Dementia Insight

Many interesting papers and presentations given at the International Alzheimer’s Disease Conference in Vienna, Austria in July offered information that is pertinent to practicing clinical neurologists. Below, I highlight a few of the studies* and their implications for clinicians.

**Highlights**

Karin Yurko-Mauro, et al., presented the results of a paper entitled “The Effects of Docosa-Hexaenoic Acid On Physiological and Safety Parameters In Age Related Cognitive Decline.” DHA is the principle Omega 3 fatty acid in the brain. Four hundred eight-five subjects were enrolled in the randomized double blind placebo controlled multi-center study to determine whether 900mg of DHA produced any change from baseline in a visual spatial episodic memory test. The six-month study showed improved memory function in the DHA-treated patients as compared to placebo. The improvement shifted the treated patients to the normal cognitive function of a younger age group with an excellent safety profile. It is not quite clear from the study whether some of these patients might have had mild cognitive impairment of the amnestic type or just mild changes of normal aging. There was no evidence from a similar study that DHA was beneficial in Alzheimer’s disease patients.

**Synthesis:** Currently there do not appear to be any specific vitamins or food supplements that are effective in slowing or preventing cognitive decline in the general population or in patients who are cognitively impaired. The use of 900mg of DHA appears to possibly have some benefit in the normal aging population in slowing cognitive decline. Further studies will likely be needed, but it seems that DHA is safe and without any side effects. It may be reasonable to recommend this to some of our elderly patients or perhaps to patients who have very mild cognitive decline. Another good source of DHA is salmon and tuna.

Norberg, A., et al., presented a paper entitled “PET Amyloid Imaging and Cognition in Patients with Alzheimer’s Disease, Mild Cognitive Impairment and Healthy Controls,” which is a European multicenter study. In this study, there were 102 Alzheimer’s patients with an MMSE of 23, 73 MCI patients with an MMSE of 27, and 52 controls with an MMSE of 29. The neuropsychological testing was done with special testing of verbal memory, attention, visual perception, and nonverbal memory. Age, gender, and education in all cases were similar. The studies showed that there was a statistical moderate increase in Pittsburg Compound B-binding in the frontal parietal area in the Alzheimer’s cases compared to intermediate binding in the mild cognitively impaired patients. The binding in controls was very mild in five out of 52 normal subjects. There was an inverse correlation between the Pittsburg Compound B-binding in mild cognitive impairment and verbal and visual delayed memory scores. Forty-eight of the MCI patients were followed for one year; 15 converted clinically to Alzheimer’s disease with evidence of...
increased PIB-binding. The study concluded that the Pittsburg Compound B PET imaging in six European Centers showed a significant difference in PIB-binding between mild cognitive impairment, Alzheimer’s disease, and controls, and there was an inverse correlation between PIB-binding and cognition observed in the MCI and Alzheimer’s disease cases.

**Synthesis:** This study showed that the amount of amyloid in the brain increased proportionally with worsening abnormalities on neuropsychological testing. This result is not surprising, since research has strongly suggested that more cognitive impairment in Alzheimer’s disease should show more abnormal amyloid in the brain. This study further verifies this and will be very helpful in clinical practice once amyloid imaging is used in testing of cognitive impaired patients. This amyloid binding capability will be helpful in reducing the number of dementia cases that are diagnosed clinically with Alzheimer’s disease but at autopsy are determined to have Lewy Body or frontal temporal dementia.

**Foerster, and Stefan, et al.,** presented a paper entitled “Positive Effects of a Six-Month Stage Specific Cognitive Intervention Program on Brain Metabolism in Subjects with Amnestic Mild Cognitive Impairment and Mild Alzheimer’s.” In the past it has been shown that cognitive intervention helps MCI and Alzheimer patients, but there has not been a study showing follow-up on brain PET scans to see if glucose metabolism changes. This study consisted of 21 patients with amnestic mild cognitive impairment, 15 with mild Alzheimer’s, and controls. The cognitive intervention group had weekly seminars of specific cognitive intervention, while the other group received only a pencil and paper exercise for self-study. PET scans and neuropsychological baseline studies were done initially. At six-months, the controls showed a decreased decline in glucose in the parietal temporal, frontal, and posterior cingulate regions. The cognitive intervention group showed only discreet decreases in glucose metabolism in bilateral, prefrontal, left inferior temporal cortex, and less reduced glucose in the right parietal, cingulate, and frontal cortices regions. They showed that MCI and Alzheimer’s disease patients who participated in the six-month stage specific cognitive intervention as opposed to a self-study showed cognitive benefits by the neuropsychologist and delayed progression of reduced glucose metabolism in the brain and especially in regions affected by Alzheimer’s disease. A longer study with larger population will likely need to be done.

