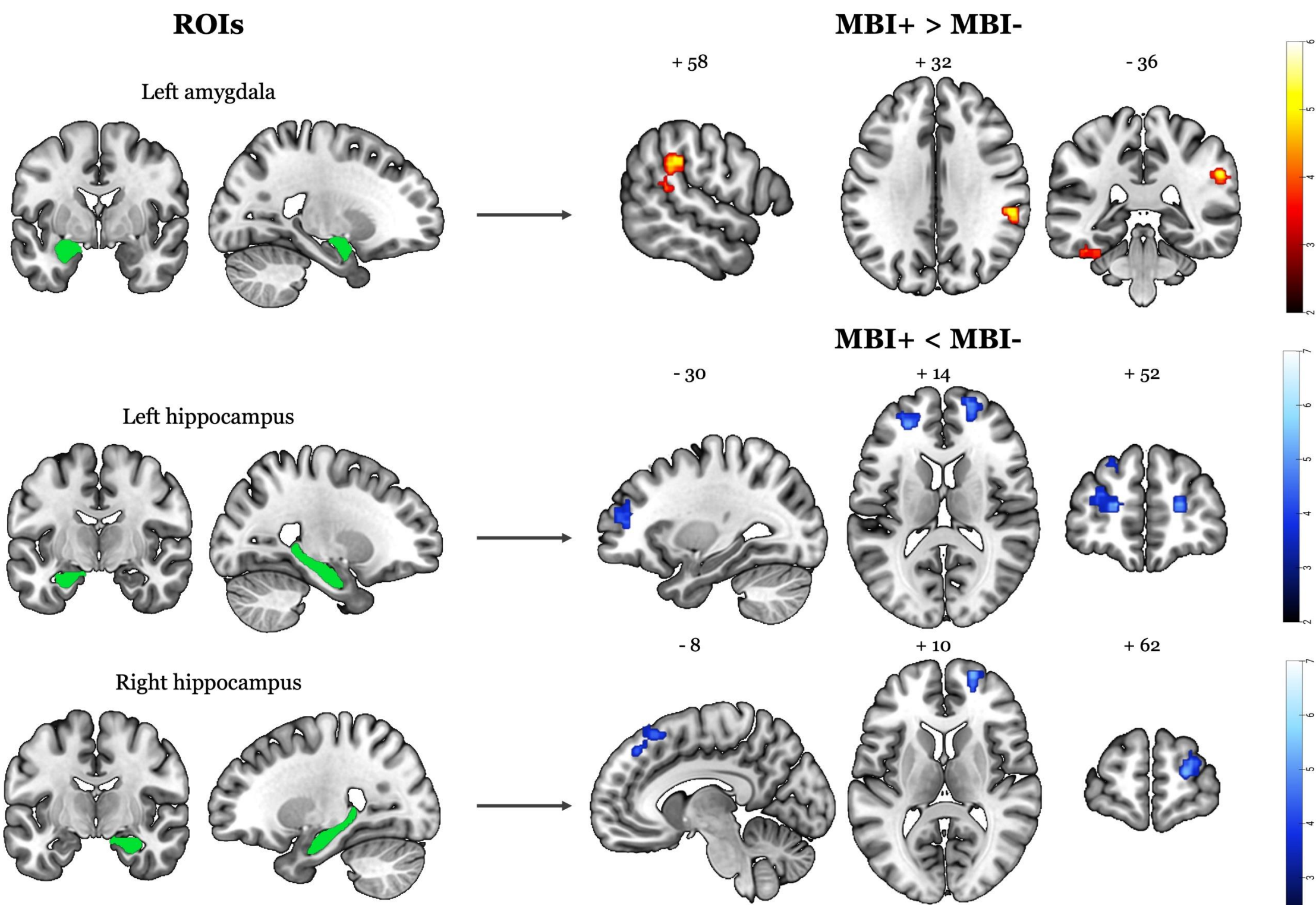
Mild Behavioral Impairment (MBI) is an early behavioral marker in Alzheimer's disease (AD) continuum and may reflect medial temporal-large-scale network dysfunction lobe dysfunction. *Question: do amygdala- and hippocampus-centered networks show distinct connectivity signatures in MCI due to AD with MBI?*

METHODS

Design: retrospective biomarker-confirmed MCI due to AD
Groups: MBI+ vs MBI- defined according to ISTAART criteria
Imaging: 3T resting-state fMRI seed-based connectivity
Seeds: bilateral amygdalae and hippocampi

