

Treatments Suggested for Alzheimer's Disease and Related Disorders

Prepared by: Leilani Doty, PhD, Director, University of Florida Cognitive & Memory Disorder Clinics (MDC), Box 100236, McKnight Brain Institute, Gainesville, FL 32610-0236, Office (352)273-5555; Memory Disorder Clinic Appointments (352)265-8408. Partially supported by the Florida Department of Elder Affairs Alzheimer's Disease Initiative. (2008)

Purpose of Session: Treatments Suggested for Alzheimer's Disease and Related Disorders

The following session, Treatments Suggested for Alzheimer's Disease and Related Disorders, overviews some of the possible treatments that are recommended for people with a diagnosis of a fixable dementia versus cardiovascular dementia versus Alzheimer's disease or related progressive dementias.

[Note the definition of dementia as it is used here: Dementia is the decline of thinking abilities while the person is alert and awake to the point of interfering in daily tasks and interactions. The decline may involve memory, decision skills, communication, and/or other thinking skills. The decline may be progressive such as with Alzheimer's disease and related dementias.]

Identifying Treatable Causes of Memory Problems

While some memory and thinking problems may result from a progressive condition such as Alzheimer's disease, it is important to have a full medical evaluation at the first appearance of signs of memory or thinking problems (such as difficulty recalling correct words, counting money, adding the score of a game, or losing track of a conversation).

Medical Evaluation

When a person shows signs of short-term memory problems and/or thinking difficulties, a full medical evaluation is important. An early full medical exam may lead to finding a simple health problem that explains the change and that is easy to fix. For example, the doctor may find low levels of thyroid hormone, Vitamin B12 or other B Vitamins. Or the doctor may find high levels of blood pressure, blood sugar, or stress. Depression or anxiety may also lead to problems in memory or other thinking functions. Such changes in health which can lead to short-term memory and other thinking difficulties are fixable.

Memory problems may result from any medicines which are "anti-memory medicines", so called because they depress the production of acetylcholine, thus are anticholinergic (in other words, anti-acetylcholine). Acetylcholine, an important chemical in some areas of the brain, is essential for information to move from one brain cell to the next. Low levels of acetylcholine in certain parts of the brain result in poor short-term memory, difficulty recalling words when talking or writing, difficulties with thinking/mental functions, and difficulties doing tasks including self-care.

Included in anti-memory medicines are antihistamines (for example many allergy medicines), analgesics (painkillers), and other central nervous system depressants which may interfere with memory and other thinking functions. A physician, nurse, dentist, or pharmacist among the group of health professionals who can identify which medicines have an anti-memory effect. Taking less of these medicines or changing to a different medicine may result in improved thinking and memory functions.

Suggested Treatments for “Fixable” Dementias

The first approach to treating signs of a progressive dementia is to find treatable problems and to fix them. Some of these fixes include treating infections, managing pain, drinking enough water or fluids every day, eating healthy foods, sleeping well at night, and getting enough exercise (physical, emotional, spiritual, and brain exercise), all important for healthy memory and other brain function.

Changes in health leading to short-term memory and other thinking difficulties may benefit from simple treatments. In some cases daily thyroid medicine, regular vitamin B12 injections (or daily sublingual B12) are the answer. Better control of blood sugar, blood pressure, stress, or depression may help to improve memory (and other thinking) function. It may take some time to regain better memory if the health problems have been occurring for a long time, but at least fixing the health problem may stop immediate or further decline.

(Additional information and references are available at *Evaluating Memory Loss Early* on the website www.AlzOnline.net.)

Suggested Treatments for Dementias Resulting from Heart or Blood Circulation Conditions (Cardiovascular Dementias)

Changes in the health of one's heart or blood vessels can interfere with good, steady blood circulation to brain cells. Conditions such as an irregular, too fast or too slow heart beat can be the reason. If not well controlled, high blood pressure, diabetes, high bad (LDL) cholesterol, high triglycerides, or high homocysteine (leading to high amyloid levels in neurons which result in unhealthy neurons) may be the reason that good blood flow is not getting to brain cells.

Lifestyle changes such as a healthy diet (low in carbohydrates/starches and unhealthy fats), daily exercise, no tobacco use, limit of alcohol drinks, reducing stress, and following a doctor's recommendations about taking medicines may improve the health of the heart and blood flow. The doctor may recommend medicines that widen the blood vessels. Or the doctor may recommend medicine such as ergoloids to improve metabolism and blood flow in the brain.

Sometimes medicine is prescribed to help the heart beat to become regular and stronger. A pacemaker may be necessary for a heart with an irregular beat or for a heart that beats too slowly. With such treatments and changes for a healthier lifestyle, the rate of neuron decline slows down resulting in a slowing down of the decline in mental functions.

When appropriate, physicians will recommend medicines such as children's aspirin or aspirin 81 to decrease the tendency for blood cells to stick together. This medicine guards against clumps of blood cells getting stuck in tiny capillaries and causing strokes. Anti-inflammation medicines and similar neuroprotective medicines may be recommended. Sometimes anti-oxidant vitamins are suggested as possible ways to lower the levels of homocysteine, cholesterol, and/or triglycerides.

