

Introduction

Mild Cognitive Impairment (MCI) is a transitional state between cognitive ageing and dementia. It is a heterogeneous syndrome with two distinct subgroups:

- Amnestic MCI (aMCI): Memory-predominant impairment typically progressing to Alzheimer's disease.
- Non-amnestic MCI (nMCI): Non-memory domain deficits with variable outcomes typically non-Alzheimer's disease including Lewy body, vascular, frontotemporal dementias.

Neuropsychiatric symptoms are common in MCI (up to 85% prevalence) and may reflect emerging neurodegenerative disease. However, limited Australian data exists characterising neuropsychiatric symptom profiles in memory clinic cohorts.

Do neuropsychiatric symptom profiles differ between MCI subgroups or predict underlying neuropathology?

Aim

1. Describe the demographic, clinical, and neuropsychiatric features of patients with MCI in an Australian memory clinic.
2. Compare the prevalence and distribution of neuropsychiatric symptoms between aMCI and nMCI subgroups.
3. Characterise dementia progression rates and outcomes by MCI subgroup.
4. Explore whether specific neuropsychiatric symptom profiles predict conversion to dementia or reflect underlying neuropathology.

Methods

Design: Descriptive single centre cohort study

Setting: Cognitive Dementia & Memory Clinic, Royal Melbourne Hospital

Sample: Consecutive patients diagnosed with MCI at clinic presentation between 2016 and 2019 assessed by a multidisciplinary team using the neuropsychiatric inventory

Follow up: ~12 months (median 1.08 years), no loss to follow up

Outcomes: Clinicodemographic characteristics, neuropsychiatric symptom prevalence, dementia incidence rate, diagnosis at follow up

Results

Neuropsychiatric Symptom Prevalence

90% (98/109) of MCI patients experienced at least one neuropsychiatric symptom

nMCI symptom profile:

- Depression: 61% (vs 38% aMCI)
- Hallucination: 16% (vs 0% aMCI)
- Apathy: 22% (vs 9% aMCI)

Table 1: Demographic, disability and comorbidity for MCI, aMCI and nMCI.

Characteristic	aMCI (n=58)	nMCI (n=51)	All MCI (n=109)
Age, median (IQR)	81 (75–86)	79 (74–82)	80 (75–85)
Female, n (%)	28 (48%)	29 (57%)	57 (53%)
Overseas born, n (%)	39 (67%)	35 (68%)	74 (68%)
MMSE, median (IQR)	24 (19–27)	24 (18–26)	24 (19–26)
Disability assessment for dementia, median (IQR)	35 (28–38)	29 (22–36)	33 (26–37)
Charlson Comorbidity Index, median (IQR)	5 (4–6)	5 (4–7)	5 (4–6)

Outcomes at follow up

- Median follow-up 1.08 years (IQR 0.6–1.7)
- 55/109 (49%) of MCI progressed to dementia; incidence 43/100PY
 - 30/58 (51%) of aMCI progressed; 43/100PY
 - 23/51 (45%) of nMCI progressed; 44/100PY
- aMCI → Predominantly Alzheimer's (35%)
- nMCI → Alzheimer's 20%, Mixed 7%, Vascular 8%, Lewy body 2%

Diagnosis at follow up	aMCI (n=58)	nMCI (n=51)	All MCI (n=109)
Alzheimer's dementia (%)	20 (35%)	10 (20%)	30 (28%)
Vascular dementia (%)	0	4 (8%)	4 (3%)
Mixed dementia (%)	7 (12%)	7 (14%)	14 (13%)
Lewy body dementia (%)	1 (2%)	1 (2%)	2 (2%)
Frontotemporal dementia (%)	1 (2%)	1 (2%)	2 (2%)
MCI (%)	28 (48%)	28 (54%)	56 (51%)

Table 3: Diagnoses at follow up for MCI, aMCI and nMCI.

Neuropsychiatric Symptom	aMCI (n=58)	nMCI (n=51)	All MCI (n=109)
Delusions (%)	11 (19%)	12 (23%)	23 (21%)
Hallucinations (%)	0	8 (16%)	8 (7%)
Agitation (%)	10 (17%)	12 (24%)	22 (20%)
Apathy (%)	5 (9%)	11 (22%)	16 (14%)
Depression (%)	22 (38%)	31 (61%)	53 (49%)
Anxiety (%)	32 (55%)	27 (52%)	59 (54%)
Disinhibition (%)	1 (2%)	4 (8%)	5 (5%)
Lability (%)	22 (38%)	20 (39%)	42 (39%)
Any symptom	49 (84%)	49 (96%)	98 (90%)

Table 2: Neuropsychiatric symptom profiles for MCI, aMCI and nMCI. Values expressed as frequencies with percentages.

