Cholinesterase inhibitors for mild cognitive impairment

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- Results of a Cochrane review on the use of cholinesterase inhibitors to treat people with mild cognitive impairment
- Implications for nursing practice

Review question
Are cholinesterase inhibitors safe and effective for treatment of people with mild cognitive impairment?

Nursing implications
Cholinesterase inhibitor drugs are used to treat people with Alzheimer’s disease, which is the most common cause of dementia. However, there is very little evidence that these drugs prevent the development of dementia over three years; in addition, people taking them experience a number of side-effects, including:

- Nausea;
- Vomiting and diarrhoea;
- Muscle spasms/leg cramps;
- Abnormal dreams.

Nurses play an important role in caring for patients who have mild cognitive impairment and dementia. It is therefore vital that they have up-to-date knowledge of the drugs used to treat these conditions to enable them to inform patients and their carers.

Study characteristics
Nine randomised, double-blind, placebo-controlled trials, consisting of a total of 5,149 individual participants with mild cognitive impairment, were included in the review.

The intervention of interest was all types of cholinesterase inhibitors (three studies used donepezil; four used galantamine; and two used rivastigmine), at all doses (donepezil 5-10mg/day; rivastigmine 1-2 mg/day; galantamine from 8-24mg/day). The drugs were taken for a minimum duration of four weeks (maximum follow-up was three years) and were compared with a placebo.

The primary outcomes of interest for the study were as follows:

- Progression to dementia using criteria from the National Institute of Neurological and Communicative Disorders and the Stroke and the Alzheimer’s Disease and Related Disorders Association (NINCDS-ADRDA) with or without criteria from the fourth edition of the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (DSM-IV);
- Side-effects, including gastrointestinal and cardiac side-effects.

Secondary outcomes of interest to the researchers included:

- Change in cognitive test scores;
- Mortality.

All studies were noted as being of good methodological quality. Meta-analysis was undertaken where possible.

Summary of key evidence
There was very little evidence that cholinesterase inhibitors reduce the risk of progression to dementia. There was no effect at one year, which was based on data from three studies, nor at three years – based on data from two studies.

Evidence from two studies indicated a statistically significant reduction of risk for conversion to dementia by 33% at two years for treatment groups compared with placebo. There was no evidence to justify recommending the use of cholinesterase inhibitors to treat patients with mild cognitive impairment who do not meet the diagnostic criteria of dementia.

Other significant adverse events occurring more often in the group taking cholinesterase inhibitors were:

- Muscle spasms/leg cramps;
- Headache;
- Syncope or dizziness;
- Insomnia;
- Abnormal dreams.

Best-practice recommendations
There is very little evidence that cholinesterase inhibitors have an effect on progression to dementia or cognitive test scores in people with mild cognitive impairment. In addition, they are associated with a number of adverse events, particularly those of a gastrointestinal nature.

There is no evidence to justify recommending the use of cholinesterase inhibitors to treat patients with mild cognitive impairment who do not meet the diagnostic criteria of dementia.

The full review report, including references, can be accessed at onlineibrary.wiley.com/doi/10.1002/14651858.CD009132.pub2/abstract

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Reference