Possible Physician Suggestions

1. Good diet; water (10 -12 glasses a day unless physician does not allow)
2. Exercise: physical, emotional, spiritual, mental (brain exercise)
3. No chemical abuse; change medicine or dose or therapy for a chronic condition
4. No tobacco; limit drinks containing alcohol
5. Medicines or treatments to keep blood flow and heart healthy, for example aspirin and similar medicines
6. Homocysteine lowering medicines, neuroprotective medicine; antioxidant vitamins or foods; memory booster medicines (cholinergic medicines)

Suggested Treatments for Alzheimer's Disease

Though no medicines exist yet to cure or repair damage from Alzheimer's disease, several medicines are available to help keep a better balance of message-carrying chemicals in the brain. Some medicines work to boost brain function and others to protect the brain cells. It is important that these medicines be used as soon as the doctor indicates in order to offer protection and to help function in brain cells (the neurons).

The medicines that may boost brain function seem to make a noticeable difference in some people while other people (or their family members) notice little to no change. These medicines may improve short-term memory, understanding, talking, following a conversation, self-awareness, decision-making, and some other thinking functions. They also may help the person's ability with personal care tasks and other daily activities.

The neuroprotective medicines work to protect the actual brain cells in some way. There may be no noticeable difference in the functioning of the person but over time the decline may occur at a slower rate.

How the Doctor Chooses a Medicine

The doctor chooses the medicine to prescribe based on individual differences in the patient. Recommended medicines may depend on the ability of the patient to swallow the medicine, the side effects or sensitivity (including allergic reaction) to the medicine, and the ability of the family caregiver to keep up with the frequency of the dose. The cost of the medicine is also a factor.

The "Memory Booster" Medicines: Anticholinesterase Medicines

As mentioned before, acetylcholine is an important chemical in the brain to carry information from one brain cell to the next. Currently, there are three "memory booster" medicines which block cholinesterase from breaking down acetylcholine in the synapse. These are anticholinesterase medicines.

[Note: A fourth cholinesterase blocker tacrine/Cognex©, was the first of this type of medicine (essentially the first generation of this type of medicine) to receive approval by the Federal Drug Administration, but it's very strong side effects have discouraged the use of it in the U.S.A.]

Prescription “Memory Boosters”

A doctor will prescribe one of three following “memory booster” medicines (considered to be the second generation group):

1. **Donepezil, better known as Aricept©** blocks the enzyme cholinesterase so it will not break down acetylcholine in the synapse. Aricept is available as a pill.
2. **Rivastigmine, better known as Exelon©** blocks the enzyme cholinesterase so it will not break down acetylcholine in the synapse. (Exelon blocks two enzymes, acetylcholinesterase and butyrylcholinesterase, that break down acetylcholine with the goal of allowing more acetylcholine to stay in the synapse.) Exelon is available as a capsule, liquid or skin patch. Some researchers prefer Exelon for people who have Parkinson disease with progressive dementia.
3. **Galantamine, better known as Razadyne©**, formerly was called Reminyl. Galantamine not only has a cholinesterase blocker but also stimulates brain cells with nicotinic receptors to pump out more acetylcholine. (Galantamine also comes as Nivalin.) Razadyne is available as a pill or capsule.

Prescription Neuroprotective Medicine

More commonly known by the general public as **Namenda©, memantine** is prescribed along with one of the three, just mentioned above, cholinesterase blockers. Namenda has a different action. It interferes with the stimulating action of a chemical, glutamate, on the neurons. Glutamate controls the flow of chemicals such as calcium (important for new information to “stick” in the neuron) entering the neuron. Too much glutamate may occur in the neurons of people with Alzheimer’s disease. Some scientists think this heavy amount of glutamate may result in extra activity in the neuron which may wear out the neurons already weakened from the changes of Alzheimer’s disease. The effort of Namenda to decrease glutamate activity may offer protection to the neurons.

Summary

Critical to general health and especially brain health is a healthy lifestyles such as drinking plenty of water every day, good nutrition, daily exercise including physical, emotional, spiritual, and mental/brain exercise, avoiding tobacco use, limiting beverages containing alcohol, and avoiding medicines that are anti-cholinergic (such as antihistamines and some medicines for pain).

When there are signs of dementia, a full medical exam is essential in order to identify treatable/fixable health issues, such as an imbalance of thyroid or vitamins, dehydration, an infection, or a stressful lifestyle among other concerns. If the medical exam reveals untreated or inadequately treated cardiovascular conditions such as high blood pressure, irregular heart rate, or uncontrolled diabetes, then better management to stabilize these conditions may slow down the changes occurring in brain cells.

For people with a diagnosis of Alzheimer’s disease or a related dementia, a healthy lifestyle plus some medicines may improve function and slow down the decline. Three anti-cholinesterase medicines, **Aricept**®, **Exelon**®, and **Razadyne**® may boost memory and thinking function. In addition, taking a neuroprotective medicine, such as **Namenda**®, may protect the neurons from wearing out, thus helping to prolong their ability to function.

Additional information and references about healthy living to promote brain health are available at the programs listed in the following table on Resources. The web site www.AlzOnline.net also carries additional information in two brief articles, ***Evaluating Memory Loss Early*** and ***Mild Cognitive Impairment***.

RESOURCES
<p style="text-align: center;"><u>National Resources</u></p> <ol style="list-style-type: none">1. AlzOnline (866)260-2466 www.AlzOnline.net2. Alzheimer’s Association (800)272-3900 www.alz.org3. ElderLocator (800)677-1116 www.eldercare.gov <p style="text-align: center;"><u>Florida Resources: Florida Department of Elder Affairs (DOEA)</u></p> <ol style="list-style-type: none">1. Florida DOEA (850) 414-20002. Florida Elder Helpline (800) 963-5337