

Memory Care Monthly

Supporting Healthcare Professionals in Caring for the Aging

December 2006

Happy Holidays

Medical Care Corporation wishes you Happy Holidays and a New Year filled with joy and prosperity.

Going forward, our hope is to bring our technologies to you for the greatest benefit to your patients and community.



Evaluating and Treating the Post-Holiday Syndrome: Depression vs. Dementia

Holiday gatherings provide families the opportunity to notice changes in their loved ones. Physicians frequently see patients after the holidays because of such observations. A common observation is that a family member appears depressed or more forgetful than they used to be. Distinguishing depression from mild cognitive impairment (MCI) or dementia due to Alzheimer's disease is relatively straightforward and is discussed below.

A diagnosis of major depressive disorder requires that patients must experience persistence in their depression-related symptoms for at least a few weeks. The Depression Screen (www.mccare.com) is a quick way to screen for major depressive disorder as well as identify potentially useful antidepressant therapy based on the pattern of depressive symptoms.

Depression can be a consequence or a cause of cognitive impairment, so the presence of depression does not exclude a coexisting dementing disorder. The pattern of cognitive impairment due to Alzheimer's disease can be readily distinguished from that due to depression or the other so-called sub-cortical causes, which include cerebrovascular disease, Parkinson's disease, multiple sclerosis, metabolic disorders, autoimmune disorders such as lupus, mild traumatic brain injury, and certain medications such as anticholinergics, tranquilizers, opiates, benzodiazepines and chemotherapeutics.

Memory loss due to Alzheimer's disease is characterized by impaired ability to encode (store) newly learned information. This means that *providing cues or hints do not help Alzheimer's patients recall recently learned information* (i.e., if the information was not recorded, it can not be retrieved). *The pattern of memory loss usually seen in Alzheimer's disease therefore consists of impaired delayed free recall and impaired delayed cued recall.*

In contrast, sub-cortical causes of MCI and dementia allow patients to at least partially store newly

learned information, but impair the ability to retrieve it after a few minutes delay. *The pattern of memory loss usually seen in depression and other sub-cortical disorders therefore consists of impaired delayed free recall and relatively preserved delayed cued recall.*

A quick way to distinguish memory loss due to Alzheimer’s disease vs. that due to depression or other subcortical disorders is to look at the delayed free recall and delayed cued recall scores on the “longitudinal view” of the MCI Screen. *Impaired delayed free recall* is determined by looking at the score under the column, “Delayed Free Recall.” Usually, scores of 6 or below out of 10 are consistent with impaired delayed free recall, although the score is also lowered by increase in age. *Impaired delayed cued recall* is determined by adding the number of correct “yes” and “no” responses on delayed cued recall. Scores below 18 out of 20 are usually considered to be impaired and represent impaired storage of new information.

Another cognitive ability that helps distinguish Alzheimer’s disease from sub-cortical causes of MCI and dementia is *awareness of one’s own abilities. Alzheimer’s patients are often unaware of at least some of their deficits* and

will frequently say that they do not have a problem or will overestimate their abilities. In contrast, *persons with depression and other sub-cortical causes of MCI and dementia are often very aware of their deficits and will underestimate their abilities.*

Component	Status	Score/Max Score	Standardized Score	Interpretation
Recall	Analyzed	N/A	N/A	Impaired
Immediate	Understands	19/30	1.2	Not Impaired
Delayed	Complete	8/10	N/A	Severe
Delayed	Complete	3/10	-1	Not Impaired
Delayed	Understands	7/10	-2.4	Moderately
Delayed	Understands	10/10	0.5	Not Impaired
Animal	Complete	3	N/A	N/A

The table above shows the results of an MCI Screen

A quick way to identify these different patterns of impaired awareness of one’s own abilities is to *subtract the delayed free recall score from the delayed recall estimate score*, which is given in the MCI Screen’s longitudinal view. *When the difference between these scores is +3 or more, an overestimate of memory ability is likely and is consistent with an Alzheimer’s type process. When the difference between these scores is -3 or worse, an underestimate of memory ability is likely and is consistent with depression or other subcortical cause of cognitive impairment.*

Patients with both depression and Alzheimer’s disease will present with a pattern of memory loss consisting of impaired delayed free recall and impaired delayed cued recall. However, with coexisting depression they may underestimate their own memory ability such that the delayed recall estimate *minus* the delayed free recall score may be -3 or worse.