**Synthesis:** This study adds further credence to the benefits of active cognitive rehabilitation in patients with mild cognitive impairment and Alzheimer’s disease. This is important because cognitive intervention is under-utilized in patients with these disorders. Unlike medication, this is an active form of treatment and in my experience many patients are eager to take part in cognitive rehabilitation, and caregivers appear to be pleased with this intervention.

**Another paper of interest was by Lincoln Dadina, B., et al.,** entitled “Driving Ability in People with Dementia.” They studied 118 dementia patients and 30 controls. They gave The Nottingham Neurodriving Assessment and a battery of neuropsychological testing. Of the 118 dementia patients, 27 were determined to be unsafe and 91 were safe. All the controls were safe and normal. The main problems with driving in dementia cases were: 1.) less likely to observe the rear of the car through the mirror, 2.) driving in the proper traffic lane, 3.) obedience to road signs. The problems that were determined on the road test of the dementia patients correlated strongly with a number of cognitive tests. These tests were: road sign recognition, mini mental test (MMSE), and a direct search test. Thirty percent of cases with dementia failed the driving test, and the failures directly correlated with poor performance on the cognitive tests. It appears that certain batteries of cognitive testing specifically predicted the ability of patients with dementia to drive safely.

**Synthesis:** We all know that some patients with Alzheimer’s disease are able to drive reasonably safely, particularly in their own neighborhoods. This study is important in that there is a correlation...
between the outcome of a number of cognitive tests and the capabilities of many of our patients to drive. Many of our MCI and Alzheimer patients are sent for driver’s evaluation. It would be useful for clinicians to do some of these tests in the office and determine ahead of time our patients’ driving capabilities. Many of us in clinical practice use the driver’s test to demonstrate to patients and their families that they should not be driving. Not uncommonly the driver’s evaluation determines that the patient with dementia may drive, but only with supervision by the caregiver or only in small areas in the community. Many times caregivers are disappointed, because they were hoping that their loved ones would fail the test and the subject of driving and its conflicts would go away. An in-office test given by the neurologist, as suggested in this paper, might be a better prediction of which patients with Alzheimer’s disease will pass or fail the drivers’ test so we could counsel the caregivers accordingly.

Duran, E., et al., presented a paper entitled “The Effects of Anti-hypertensive Therapy in Cognitive Stability in Alzheimer’s Disease.” They studied 290 Alzheimer’s patients and followed them for three years. These patients averaged 78-years-old, and 54 percent of these patients received antihypertensive therapy. The mini mental testing was done at year one. In year one the patients treated for hypertension had an MMSE score of 22 versus 20 for the non-hypertensive group. The MMSE score was 21 versus 19 at two years, and 19 versus 17 at three years. It appeared from the study that there were a high number of cognitively stable patients on antihypertensive therapy over time as shown by MMSE scores. In this study they used calcium channel blockers and ACE inhibitors.

**Synthesis:** This study suggested that patients with Alzheimer’s disease who have hypertension and are treated appear to have more stability in cognitive function than patients who are not hyperten-

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**Public Perception of Alzheimer’s Disease: A Commentary**

Public perception of Alzheimer’s disease depends on both medical and non-medical sources of information. This includes Hollywood movies, Internet sources, newspaper and magazine articles, television productions, the Alzheimer’s Association nationally and its many state chapters, and physicians in various specialties, including neurology, geriatrics, and geriatric psychiatry, among others. Other than with our patients and their families and caregivers, most physicians have very little influence on the public information flow related to Alzheimer’s disease and other related disorders. However, we certainly would expect the Alzheimer’s Association and its Scientific Advisory Board, if asked by the media to give input in their productions about Alzheimer’s, to be sure all appropriate available and correct information is disseminated, and that any media errors are corrected.

The first media presentation I recently saw related to Alzheimer’s disease just shocked me: it was on Nightline in early spring 2009. One of the reporter/host(s) decided to have his blood tested for APOE to determine his risk of developing Alzheimer’s and to present this information on the broadcast. In the segment that aired on Nightline, on the day that the host was to get the results of his APOE testing, there were cameo shots of members of the Scientific Advisory Board of the Alzheimer’s Association, not on the set but in the background. The reporter/host turned out to be positive for the APOE4 gene. He immediately showed worry and distress on his face when given this information and then looked into the camera and told the audience he would be consulting with his attorney as soon as possible to get his estate in order and update his will because of the implications of this test result.

