

Commonly used medications and risk of MCI and dementia in a large cohort of older adults

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- In a large observational dataset, 11 supplements, 5 cardiovascular disease drugs, and ibuprofen were associated with decreased risk of conversion to MCI/dementia.
- Escitalopram and oxybutynin were associated with increased risk of MCI/dementia. Antidepressant use (any, SSRI, SNRI) was also associated with increased risk.
- With future validation, these findings may inform MCI/dementia prevention efforts.

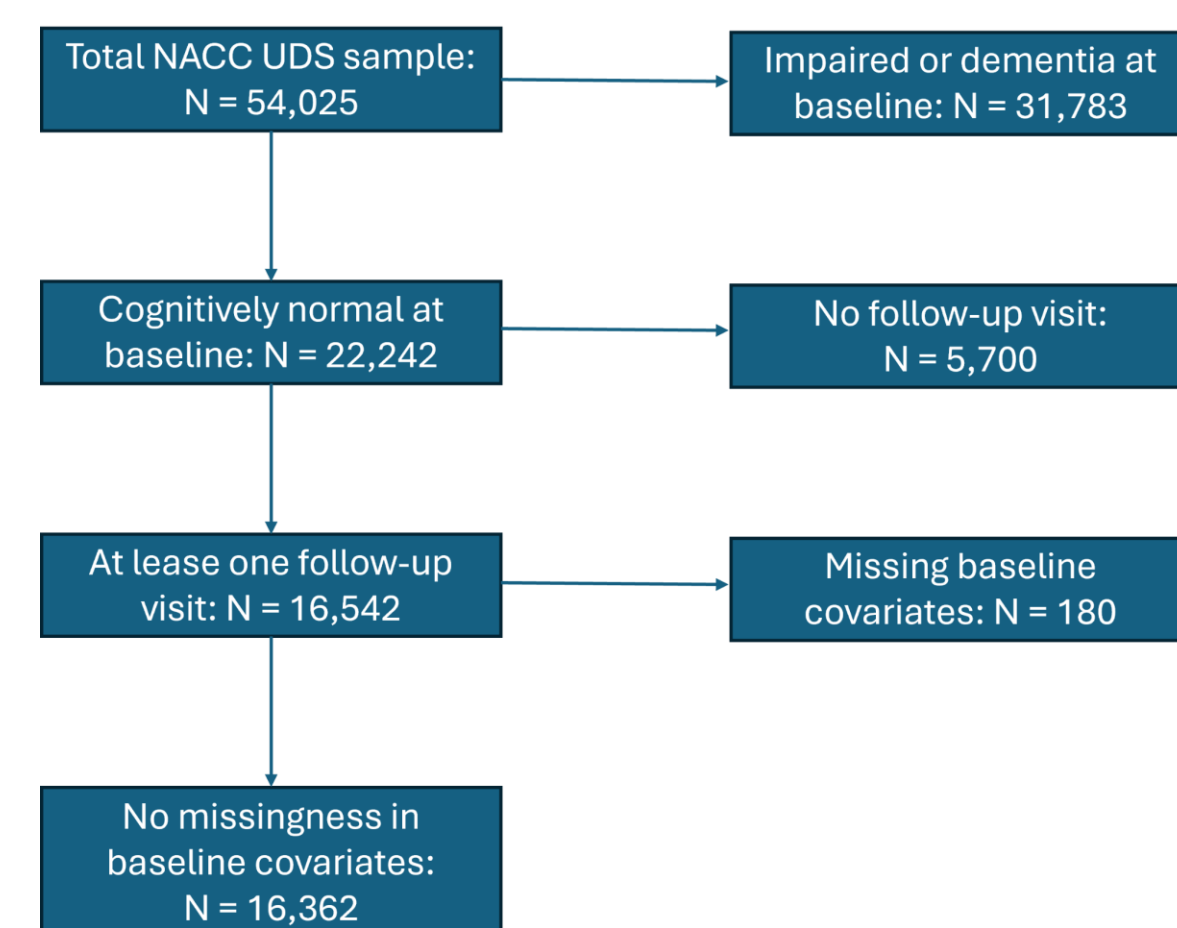
INTRODUCTION

- Polypharmacy is common in older adults and it is unclear if/how this impacts cognitive decline.
- We conducted an exploratory study in a large (N=16,632) longitudinal (average of 5.4 annual visits) cohort (National Alzheimer's Coordinating Center) of cognitively normal older adults.
- We considered 103 commonly used medications.
- Medication use presents a potentially modifiable risk factor for MCI/dementia.

Variable	Entire Cohort (n=16,362)	Convert (n=3,863)	Never convert (n=12,499)
Age	70.15 (10.45)	74.52 (9.14)	68.80 (10.46)
Years of Education	15.97 (2.88)	15.71 (3.03)	16.05 (2.82)
CDR-SB	0.10 (0.35)	0.19 (0.49)	0.08 (0.28)
Total NPI-Q	0.79 (1.83)	1.04 (2.18)	0.71 (1.70)
Sex			
F	10678 (65.3%)	2376 (61.5%)	8302 (66.4%)
M	5684 (34.7%)	1487 (38.5%)	4197 (33.6%)
Race			
White	13083 (80.0%)	3160 (81.8%)	9923 (79.4%)
Black	2570 (15.7%)	572 (14.8%)	1998 (16.0%)
AIAN	128 (0.8%)	19 (0.5%)	109 (0.9%)
NHPI	15 (0.1%)	1 (0.0%)	14 (0.1%)
Asian	443 (2.7%)	87 (2.3%)	356 (2.8%)
Other	123 (0.8%)	24 (0.6%)	99 (0.8%)

