

Plasma p-tau217 prevalence: preliminary results of a meta-analysis

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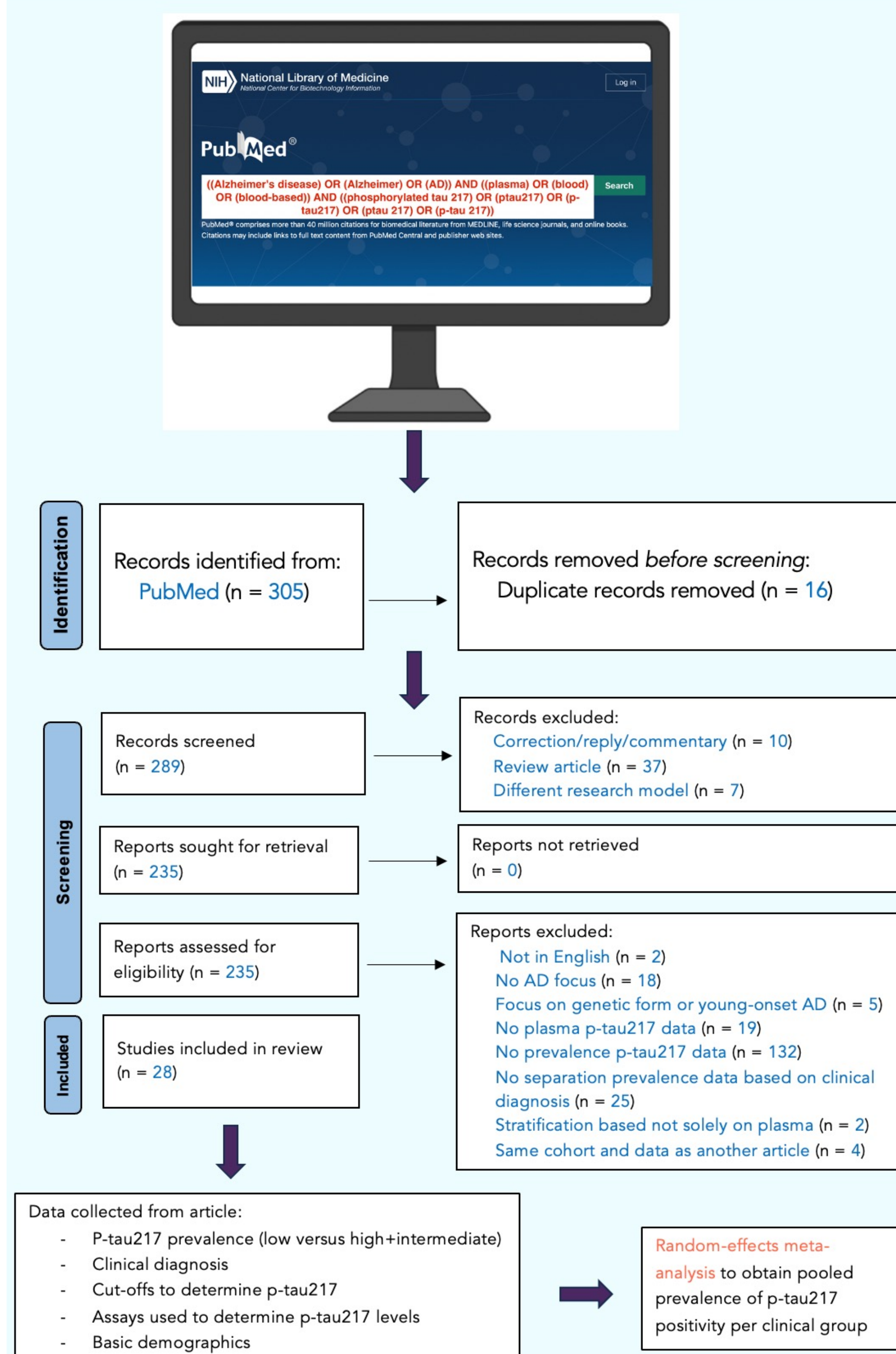


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Background

- Plasma p-tau217 has high accuracy in identifying the presence of amyloid- β (A β) pathology^{1,2}
- Insight into the prevalence of plasma p-tau217 positivity is important for developing reliable and accurate protocols for using plasma p-tau217 as a diagnostic tool, in clinical trials, and for therapeutic purposes.
- However, great heterogeneity is seen in the prevalence of plasma p-tau217 positivity within clinical diagnostic groups, due to differences in diagnostic criteria, assays used and chosen cut-offs.
- The aim of the meta-analysis is to establish an estimate of plasma p-tau217 positivity in different groups along the AD continuum and investigate the influence of basic demographics, such as age, sex, and education, apolipoprotein E (APOE) ϵ 4 carrier status, and cognition.