This, of course, is not the way the public should receive information about genetic testing in Alzheimer’s disease. We all know that the predictability of APOE testing to future development of Alzheimer’s is modest at best and is not generally recommended except for certain research studies, since there is no specific prevention for Alzheimer’s disease at this time. An article recently published by Green, et al., (NEJM 2009; 361(3):245-54) looked at family members of Alzheimer’s patients who were given the results of their APOE testing, what it meant to them, and how they reacted to a positive test result. The study showed that during the first year the family members who tested positive did not show any significant anxiety or psychological factors compared to the controls without any family history of Alzheimer’s. The problem with the study is that the population with a family history of Alzheimer’s
sive and not on medication. Prior studies have sug-
ggested that the use of ACE inhibitors and some cal-
cium channel blockers seems to have a possible
effect on stability of brain function or slowing cog-
nitive decline than other categories of anti-hyper-
tensive agents. This could be the reason for the sta-
bility and less decline of treated hypertensive
Alzheimer patients versus non-hypertensive
Alzheimer’s cases. This data, along with other stud-
ies, suggest that hypertension in cognitively
impaired patients should be treated with antihyper-
tensive medications in the ACE inhibitor or calcium
channel blocker classes of medications.

Pecena, et al., had a paper entitled “The
Association of Antipsychotic Drug Use and Mortality
in the Very Old with Dementia, the Monzonio 80+
Study.” This is an ongoing study of all people 80-
years-old or older in a province in Italy. At baseline,
34 percent of elderly participants had dementia.
Nineteen percent of the dementia patients (618 par-
ticipants) used antipsychotic medications. This
included in-home or institutional care, and about
three percent of the non-demented elderly popula-
tion used antipsychotic medications as well. In both
populations age and gender were similar. At a four-
year follow-up, the death rate in the antipsychotic
use population was 64 percent and in the non-use
group it was 67 percent. There were no differences
noted in smoking, BMI, stroke, diabetes, hyperten-
sion, heart attack, and COPD. It appeared from this
study that the use of antipsychotic medications in the
very old with dementia did not seem to be associated
with a higher mortality over four years.

Synthesis: This is an important finding since it
appears that there is (in this limited study) no higher
mortality with the use of antipsychotic medication.
Antipsychotic medications have taken a hit from the
FDA and interest groups because of the reported
higher mortality in some studies and cardiovascular
complications. This study does not mean we should

disease was very selectively picked, and anyone with a diagnosis
of anxiety, depression or any psychological problems in the past
was not allowed into the study. This very selective population like-
ly does not represent the real world. Also, the study was for a year
only and it is not clear what impact positive APOE results have to
this population beyond one year.

The second, larger production is a four-part series on AD
called, The Alzheimer’s Project, Hopeless For The Future(In the
title, “less” is crossed out). It was produced by HBO and edited by
Maria Shriver and one of her colleagues. Ms. Shriver’s father suf-
fers from very late stage AD. This series, which initially aired on
HBO this spring, has continued to be shown by private interest
groups across the country including Alzheimer’s Association chap-
ters locally, assisted living centers, and retirement communities.

I had the opportunity to view this series on my own and also to
participate in several panel discussions after large public showings
in a movie theater. If the readership of this journal has not seen this
HBO series, and you diagnose and treat Alzheimer’s disease, and
counsel caregivers and families, I strongly urge you to see it. I was
very disappointed with the lack of pertinent information about the
diagnosis and treatment of Alzheimer’s disease currently available
in 2009. After I saw this series, even with the “less” part of the word
“hopeless” crossed out in the title, I actually was left feeling more
hopeless and fearful of this disorder, and I am a trained neurologist
who has been treating this disease in my own clinic since 1993, and
even earlier. The series primarily presented and discussed AD
patients with moderate to severe disease, and described the frustra-
tions of their caregivers and their families, who are often one and
the same. Part One emphasized memory issues, but again in very
impaired later stage patients. Maria Shriver narrated Part Two. She
talked about the disease in her father who has severe Alzheimer’s
disease, and the problems she and her family face on a day-to-day
basis. Part Three discussed current and future research in this dis-
ease by major researchers in the field. They amply discussed all the
work with imaging, amyloid burden in the brain, and the various
pharmacological agents currently being studied and developed to
inhibit beta amyloid and phosphorylated tau production. Part Four
discussed the caregiver burden in a number of families and impaired
function of late stage Alzheimer’s patients.

Nothing was mentioned about amnestic mild cognitive impair-
ment, which in a high percentage of individuals is the earliest
presentation of Alzheimer’s. Nothing was mentioned
be using antipsychotics indiscriminately, but in elderly patients who present with significant behavioral and psychotic features, it appears to be relatively safe to use these medications in appropriately small doses as necessary.

Norton, et al., had an interesting paper entitled “Spousal Dementia Care Giving as a Risk Factor for Incident Dementia.” This was part of the Cache County memory study, which enrolled 5,092 persons age 65 and older, beginning in 1995 and ongoing. This study looked at spouses who were caregivers for their demented spouses. There were 1,221 couples equaling 2,442 subjects. Incident dementia was documented for subjects and their spouses. Incident dementia was diagnosed in 255 subjects (221 had a dementia-free spouse and 34 whose spouse had incident dementia). They found that the caregiving spouse has a six-fold increase in the hazard for incident dementia in relation to subjects whose spouses were dementia free. This risk was identical for men and women, and this conclusion was still present after the effect of other factors risking dementia was removed.