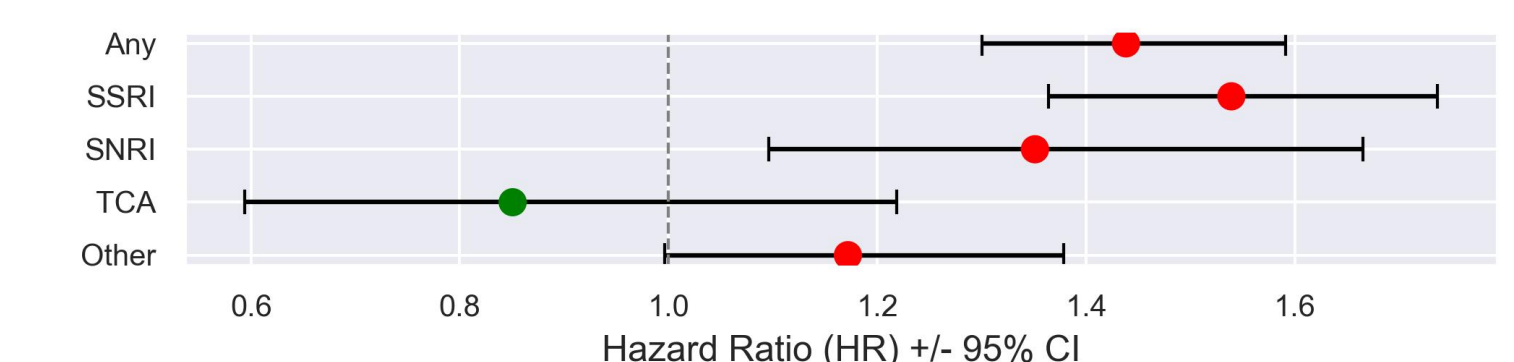
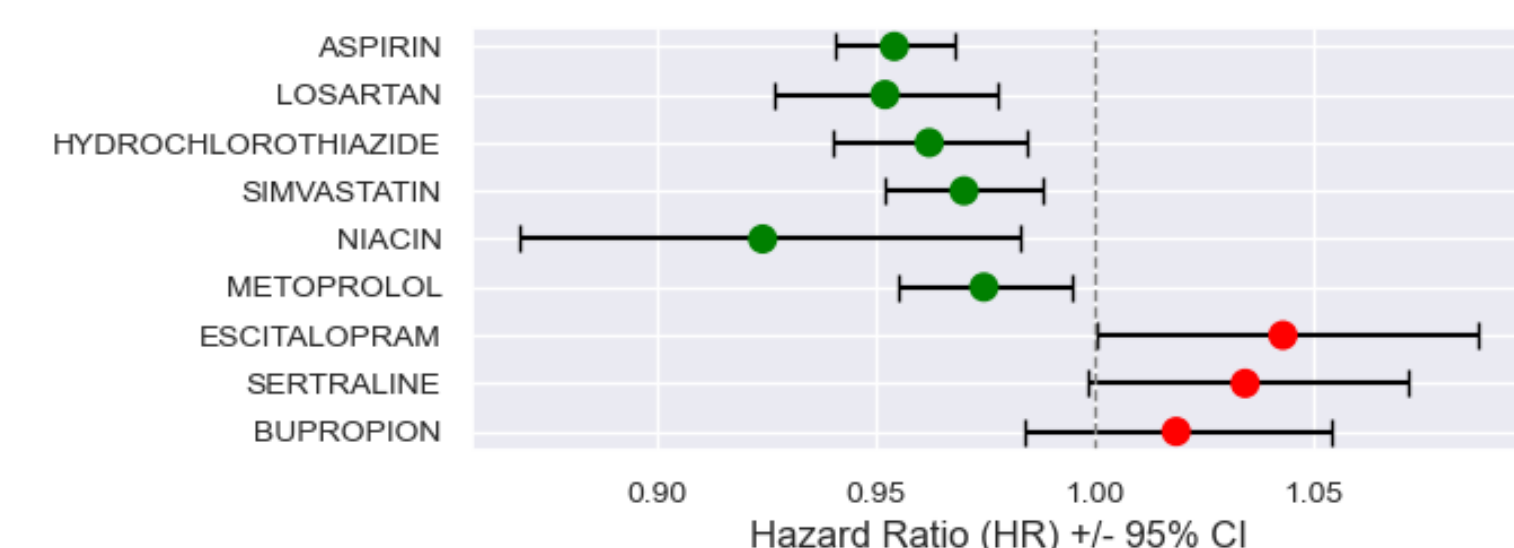
