

## **The Herbal Approaches to Treating Memory Loss, Dementia, and Alzheimer's Disease**

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Dementia is a decline in mental functioning in which memory, thinking, judgement and the ability to concentrate are impaired. There also may be a change in personality. Dementia can develop suddenly when a severe injury, disease or toxin destroys brain cells, or it can develop slowly, especially in senior citizens. Most commonly, short-term memory loss and the reduction in learning ability is a response to atherosclerosis in seniors. This is not dementia. Dementia is a more serious decline in mental ability. For example, people with atherosclerosis may have an inability to recall details from an event, whereas individuals with dementia may forget the event entirely.

Dementia usually develops over time. Memory and the ability to recognize people, places and objects diminish over time. Usually, there are problems with word usage and abstract gradually.

The most common cause of dementia is Alzheimer's disease (AD). Currently, there are approximately 4 million people in the U.S. diagnosed with AD; half of those over 85 years of age have AD. Although the cause of AD is not known, genetics plays a role. Recent data suggests that those who take antioxidants in their diet, or who take anti-inflammatory medications, are less likely to suffer AD (*JAMA*, 287, 24: 3223-9, 2002).

In Alzheimer's disease, parts of the brain degenerate, destroying brain cells and reducing the response of the brain's chemical messengers. Abnormal plaques and proteins can be observed by autopsy. The first sign may be forgetting recent events, though sometimes it starts with depression, fear, anxiety or personality changes. Speech patterns may change. Over time, the individual may deteriorate to the point that social interaction is difficult.

The second most common cause of dementia is successive strokes, known medically as multi-infarct dementia. Although weakness or paralysis typically is not observed, these small strokes destroy brain tissue caused by interrupted blood supply, known as infarcts. Most people with multi-infarct dementia have high blood pressure and/or diabetes, which damage blood vessels in the brain. Typically, the dementia caused by small strokes may deteriorate or improve. If diabetes and hypertension can be appropriately controlled, the person may prevent future strokes and can sometimes partially recover.

Dementia may occur after a brain injury or cardiac arrest. For example, boxers often develop *dementia pugilistica* and may develop hydrocephalus, a brain fluid imbalance which also produces incontinence and walking difficulties. It is also found in approximately 20 percent of those who have Parkinson's disease, an infectious brain disease known as Creutzfeldt-Jakob disease, and AIDS. Dementia is also seen in Lewy body dementia and Picks's disease, two uncommon conditions similar to Alzheimer's. Depressed seniors may have pseudodementia. Typically, they have insomnia and loss of appetite, and complain about their memory loss, whereas people with dementia often deny there is memory loss.

Depending on the cause, dementia progresses at different rates for different people. Often, the first symptom is forgetfulness. Some people are able to hide their condition well. They may avoid activities such as balancing a checkbook, reading or working. They might forget to do important tasks like paying bills, turning off the light or stove, or have trouble distinguishing reality from fiction. For example, they can be conned or duped easily. One of our clients was convinced she had already won a million-dollar contest, when it was just an advertisement. In the most advanced cases, people become withdrawn and unable to control their behavior. They may have angry outbursts, mood swings, get lost even in familiar surroundings, or lose the ability to speak.

### **Diagnosis and Treatment**

Physicians diagnose dementia after questioning the patient and the family, taking into account the progression of the disease and the presence of other diseases. It is essential that the patient's medication be evaluated, since prescription drugs or drug interaction can be a causative factor. Other causes may be toxic exposure; thyroid imbalance; infections; nutrient deficiencies; or depression.

MRI and CT scans may rule out brain tumor, hydrocephalus or stroke. Unfortunately, at the present time, Alzheimer's disease can only be diagnosed by dissecting the brain during autopsy.

Drugs used for the treatment of Alzheimer's include tacrine and donepezil; ibuprofen and other anti-inflammatory drugs may slow its progression. Dementia caused by small strokes cannot be treated medically; however, treating co-existing conditions, such as hypertension and diabetes, can slow or stop the progression of symptoms. Drugs used to treat Parkinson's disease do not help dementia, and may in fact contribute to the problem. Similarly, there is no known biomedical treatment for dementia caused by AIDS or infectious disease. On a positive note, if depression is the cause, antidepressants and counseling may help. If dementia is caused by hydrocephalus, removing excess fluid by shunting may help. Antipsychotic drugs such as thiorazine or haloperidol may be prescribed if the patient has paranoia or hallucinations. They are typically not very effective at controlling agitation, and can have serious side-effects. Sleeping pills, anti-anxiety drugs, antidepressants and some cold remedies can worsen dementia.

Supportive measures can be undertaken to help those with dementia. For example, it is best for the person to stay in a familiar environment; changing locations, or even the furniture, can be disruptive. Establishing a regular routine provides stability. Hiding car keys, using identification bracelets and using detectors on home doors may help prevent an accident for people who wander. Have caregivers enlist the help of social agencies. Spouses and family members may have to come to terms that the relation who has dementia is not the same person. Scolding or criticizing people with dementia usually doesn't help, and may make things worse.