**Synthesis:** We have all known for years that the stress and burden on caregivers can often lead to a shortened life span with development of numerous other medical problems, such as depression, cardiovascular disease, and worsening hypertension. This study suggests that another risk of caregiver burden is the higher risk of developing Alzheimer’s disease. This is an important message for clinical neurologists who treat dementia patients. We must do all we can to decrease caregiver burden and stress, which includes ongoing education about the disorder, encouraging caregivers to attend support groups or get individual counseling from a psychologist, home health care consultations, recommending antidepressant or anti-anxiety medication either through their family physician or under your care if they are also your patient, and encouraging reduction of

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**Public Perception of Alzheimer’s, continued**

about how patients with amnestic mild cognitive impairment can remain in this stage for four or five years before further cognitive decline, and that cognitive retraining, encouraging physical exercise, controlling risk factors for stroke, and using Aricept (in a small percentage of cases) can delay further progression to AD. Absolutely nothing was mentioned about the many currently available treatments for all stages of AD, which include the acetylcholinesterase inhibitors and the inhibition of glutamate toxicity (Namenda). This drug, in combination with the acetylcholinesterase inhibitor, helps slow the progression of the disease and delays nursing home placement, especially in the mild to moderate cases. Nothing was mentioned about cognitive rehabilitation and memory retraining, which can improve quality of life in many patients with mild to moderate Alzheimer’s. Nothing was mentioned about the earliest times when Alzheimer’s was mistaken for senile dementia, and that no treatment of any kind was available until, finally, in 1994, Cognex was introduced as the first acetylcholinesterase inhibitor available for treatment of AD and found to have some benefit in delaying progression of the disease.

After watching this series I came away with the feeling that nothing at all was available to treat Alzheimer’s currently, only that future research would give more hope. Many of my early stage patients and their caregivers and family members who attended the showings, as well as the general public in attendance, echoed my sentiments as well. My opinion, strongly supported by some colleagues, patients, caregivers and family members, is that when the Alzheimer’s Association is consulted by any media outlet, they should disseminate all pertinent information, whether positive or negative, about Alzheimer’s disease as it exits today, as well as what the future hopefully holds, rather than give the public the wrong idea about the disease. As neurologists, we ultimately bear the burden of correcting inadequate and “just plain wrong” information. I cannot be sure of the total viewership of HBO or Nightline, but in my view these productions are symptomatic of a greater problem. The public fear instilled by these two media productions can discourage people from seeking evaluation of memory complaints, and further discourage patients and the their families who are already dealing with the disease from continuing their current Alzheimer’s medications, and seeking other sources of help, such as cognitive rehabilitation, support groups, and daycare programs for loved ones.

If you have strong feelings as I do about this subject now or after viewing the HBO production, I encourage you to write to the Alzheimer’s Association and copy their Scientific Advisory Board as I
Alzheimer's risk factors, such as through increased exercise and aggressive treatment of hypertension, diabetes, high cholesterol, and smoking.

- Colleen E. Jackson was author of a paper entitled “Dementia Literacy: Public Understanding of Known Risk Factors in Dementia.” Her team studied 676 adults in an online survey. The mean age of the public was 50, and 24 percent were male. Eighty-seven percent were identified as well educated. The study found that there was a poor understanding of the relationship of dementia to a number of factors, including cardiovascular risks. Results showed that 61 percent of those surveyed stated there was no association of obesity or high blood pressure to dementia. Forty percent had no knowledge that physical exercise was protective for Alzheimer’s disease. Only 50 percent believed that Alzheimer’s disease reduces life span, and 95 percent believed that Alzheimer’s disease was not related to aging and not curable.

**Synthesis:** For practicing neurologists this message that tells us that a goodly portion of the public have insufficient knowledge of Alzheimer’s disease. I believe it is part of our duty as physicians to educate family members and older children about the risk factors that can worsen and be a contributing factor to the development of Alzheimer’s disease. Despite the increasing public attention to Alzheimer’s disease in the last 10 years, it is surprising that so many of the population have limited knowledge of this disorder. In my opinion, some of this lack of or misinformation on Alzheimer’s disease can be attributed to the media (see my comments in the callout box on p. 48).

*All abstracts and poster presentations are available in: The Journal of the Alzheimer’s Association; July 2009; 5(4)Supplement. They are also available online at: www.alzheimersanddementia.org/issues/contents (click the “next issue” arrow to view the supplement and articles).