

Multi-Infarct Dementia

Fact Sheet

Serious forgetfulness, mood swings, and other behavioral changes are **not** a normal part of aging. They may be caused by poor diet, lack of sleep, or too many medicines, for example. Feelings of loneliness, boredom, or depression also can cause forgetfulness. These problems are serious and should be treated. Often they can be reversed.

Sometimes, however, mental changes are caused by diseases that permanently damage brain cells. The term dementia describes a medical condition that is caused by changes in the normal activity of very sensitive brain cells. These changes in the way the brain works can affect memory, speech, and the ability to carry out daily activities.

Alzheimer's disease is the most common cause of dementia in older people (see box). The second most common cause of dementia in older adults is vascular dementia, which affects the blood vessels in the brain.

Multi-infarct dementia is the most common form of vascular dementia,

What is Alzheimer's disease?

Alzheimer's disease (AD) affects approximately 4 million people in the U.S. Abnormal proteins collect in the brain and appear to cause loss of nerve cells in the areas vital to memory and thinking.

Alzheimer's disease develops slowly. At first, people with AD may have trouble remembering recent events, or the names of familiar people or things. Skills are lost continuously and gradually, though some people decline faster than others. As the disease goes on, symptoms become more easily noticed and serious enough to cause people with AD or their family members to seek medical help.



Alzheimer's Disease Education &
Referral (ADEAR) Center

A Service of the National Institute on Aging

and accounts for 10-20% of all cases of progressive, or gradually worsening, dementia. It usually affects people between the ages of 60-75, and is more likely to occur in men than women.

Multi-infarct dementia is caused by a series of strokes that disrupt blood flow and damage or destroy brain tissue. A stroke occurs when blood cannot get to part of the brain. Strokes can be caused when a blood clot or fatty deposit (called plaque) blocks the vessels that supply blood to the brain. A stroke also can happen when a blood vessel in the brain bursts.

Some of the main causes of strokes are:

- untreated high blood pressure (hypertension)
- diabetes
- high cholesterol
- heart disease

Of these, the most important risk factor for multi-infarct dementia is high blood pressure.

Because strokes occur suddenly, loss of thinking and remembering skills –

the symptoms of dementia – also occurs quickly and often in a step-wise pattern. People with multi-infarct dementia may even appear to improve for short periods of time, then decline again after having more strokes.

Symptoms

Sudden onset of any of the following symptoms may be a sign of multi-infarct dementia:

- confusion and problems with recent memory
- wandering or getting lost in familiar places
- moving with rapid, shuffling steps
- loss of bladder or bowel control
- laughing or crying inappropriately
- difficulty following instructions
- problems handling money

Multi-infarct dementia is often the result of a series of small strokes. Some of these small strokes produce no obvious symptoms and are noticed only on brain imaging studies, so they are sometimes called “silent strokes.” A person may have several small strokes before noticing serious changes in memory or other signs of multi-infarct dementia.

Transient ischemic attacks, or TIAs, are caused by a temporary blockage of blood flow. Symptoms of TIAs are similar to symptoms of stroke and include mild weakness in an arm or leg, slurred speech, and dizziness. Symptoms generally do not last for more than 20 minutes. A recent history of TIAs greatly increases a person's chance of suffering permanent brain damage from a stroke. Prompt medical attention is required to determine what may be causing the blockage in blood flow and to start proper treatment (such as aspirin or warfarin).

If you believe someone is having a stroke – if a person experiences sudden weakness or numbness on one or both sides of the body, or difficulty speaking, seeing, or walking – call 911 immediately. If the physician believes the symptoms are caused by a blocked blood vessel, treatment with a “clot buster,” such as t-PA (tissue plasminogen activator), within 3 hours can reopen the vessel and may reduce the severity of the stroke.

Diagnosis

People who show signs of dementia and who have a history of strokes should be evaluated for possible multi-infarct dementia. The doctor usually will ask the patient and the family about the person's diet, medications, sleep patterns, personal habits, past strokes, and other risk factors (such as high blood pressure, diabetes, high cholesterol, and heart disease). The doctor also may ask about recent illnesses or stressful events, like the death of someone close or problems at home or work, which may account for the symptoms. To look for signs of stroke, the doctor will check for weakness or numbness in the arms and legs, difficulty with speech, or dizziness. To check for other health problems that could cause symptoms of dementia, the doctor may order office or laboratory tests. These tests may include a blood pressure reading, an electroencephalogram (EEG), a test of thyroid function, or blood tests.