Planning is essential for people with dementia. Social service agencies may help provide nursing and other services to relieve stress on the family. Long-range planning may include social workers, lawyers and health professionals. In all cases, the sooner the treatment is underway, the better.

### **Herbal Treatments**

Although the scope of this article concerns herbs, supplements that may be helpful include antioxidants, fish oil and s-adenosyl methionine (SAMe). Although best known as a treatment for depression and chronic pain, laboratory research indicates SAMe has a positive effect on brain cells. It has been discovered that levels of this naturally occurring compound are lower in the cerebrospinal fluid of people with neurological complications and AD.

SAMe supports protein methylation which, if impaired, leads to brain deterioration. It also boosts the production of phosphatidylserine, a lipid important for mood and memory, and increases glutathione, which reduces inflammation. As stated earlier, inflammation is thought to contribute to the onset of AD, and may

play a role in other forms of dementia.

## TCM Formulas

Traditional Chinese medicine regards treating the kidneys as particularly important in aging disorders. The spleen is also important, as *qi* and blood decrease over time. Because the kidney and spleen control water in the body, if their function declines, dampness and phlegm will be produced. Lack of movement may cause *qi* and blood stagnation. In our experience, pharmaceuticals lead to yin deficiency, which in turn leads to yang depletion. Dementia; deafness; fearfulness; low back pain; and exhaustion with a weak pulse and pale tongue are typical signs of kidney essence deficiency. A balanced formula, such as the following (containing tang kuei [*dang gui*]; eucommia [*du zhong*]; polygonum [*he shou wu*]; astragalus root [*huang qi*]; ligustrum [*nu zhen zi*]; ginseng [*ren shen*]; astragalus seed [*sha yuan zi*]; cornus [*shan zhu yu*]; cooked rehmannia [*shu di huang*]; and cuscuta seed [*tu si zi*]), will help treat these imbalances. Back formulas (such as a formula that contains psoralea [*bu gu zhi*]; tang kuei tail [*dang gui wei*]; eucommia; cibotium [*gou ji*]; testudinis [*gui ban*]; carthamus [*hong hua*]; myrrh [*mo yao*]; cyathula [*niu xi*]; cistanches [*rou cong rong*]; cornus; cooked rehmannia; cuscuta seed; acanthopanax [*wu jia pi*]; and dipsacus [*xu duan*]) can be added if there is notable kidney yang deficiency and back pain is predominate. If there is edema, a rehmannia formula, consisting of eucommia; poria (*fu ling*); moutan (*mu dan pi*); cinnamon bark (*rou gui*); dioscorea (*shan yao*); cornus; cooked rehmannia; and alisma can be added.

While *qi* and blood stagnation must be treated, it is important to use tonics over time, especially for seniors. One modern Chinese herbal formula with added tonics that treats *qi* and blood stagnation, for example, is comprised of acorus rhizome (*chang pu*); salvia root (*dan shen*); tang kuei; eucommia; pueraria root (*ge gen*); lycium fruit (*gou qi zi*); polygonum; lonicera flower (*jin yin hua*); rosa laevigata (*jin ying zi*); ilex pubescentis (*mao dong qing*); cistanche; mulberry (*sang shen zi*); zizyphus (*suan zao ren*); schisandra (*wu wei zi*); and ginkgo nut (*yin xing*). The classical formula *gui pi tang* addresses *qi* and blood deficiency. It may be considered for depression; palpitations; and poor sleep with a pale tongue and thin pulse.

According to TCM theory, phlegm can produce symptoms such as disordered thinking; drooling; nausea; profuse sputum; somnolence; a stuck sensation in the throat (plum pit *qi*); a coated tongue; and a slippery pulse. The appropriate remedy is *wen dan tang*. For long-term treatment, the formula *liu jun zi tang* (made of poria; pinellia [*ban xia*]; ginseng; atractylodes [*bai zhu*]; red jujube dates [*da zao*]; citrus peel [*chen pi*]; licorice [*gan cao*]; and fresh ginger [*sheng jiang*]) can be considered to tonify the spleen, and a dampness

formula, composed of atractylodes; poria; cinnamon twigs (*gui zhi*); alisma (*ze xie*); and polyporus (*zhu ling*) can prevent phlegm buildup. If there are signs of heat with a rapid pulse and a red tongue, a coptis formula, made of white peony (*bai shao*); bupleurum (*chai hu*); plantago seed (*che qian zi*); lophatherum (*dan zhu ye*); tang kuei; phellodendron bark (*huang bai*); coptis (*huang lian*); scutellaria (*huang qin*); sophora flavescens (*ku shen*); forsythia (*lian qiao*); gentiana (*long dan cao*); clematis armandi (*mu tong*); fresh rehmannia (*sheng di huang*); alisma; anemarrhena (*zhi mu*); and gardenia (*zhi zi*) can be considered.