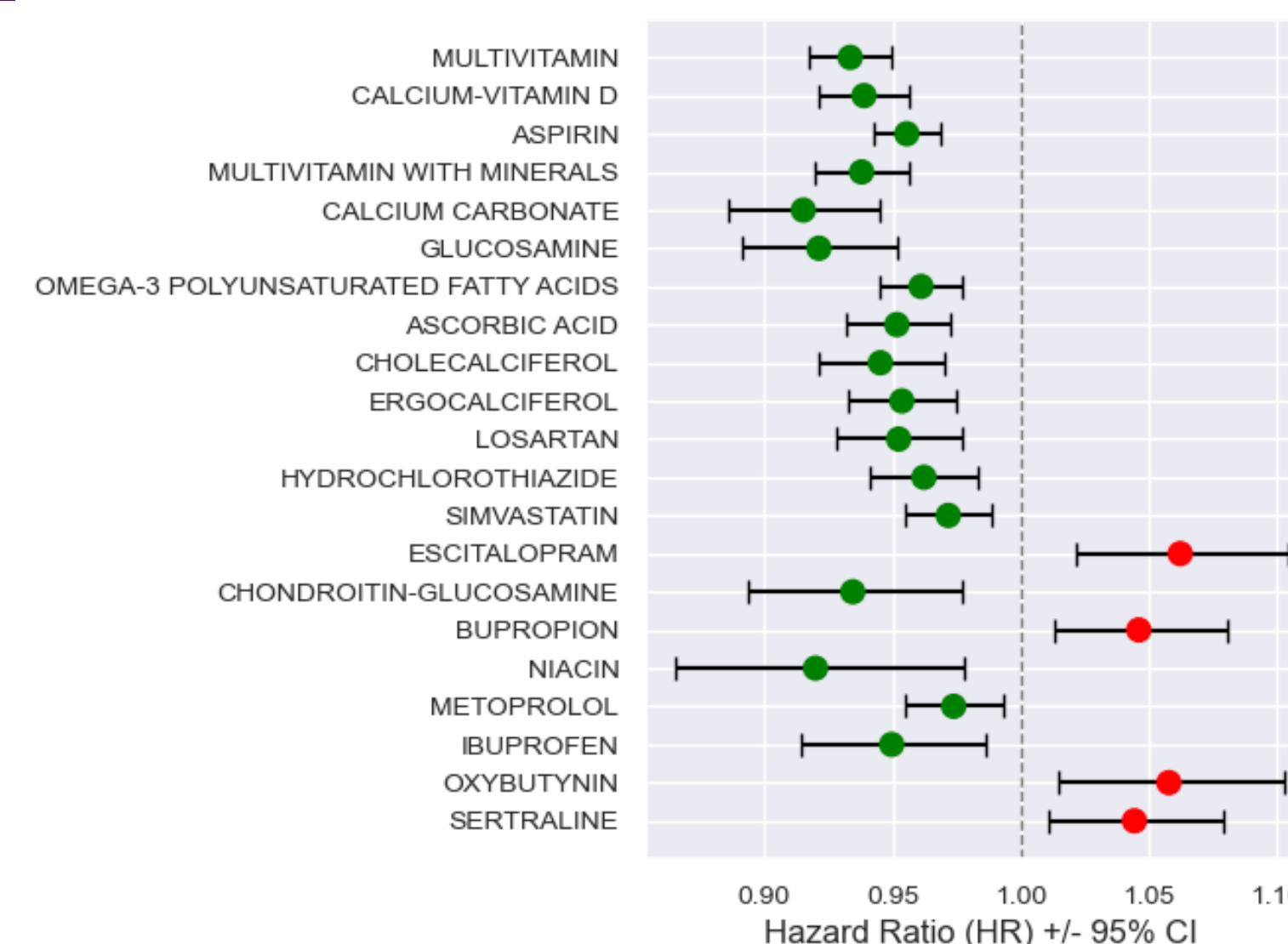
METHODS