When it is clear that the patient has major depressive disorder but it is not clear whether the patient also has a coexisting dementing disorder such as Alzheimer’s disease, one approach is to get a baseline MCI Screen, treat the depression, then repeat the MCI Screen once the majority of the patient’s depression is treated. If the cognitive impairment was due to depression, it should resolve with treatment of the depression. However, if the MCI Screen indicates that there is still impairment, one should then consider further evaluation to diagnose an underlying dementing disorder.

Imaging Study Reveals Altered Brain Function After Chemotherapy

A recent FDG-PET study has shown significant alterations of brain function in breast cancer survivors who had undergone chemotherapy 5 to 10 years prior. This study links the “chemo brain” syndrome of forgetfulness and mental fog to specific alterations in brain metabolism.

The study conducted by Silverman et al. from UCLA examined 16 women who had had adjuvant chemotherapy for breast cancer 5 to 10 years earlier in 8 age-matched control subjects who had never received chemotherapy. Eleven of 16 chemotherapy-treated women had also taken tamoxifen.

In a short-term verbal memory task, the chemotherapy-treated patients had significantly greater activation in the inferior frontal gyrus and in the vicinity of Broca’s area in the dominant hemisphere. The controls had little activity in those areas while the parietal cortex showed the greatest activity. The increased activities in the inferior frontal gyrus in the chemotherapy-treated patients were probably due to “ramp up” activity in order to recall the same information. The researchers also found that resting metabolism rates among patients treated with tamoxifen-containing regimens were significantly different from those in patients who were not treated with the regimens.

This study suggests the clinical importance of monitoring cognitive functions of patients undergoing chemotherapy.

Reference: Silverman et al. *Breast Cancer Res. Treat.* (2006) Sept 29.

Brain Imaging Tracks Progression of Alzheimer's Disease

Using an innovative 3-dimensional imaging technique, scientists have tracked the progression of Alzheimer’s disease in the living human brain and the disease-related hippocampal atrophy. The study was led by Dr. Apostolova at the University of California, Los Angeles, and was published in the November issue of *Brain*. The cross-sectional study included 31 patients with mild cognitive impairment (MCI) and 34 probable AD patients. Alzheimer’s disease originates in the transentorhinal and entorhinal areas of the brain and spreads to the subiculum and CA1 area and then to the CA2 and CA3 areas of the hippocampus, before invading the neocortex.

With new techniques, researchers hope they can predict a conversion from amnesic MCI to AD more accurately, as well as diagnose and treat AD patients at the predementia stage. Also, such techniques could facilitate intervention studies to determine the efficacy of traditional and novel therapeutic agents in attenuating or halting disease progression.


Reference: Apostolova et al. *Brain* (2006) 129: 2856-2866

New Look For our Website

The Next time you visit www.mccare.com, you will notice a new look to our website.

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MCI SCREEN

Medical Care Corporation specializes in the development of medical technologies that enables healthcare providers to deliver improved levels of care in the field of dementia.

ALZHEIMER'S

NEWSROOM

Our MCI Screen is the only validated cognitive assessment for identification of mild cognitive impairment and dementia.

SUPPORT

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Try it FREE

Create a 15-day Trial Account and use the MCI Screen and our dementia care system to measure and manage memory loss in your patients.

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Resources

Under the MCI Screen section, you will now find "Resources" such as:

- ✓ Newsletter Archive
- ✓ Clinical Updates on topics related to Alzheimer's Disease and Related Disorders
- ✓ Practice Management Resources

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PreventAD.com delay of Alzheimer's Disease has not stay healthy and treatment of Alzheimer's independence

Free Memory Screen

Assess yourself or a loved one

PreventAD.com is sponsored by Medical Care Corporation, developer of cognitive assessment products for physicians and other health care professionals. The company's MCI Screen is the most accurate tool available for identifying memory loss at its earliest stages and is used by dementia specialists as well as primary care physicians around the world.



We have also launched a new patient education website at www.PreventAD.com

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