## **Ginkgo**

Ginkgo is the world's oldest living tree species. Ginkgo leaf extract has been the subject of over 50 double-blind trials for people with chronic cerebral arterial insufficiency and peripheral arterial insufficiency. It has been found to be helpful in the symptoms of cerebral vascular insufficiency including short-term memory loss and depression. Based on a review of the scientific literature, it appears that ginkgo extract helps reverse or delay the mental deterioration of early stage Alzheimer's. From a clinical perspective, it appears more successfully applied to cases of mental decline due to poor circulation and depression than treating AD. However, it should still be considered in cases of Alzheimer's, particularly the early stages, as it has numerous other benefits, including increasing circulation; antioxidant activity; enhancing the utilization of oxygen and glucose; and membrane stabilizing effects. These effects are most useful to the brain and nerve cells. Unlike other tissues, the brain constantly needs oxygen and glucose. If circulation to the brain is reduced, an unwanted chain of biochemical reactions is started, leading to cellular death. Ginkgo extract enhances oxygen utilization and increases the uptake of glucose to maintain brain balance. It promotes the nerve transmission rate, improves the synthesis of brain neurotransmitters, and normalizes acetylcholine receptors in the hippocampus, the area of the brain most affected by Alzheimer's disease (Pizzorno, Joseph, et al. *Textbook of Natural Medicine*. Edinburg, NY: Churchill Livingstone, 1999, p. 752-3).

Other benefits to seniors include treatment of peripheral arterial disease, vertigo, tinnitus, and antidepressant effects. The modern Chinese formula containing acorus and ginkgo nut mentioned above contains 24% ginkgo flavonoids with supportive herbs such as salvia. Nine tablets per day of the formula will supply 180 mg of ginkgo extract, which is comparable to the dosage used in clinical studies.

## **Salvia**

Salvia, also known as *dan shen* or red sage root, has become an important herb in modern Chinese medicine. In addition to its use in TCM prescriptions for pain and stagnant blood, modern scientific experiments have confirmed that salvia improves microcirculation; dilates blood vessels; improves circulation; and slows blood clotting time (Huang, Kee Chang. *The Pharmacology of Chinese Herbs*, 2nd ed. CRC Press, 1999, p. 94). Salvia is traditionally used for its calming effects; thus, it could be considered as part of a formula for geriatric patients to increase circulation with or without mental agitation and depression. It is said to interact with the blood thinning medication cumadin (warfarin). Salvia is found with ginkgo extract in the abovementioned formula.

### **Huperzine A**

It is estimated that over 100,000 people have been treated with huperzine A in China, where it is used as a treatment for AD and other kinds of dementia. In addition to being less toxic than current drugs used to treat Alzheimer's disease, it appears more effective in a number of areas.

Huperzine A is a compound that can be manufactured in the lab or extracted from club moss extract (*huperzia serrata*; *qian ceng ta*), and has been traditionally used to treat fever and inflammation. Research carried out at the Shanghai Institute of Materia Medica found that huperzine A improved memory significantly better than tacrine or the drug #2020 (*Neuroreport* 1996, Dec. 20; 8 (1): 97-101).

Fifty patients with AD were administered 200 mcg of huperzine A BID for 8 weeks. Twenty-nine patients showed improvements in memory, cognitive abilities and behavioral functions on the basis of the Wechsler memory scale, Hasegawa dementia scale, and other internationally accepted standards (*Chung Kuo Yao Li Hsueh Pao* 1995, Sept: 116 (5) 391-395).

Huperzine A may reduce injury to cells from strokes, epilepsy and other disorders. It is being clinically used for treatment of myasthenia gravis in China. It is also being studied in Israel for its ability to be used prophylactically against nerve gas poisoning. Naturally extracted huperzine A, vinpocetine, and rosemary are combined in vinpurazine.<sup>TM</sup> Recommended dosage is 1-4 tablets daily.

### **Conclusion**

Herbs may play a promising role in the early treatment of Alzheimer's and other conditions involving poor memory and dementia. One of the chief benefits is they have low toxicity compared with pharmaceutical agents. There is no reason botanicals could not be used adjunctively with drugs, or other complementary

approaches such as SAME, fish oil and antioxidant vitamins. A review of the literature indicates that the sooner the treatment is begun, the better the outcome. Therefore, if clients have family members with a history of Alzheimer's disease, or other states involving poor memory, they may start taking these remedies prior to the onset of symptoms to delay or possibly prevent the advent of symptoms. The acorus/ginkgo formula mentioned above (with salvia and ginkgo) and vinpurazine with naturally extracted huperzine A are two promising long-term therapies for people suffering from memory loss, dementia and Alzheimer's disease.

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