- Cox time-varying regression with adjustment for measured demographic/clinical confounders.
- Estimated associations between medication use and hazard of conversion to MCI/dementia.
- Further analyses (focused on antidepressant use) employed inverse probability (IP) weighting to adjust for time-varying confounding from GDS, NPIQ, and anticholinergic burden.



Right, from top to bottom: initial results, with further adjustments, and IP-weighted antidepressant analyses.

RESULTS



CONCLUSIONS

- 11 supplements, 5 cardiovascular disease medications, and the NSAID ibuprofen were associated with reduced risk after adjustment.
- The bladder relaxant oxybutynin and the SSRI escitalopram were associated with increased risk after adjustment.
- In IP-weighted antidepressant analyses, any use, SSRI use, and SNRI use were all associated with increased risk.
- Our findings strengthen the body of work around known associations (B vitamins, cholesterol medications, anticholinergic drugs) while also adding context in areas where the literature is more conflicting (calcium supplements, NSAIDs, antidepressants).
- Our analysis employed a large cohort with rich follow-up data, while appropriately accounting for time-varying confounding.
- Replication of these results in additional cohorts (and in RCTs where possible) is necessary to determine to what extent residual and unmeasured confounding are factors.
- Medications identified here may, upon further study, inform dementia prevention efforts.

REFERENCES

References will be listed in forthcoming publications.

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