Material & methods



Results

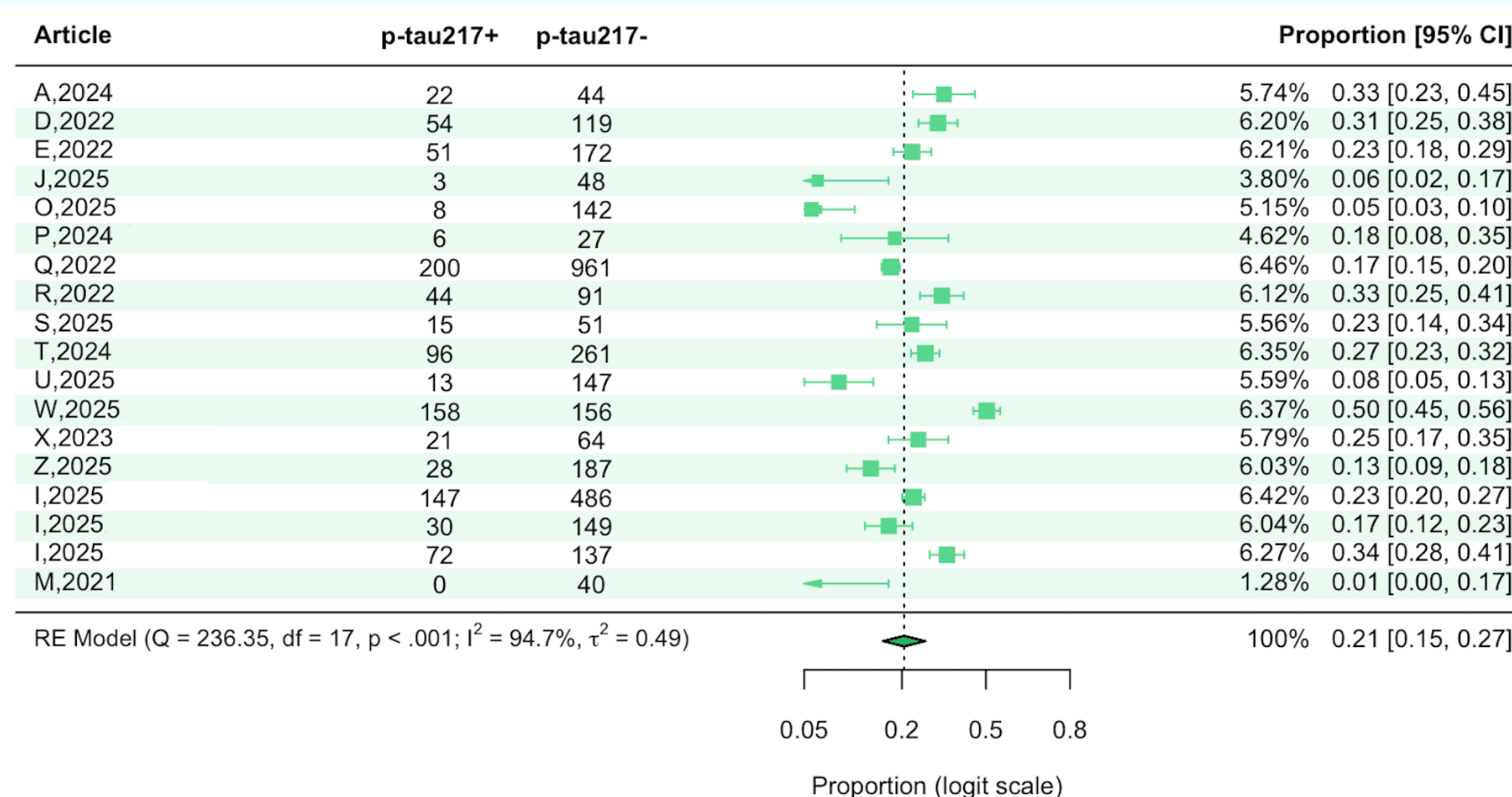


Figure 1: Forest plot for the cognitively unimpaired group

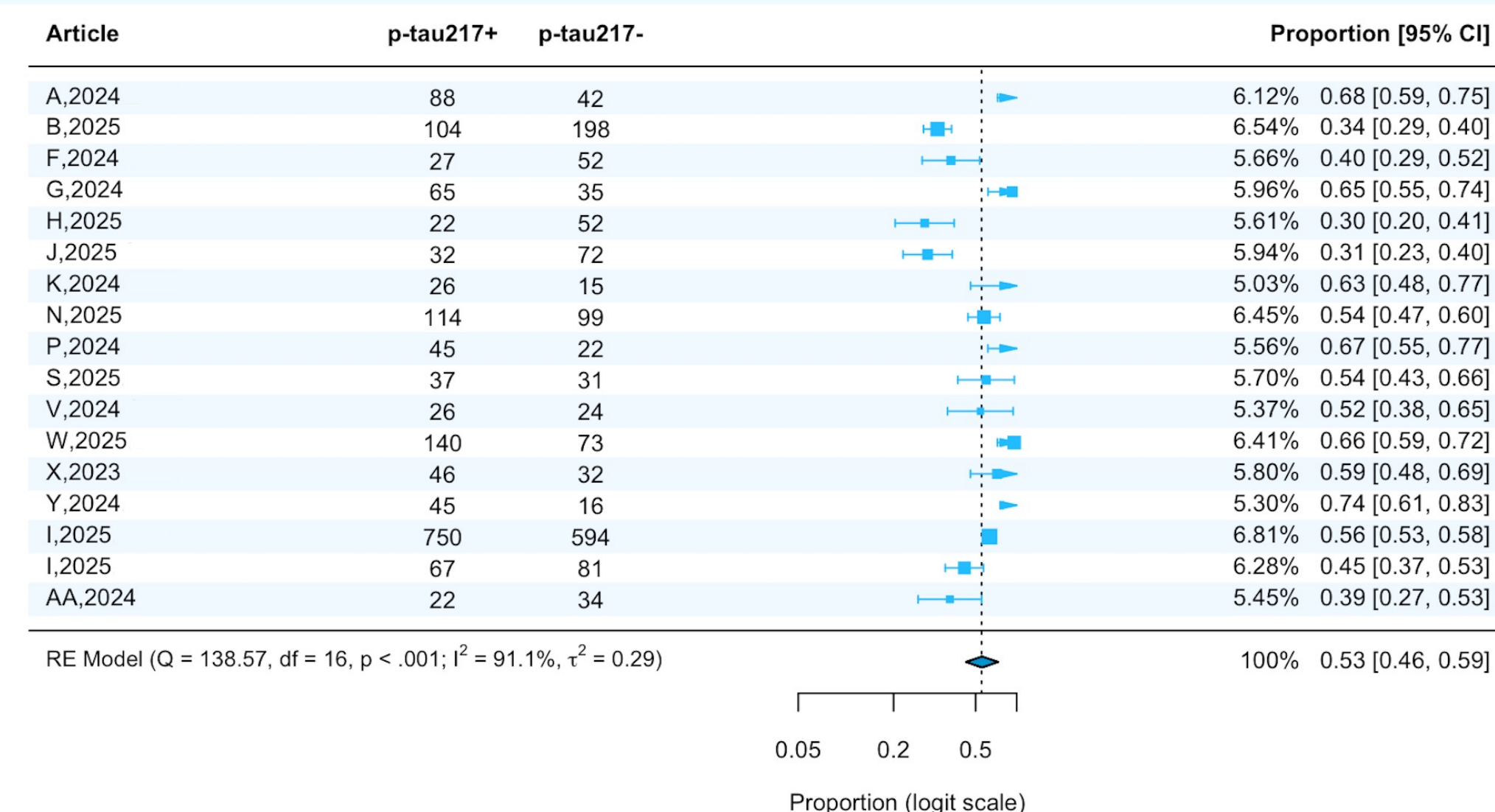


Figure 2: Forest plot for the mild cognitively impairment group

- 305 articles identified by search
 - 28 articles with prevalence data
 - 9,339 persons (mean age 70.5 years, 57.4% female)
 - 3 different types of assays:
 - Lumipulse
 - Simoa
 - Meso Scale Discovery
- Prevalence in cognitively unimpaired persons is 21%
 - 95% CI: 15%–27%, N_{articles} = 18, I² = 94.7%; figure 1
- Prevalence in mild cognitive impairment persons is 53%
 - 95% CI: 46%–59%, N_{articles} = 17, I² = 91.1%; figure 2
- Prevalence in dementia persons is 83%
 - 95% CI: 77%–87%, N_{articles} = 17, I² = 83.5%; figure 3