RESULTS

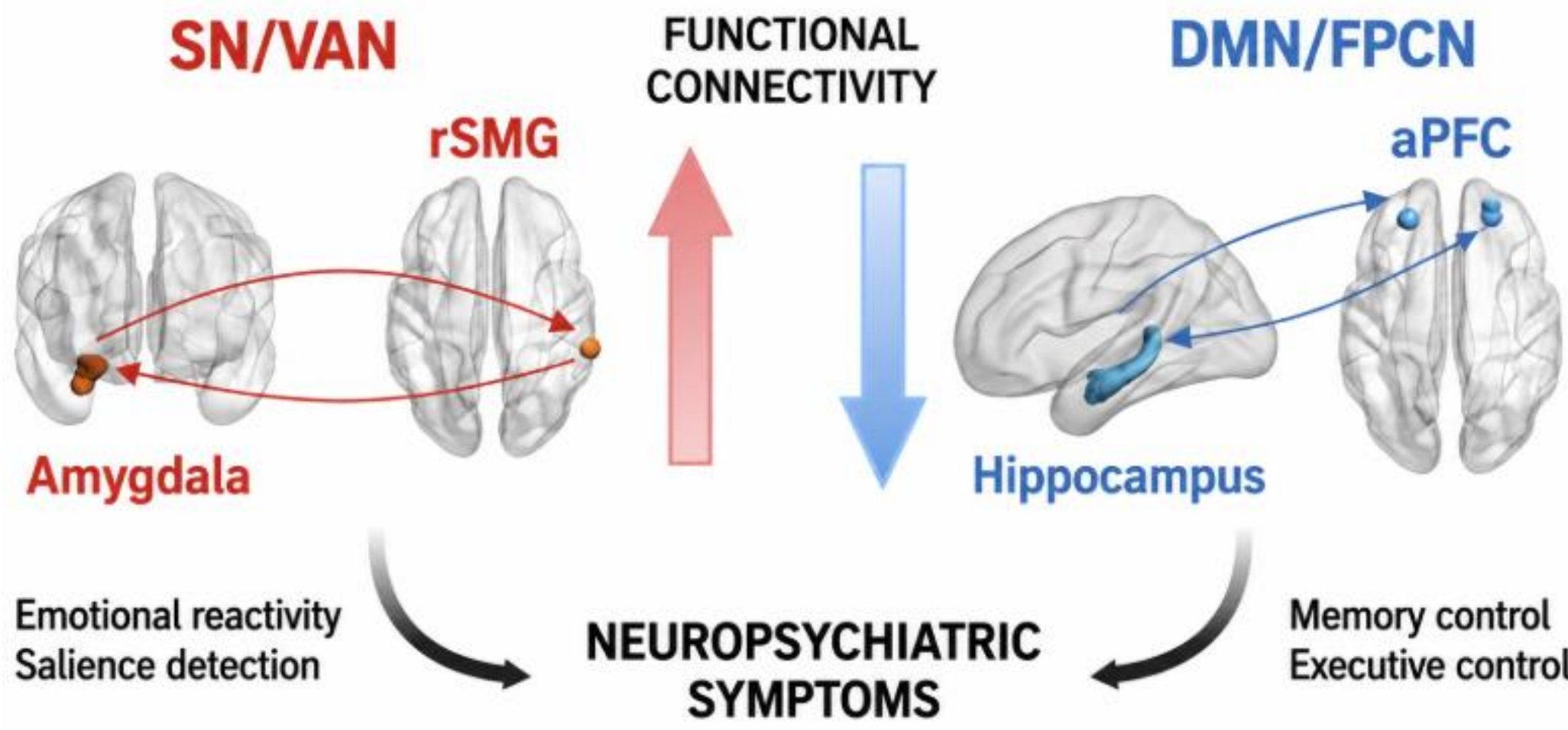
Amygdala: MBI+ group showed significantly greater functional connectivity between the left amygdala and right supramarginal gyrus.
Hippocampus: lower functional connectivity between bilateral hippocampi and the middle and superior frontal gyri in MBI+ compared to MBI- patients



CONCLUSION

Network imbalance hypothesis

Amygdala-driven salience/attention upregulation may coexist with reduced hippocampal–frontal memory-control connectivity



In biomarker-confirmed MCI due to AD, MBI marks a dissociation between limbic–attentional hyperconnectivity and memory-control hypoconnectivity.

REFERENCES
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	Whole group (n = 29)	MBI+ (n = 17)	MBI- (n = 12)	Group Comparison
Age (years)	67.4 (±6.7)	68.2 (± 6.8)	66.2 (± 6.8)	p = 0.4
Gender F:M	13:16	8:9	5:7	p = 0.8
MMSE	26.9 (± 1.7)	26.8 (± 1.8)	27 (± 1.6)	p = 0.8
Education	11.4 (± 4)	11.7 (± 4.3)	11 (± 3.5)	p = 0.7

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