

Efficacy and Safety of Cognitive Enhancers for Mild Cognitive Impairment: A Systematic Review and Meta-analysis

Highlights and Implications

- A systematic review and meta-analysis of 8 randomized controlled trials and 3 companion reports.
- No improvements in cognition, function or mortality were identified among patients who used cognitive enhancers.
- Numerous harms (nausea, diarrhea, vomiting, headaches) were associated with taking cognitive enhancers.
- Careful consideration needs to be made when determining whether to cover these agents for patients with MCI, given lack of evidence of effectiveness and risk

Reference: Tricco AC, Soobiah C, Berliner S, et al. Efficacy and safety of cognitive enhancers for patients with mild cognitive impairment: a systematic review and meta-analysis. *CMAJ*. 2013;185:1393-1401.

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What is the current situation?

Mild cognitive impairment (MCI) is characterized by memory and cognitive deficits, and increases with age. Between 3% and 17% of MCI cases progress to dementia, a serious public health burden with over 4.6 million new cases a year. Cognitive enhancers, used to treat dementia, are a possible strategy to prevent the progression of MCI, but their efficacy in MCI patients is unclear.

What is the objective?

This study examines the efficacy and safety of cognitive enhancers for patients with MCI.

How was the review conducted?

- A systematic review and meta-analysis was conducted; two independent reviewers completed the screening, data abstraction and risk of bias appraisal.
- Selected studies examined MCI patients prescribed donepezil, rivastigmine, galantamine, and/or memantine compared to placebo, other cognitive enhancers and/or supportive care. Outcomes included cognition, function, mortality, and potential harms.

What did the review find?

- Of the 15, 556 titles and abstracts and 1,386 full-text articles, 8 RCTs (4 examining donepezil 5-10 mg, 2 examining galantamine 16-24 mg, 1 each examining memantine 10-20 mg and rivastigmine 3 -12 mg) and 3 companion reports were included.
- No statistically significant differences were found between cognitive enhancers and placebo across **cognition, function, and mortality** outcomes.
- Patients taking cognitive enhancers experienced significantly more **nausea, diarrhea, vomiting, and headaches** compared to those on placebo. There were no differences in **major adverse events** between those taking cognitive enhancers and placebo.