

Memory Care Monthly

Supporting Healthcare Professionals in Caring for the Aging

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Heart Disease, Cognitive Impairment and Dementia

Heart disease is one of the three most common causes of disability among aging adults¹. Heart disease, either directly or indirectly, can cause cognitive impairment and dementia, particularly in patients over 60 years old². Many of the factors underlying the cognitive impairment associated with heart disease are modifiable. Early detection of cognitive impairment in such patients, combined with treatment of the modifiable factors, can delay or halt its progression.

The heart diseases most likely to cause cognitive impairment/dementia are²:

1. Congestive Heart Disease
2. Coronary Artery Disease
3. Myocardial Infarction
4. Atrial Fibrillation

Among patients with congestive heart disease, factors associated with cognitive impairment include³:

1. Less than a high school education
2. Low serum albumin
3. Hyperglycemia
4. Abnormal sodium or potassium levels
5. Anemia
6. Systolic blood pressure \geq 130 mm Hg
7. Increasing severity of congestive heart disease⁴

Perhaps more important, the correction of hyperglycemia, abnormal potassium, and anemia in such patients can improve their cognitive function³.

Heart disease also associates with other conditions that increase risk of cognitive impairment/dementia, including²:

1. Smoking
2. Hypertension
3. Diabetes Mellitus Type II
4. Transient Ischemic Attack
5. Stroke
6. Atherosclerosis and/or hyperlipidemia

Brain imaging findings associated with heart disease include cortical atrophy, central atrophy (ventriculomegaly)⁵, cerebral hypoperfusion, white matter lesions, and infarcts⁶.

A reasonable strategy in preventing and delaying cognitive impairment associated with heart disease consists of the following:

1. Annually screen patients with heart disease for cognitive impairment.
2. Order an MRI (or spiral CT if MRI is contraindicated) in patients who screen positively for cognitive impairment. Evaluate whether they have abnormal MRI findings that are associated with heart disease, including:
 - a. Cortical or central atrophy⁵
 - b. White matter lesions or infarcts⁶
3. Laboratory evaluation should include:
 - a. Complete Blood Count in patients with anemia or who smoke;
 - b. Chemistry panel to evaluate for abnormal electrolytes, renal impairment, or hypoalbuminemia;
 - c. Fasting blood glucose with or without HbA1c in diabetic patients to determine degree of control;
 - d. Fasting lipid panel in patients with hyperlipidemia;
 - e. Evaluation for changes and severity of underlying heart disease;
 - f. Serial blood pressures in patients with hypertension;
 - g. Orthostatic blood pressure measurement to exclude causes of cerebral hypoperfusion.
4. Treat any identified problems to achieve better control of the underlying factors that may be causing cognitive impairment.
5. Monitor cognitive function:
 - a. Every three to six months;
 - b. About one to three months after any treatment changes that could modify the degree of cognitive impairment. The wordlist of the MCI Screen changes with each administration to a patient to eliminate improvement from practice effects.
6. Adjust therapy according to objective and subjective response to treatment to minimize cognitive impairment.

References

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Research Updates

New Study Strengthens the Link Between MCI and AD

Mild cognitive impairment (MCI) is usually classified into 2 subtypes based on existence of memory impairment – amnesic vs. non-amnesic. According to the consensus, amnesic single domain MCI is presumably caused by Alzheimer's disease (AD) and the annual rate of conversion to AD is 10 to 15% in contrast to 1 to 2% among normal elderly persons. Dr. Fischer and his group from Medical University Vienna, Austria, conducted a study to further investigate the rate of conversion to AD between subtypes of MCI in a community-based sample of 697. Of 697, 581 non-demented individuals completed extensive neuropsychological examination at baseline. Follow-up examinations after 30 months were administered to 476 individuals. The 141 patients with MCI at baseline were classified into 2 subtypes – amnesic vs. non-amnesic. At follow-up, 41 of these MCI patients were diagnosed with AD, representing a conversion rate of 48.7% for amnesic MCI and 26.8% for non-amnesic MCI. This study showed that patients with MCI have higher probability to convert to AD regardless of subtypes. Also conversion to vascular dementia and Lewy body dementia was not restricted to non-amnesic MCI as previously indicated. The results of this study suggests that identifying MCI and diagnosing the underlying cause will aid in the early detection and treatment of not only AD but also other types of dementing disorders.

Reference: Fischer, P. et al, *Neurology* (2007) 68(4): 288-291.

Severity of Memory Loss Associated with ECT May be Due to Technique Used

A recent study conducted by Dr. Harold A. Sackeim and colleagues of New York State Psychiatric Institute found that memory loss due to electroconvulsive therapy (ECT) may be associated with how the treatment is administered. The clinical and cognitive outcomes of 347 patients with major depression who had at least one post-ECT evaluation were considered. The subjects were treated at 7 different hospitals and the outcomes of the different sites varied considerably. The different outcomes were attributed to differences in ECT techniques.

Reference: Sackeim, H.A. et al., *Neuropsychopharmacology* (2007) 32(1): 244-54.

Practical Recommendations for Alzheimer's Disease

New recommendations by panel of experts address screening, treatment and management of AD

New guidelines for treating and managing Alzheimer's disease (AD) were developed by a panel of experts and published as a supplement to the January 2007 issue of the *Journal of Geriatric Pharmacotherapy*. Although a cure does not currently exist for AD, based on published studies, patients benefit significantly from proper management and treatment of the disease. Within the past few years, clinical trials have demonstrated that anti-dementia drugs play a pivotal role in the treatment and management of patients. These recent findings were incorporated into the panel's recommendations. Some of the key recommendations follow:

Screening, Diagnosis and Management of AD in the Primary Care Setting

Treatment of AD is most effective when diagnosed at the earliest stages and often the burden of diagnosis falls on the primary care physician. To that end the panel developed the following screening recommendations:

Age of patient	Prevalence of AD	Recommendation
65-74	3%	Discretionary, driven by signs of cognitive impairment noted by either patients or caregivers
75-84	19%	Screening should be done annually or biannually, or whenever the presence of cognitive impairment is noted
≥85	47%	Annually for all patients

Combination Therapy Recommended

The two classes of drugs available for treatment of AD are Cholinesterase Inhibitors [CHEIs] and N-methyl-D-aspartate [NMDA] receptor antagonists. Recommendations of the panel include

- Mild stages of AD should be treated with Cholinesterase Inhibitors [CHEIs]
- Moderated AD should be treated with a combination of Cholinesterase Inhibitors [CHEIs] and N-methyl-D-aspartate [NMDA] receptor antagonists.
- Progression of mild to moderate AD should be managed with the addition of a NMDA antagonist
- Patients with severe AD should be treated with a NMDA antagonist first. CHEI should be added when necessary

Furthermore, newly diagnosed patients should undergo re-evaluation at 2 months and every 6 months thereafter.

Diagnosed Patients and Caregivers Should Receive Counseling

The mental and physical health of the patient's caregiver should be considered. To that end, caregivers can benefit from counseling provided by geriatric care managers and organizations such as the Alzheimer's Association.



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