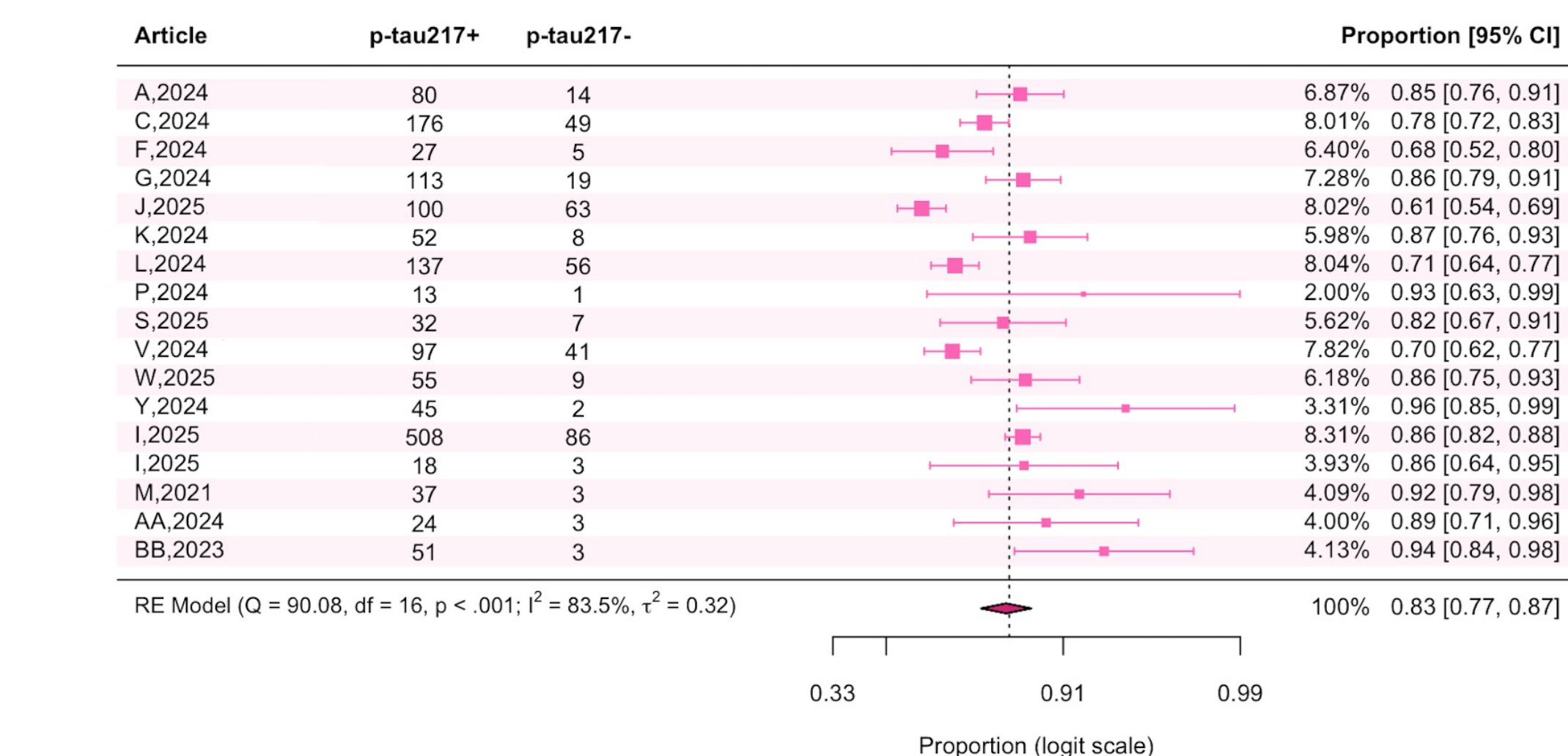


Figure 3: Forest plot for the dementia group

Conclusion

These preliminary results show that the prevalence of plasma p-tau217 positivity differs per clinical group and these are comparable to previously established PET- and CSF-based estimates of amyloid positivity.

The high I² indicates great heterogeneity. Further analyses and meta-regression will provide more insight into the source of this heterogeneity, which will aid in the development of tools for identifying early AD. This in turn will facilitate timely interventions.

References

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