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BRIEF ANSWERS TO SPECIFIC CLINICAL QUESTIONS

Q: What can we offer patients with mild cognitive impairment?

A: We can promote healthy nutrition, physical activity, socialization, and mental activity. These interventions help stabilize and even improve cognition, as well as enhance quality of life and mood, delay institutionalization, and reduce disruptive behaviors. However, no medication is approved by the US Food and Drug Administration for treating mild cognitive impairment (MCI).

No drug is approved for treating mild cognitive impairment

WHAT IS MILD COGNITIVE IMPAIRMENT?

MCI is a dynamic stage between normal aging and dementia. It is diagnosed in patients with an objective cognitive deficit but preserved function.

Population-based studies have found a wide range of rates of MCI incidence (21.5–71.3 per 1,000 person-years) and prevalence (3%–42%).[1] The risk of progression from MCI to dementia ranges from 5% to 25% per year and is highest with MCI that involves memory loss (amnestic MCI).[2,3]

MCI can be regarded as a syndrome that is often associated with Alzheimer pathology and that has variable outcomes. In MCI due to Alzheimer disease, the primary complaint is short-term memory loss.[4] Patients who have multiple impaired cognitive domains with prominent deficits in attention and executive function and relatively unimpaired short-term memory (nonamnestic MCI) are more likely to have vascular or Lewy body pathologies.[5] Although distinctions between amnestic and nonamnestic MCI can be useful for counseling patients, both subtypes have similar proportions of "pure" Alzheimer disease pathology, vascular infarcts, and other pathologies at autopsy.[5,6]

doi:10.3949/ccjm.82a.14130

GENERAL MANAGEMENT—IMPROVE OVERALL HEALTH

Primary management of MCI should focus on improving lifestyle factors and treating comorbid conditions that can affect cognition (eg, depression, nutritional deficiencies).

An important goal of management is to preserve working memory, ie, the ability to maintain and manipulate information while ignoring distractions. Preservation of working memory but not short-term memory is associated with slower functional decline in MCI and early Alzheimer disease.[7] Lifestyle factors including sleep, stress, and exercise affect working memory performance and, thus, functional ability.

Minimizing the risk of traumatic brain injury by reducing the risk of falling is also important. Although the role of alcohol consumption as it relates to cognition is controversial, physicians may counsel older adults with MCI to reduce their alcohol consumption even if they are consuming no more than one standard drink in a 24-hour period, in order to reduce the risk of falls and their sequelae.

Optimally controlling blood pressure, lipids, and blood sugar can reduce cardiovascular risk and may slow progression of MCI to dementia.[2]

Smoking should be stopped and polypharmacy avoided, with particular emphasis on eliminating medications included in the Beers criteria.[8]

A HEALTHY DIET MAY HELP

Although evidence supporting the benefits of various diets for MCI remains scarce with mixed results, a healthy diet may favorably affect cognition. A 2009 systematic review

TABLE 1

Recommendations for patients with mild cognitive impairment

Reduce medications, especially those in the Beers criteria
Encourage tobacco cessation
Encourage minimizing alcohol use (frequency and quantity)
Optimize sleep without medications
Encourage reducing stress; screen for depression
Optimize blood pressure, lipids, and blood sugar
Treat comorbid diseases that can affect cognition (eg, thyroid dysfunction, vitamin deficiencies)
Reduce fall risk
Increase awareness of safety risk factors (eg, medication use, driving, cooking)
Provide caregiver education and support
Promote a healthy diet (increase omega-3 fatty acids, Mediterranean diet)
Encourage increasing aerobic physical activity
Encourage cognitively stimulating hobbies (eg, puzzles, games, reading)
Consider strategy training (eg, mnemonics, calligraphy)
Encourage regular engagement in social activities

found that observational studies showed that long-chain omega-3 fatty acids had a positive influence on cognition, but results from clinical trials were equivocal.[9] Studies investigating the impact on cognition of the Mediterranean diet—rich in vegetables, fruits, whole grains, lean protein, and olive oil—remain mixed (possibly because of dietary and cognitive measurement variations between studies) but suggest that it promotes slower cognitive decline.[10]

PHYSICAL ACTIVITY HAS MULTIPLE BENEFITS

Physical activity has many health benefits in the elderly: it reduces muscle loss, increases functional capacity, and decreases the risk of falls.[11] Several randomized controlled trials have explored the relationship between physical activity and cognition in patients with varying degrees of cognitive impairment. Although the optimal type and duration of exercise needed to achieve a specific benefit remains unclear, physical activity has been found to be helpful in more studies than not.[12] Baker et al[13] found that 45 to 60 minutes of high-intensity aerobic activity 4 days a week for 6 months improved executive function.

MAINTAIN SOCIAL ACTIVITIES

Social engagement—which can include a range of activities from conversation to structured group activities—is important for maintaining cognitive function.

A prospective cohort study[14] that followed participants for 1 to 3 years after MCI diagnosis found that those who progressed from mild to severe cognitive impairment were less likely to attend a place of worship, work, or volunteer.

A longitudinal study of 89 elderly people without known dementia evaluated measures of socialization, global cognitive function, and Alzheimer disease pathology seen on brain autopsy. Lower cognitive function was associated with more disease pathology, but social network size modified this relationship: cognitive function was less impaired than expected for those with a large social network, even for those with a high burden of brain pathology.[15]

Mild cognitive impairment is diagnosed in patients with an objective cognitive deficit but preserved function

ENCOURAGE BRAIN EXERCISE

Activities can include "cognitive hobbies" such as playing board games, reading, playing a musical instrument, and doing crossword puzzles. Specific cognitive training strategies (eg, mnemonics, calligraphy therapy, computer-based interventions) have shown benefits, although it is unclear if some interventions are more effective than others.[12]

MULTIMODAL STRATEGIES

There are no data supporting strategies that combine multiple interventions compared with a single intervention on cognitive outcome. However, most single interventions likely contain socialization as an unstated intervention. For example, group settings for a cognitive or physical activity may include interactions with an instructor and interactions with other participants. It is thus difficult to identify truly unimodal interventions.

An example of a multimodal approach for cognitive impairment is tai chi. Physical activity in tai chi is used for coordinated movements and balance; attention, visual imagery, and memory provide cognitive stimulation; and it is frequently performed in a group setting or with an instructor. A 1-year trial in 389 MCI patients found that those who practiced tai chi had lower clinical dementia rating scale scores than the control group who participated in stretching and toning exercises.[16]

Table 1 summarizes recommendations for patients with MCI. In addition, referral to a geriatrician should be considered for assistance with evaluation and management, particularly if the patient lacks a capable caregiver or if the caregiver is under stress.

Older adults at risk for falls should minimize their drinking

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