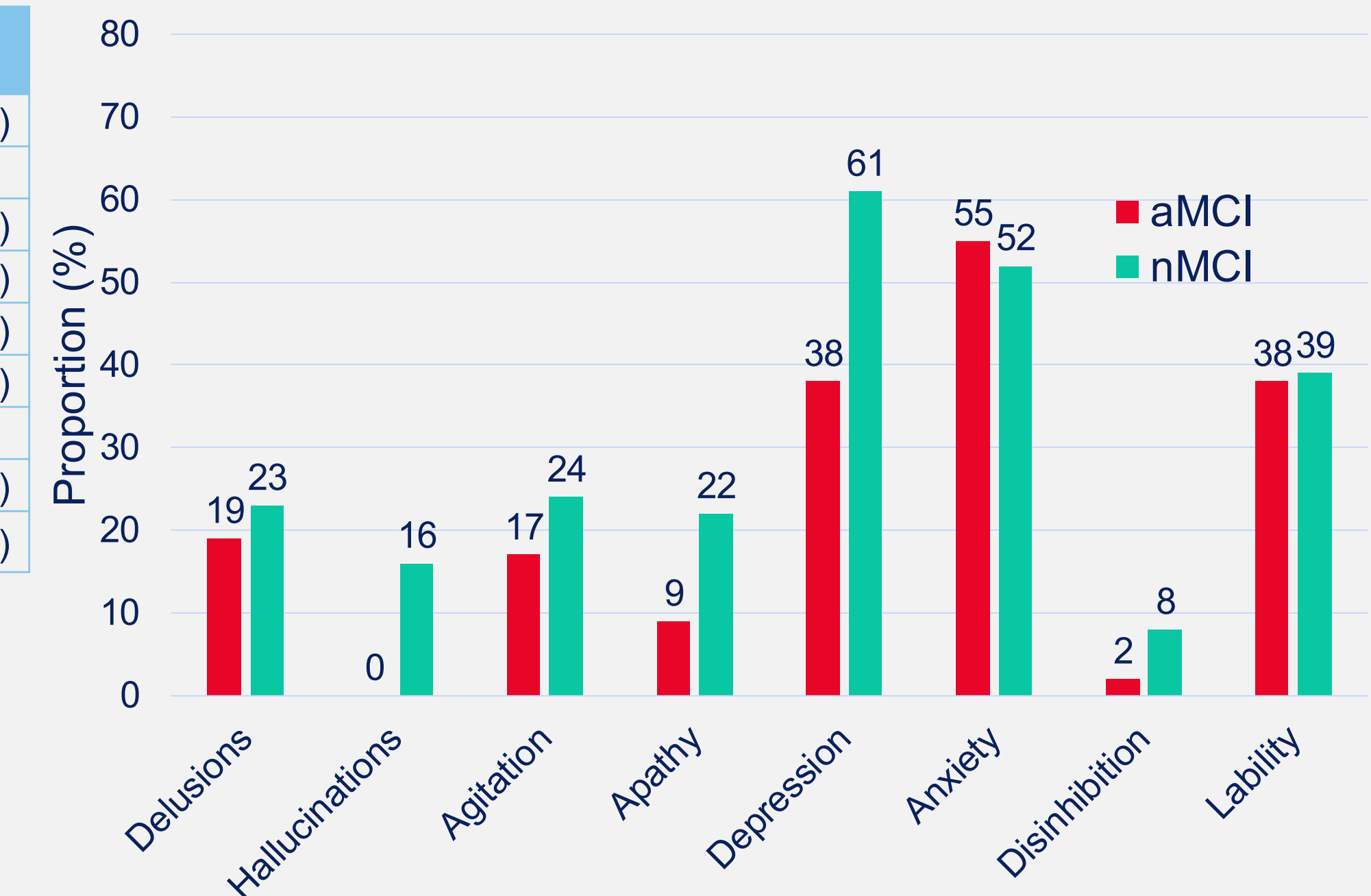


Figure 1: Neuropsychiatric symptom profile for aMCI and nMCI subgroups.

Conclusion

Baseline characteristics are similar between subgroups.

Neuropsychiatric symptoms are prevalent in patients with MCI.

Hallucinations, apathy and depressive symptoms are neuropsychiatric features more prevalent in the nMCI group.

High rates of progression to dementia in both aMCI and nMCI groups compared with community rates.

No individual neuropsychiatric domain was more prevalent in MCI progressing to dementia.

Lewy body dementia neuropsychiatric phenotype (hallucinations, apathy and depression) overrepresented in nMCI subgroup despite few Lewy body dementia outcomes from this group.

Potential underdiagnosis of Lewy body dementia given prevalence of compatible neuropsychiatric symptoms at MCI stage.

Acknowledgements & Contact details

This study was approved by the Royal Melbourne Hospital Human Research Ethics Committee (QA 2022.046).

The authors received no financial support for the research, authorship and publication of this work and declare no potential conflicts of interest.

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