The doctor also may ask for x-rays or special tests such as a computerized tomography (CT) scan or a magnetic resonance imaging (MRI) scan. Both

CT scans and MRI scans take pictures of sections of the brain. The pictures are displayed on a computer screen to allow the doctor to see inside the brain and check for signs of stroke, tumors, or other sources of brain injury. Specialists called radiologists and neurologists interpret these scans. In addition, the doctor may send the patient to a psychologist or psychiatrist to assess reasoning, learning ability, memory, and attention span.

Sometimes multi-infarct dementia is difficult to distinguish from AD because their symptoms can be very similar. It is possible for a person to have both diseases, making it hard for the doctor to diagnose either.

Treatment

While no treatment can reverse brain damage that has already been caused by a stroke, treatment to prevent further strokes is very important. For example, high blood pressure, the primary risk factor for multi-infarct dementia, and diabetes are treatable. To prevent more strokes, doctors may prescribe medicines to control high blood pressure, high cholesterol, heart

disease, and diabetes. They will counsel patients about good health habits such as exercising, avoiding smoking and drinking alcohol, and eating a low-fat diet.

To reduce symptoms of dementia, doctors may change or stop medications that can cause confusion, such as sedatives, antihistamines, strong painkillers, and other medications. Some patients also may have to be treated for additional medical conditions that can increase confusion, such as heart failure, thyroid disorders, anemia, or infections.

Doctors sometimes prescribe aspirin, warfarin, or other drugs to prevent clots from forming in small blood vessels. Medications also can be prescribed to relieve restlessness or depression or to help patients sleep better.

To improve blood flow or remove blockages in blood vessels, doctors may recommend surgical procedures, such as carotid endarterectomy, angioplasty, or stenting. Studies are under way to see how well these

treatments work for patients with multi-infarct dementia. Scientists are also studying drugs that can improve blood flow to the brain, such as anti-platelet and anti-coagulant medications; drugs to treat symptoms of dementia, including Alzheimer's disease medications; as well as drugs to reduce the risk of TIAs and stroke, such as cholesterol-lowering statins and blood pressure medications.

Helping Someone With Multi-Infarct Dementia

Family members and friends can help someone with multi-infarct dementia cope with mental and physical problems. They can encourage individuals to maintain their daily routines and regular social and physical activities. By talking with them about events and daily experiences, family members can help their loved ones use their mental abilities as much as possible. Some families find it helpful to use reminders such as lists, alarm clocks, and calendars to help the patient remember important times and dates.

A person with multi-infarct dementia should see their primary care

doctor regularly. Health problems such as high blood pressure, diabetes, high cholesterol, and heart disease should be carefully monitored. If a person has additional medical conditions, such as depression, mental health experts may be consulted as well.

Help for home caregivers is available from a variety of sources, including nurses, family doctors, social workers, and physical and occupational therapists. Home health care and respite or neighborhood day care services can provide much-needed relief to caregivers. Support groups offer emotional support for family members caring for a person with dementia. A State or local health department, a local hospital, or the patient's doctor may be able to provide telephone numbers for such services.

For More Information

The organizations listed below offer more information about some of the topics mentioned in this fact sheet.

- **Alzheimer's Association**

A free information packet about multi-infarct dementia and information about

support groups for families are available from:

225 North Michigan Avenue
Suite 1700
Chicago, Illinois 60601
1-800-272-3900
www.alz.org
e-mail: info@alz.org

- **Alzheimer's Disease Education and Referral (ADEAR) Center**

The ADEAR Center is a service of the National Institute on Aging, funded by the Federal Government. It offers information and publications on diagnosis, treatment, patient care, caregiver needs, long-term care, education and training, and research related to AD and dementia. Staff answer telephone and written requests and make referrals to local and national resources. Additional copies of this fact sheet, the *Alzheimer's Disease Fact Sheet*, and single copies of the National Institute on Aging Age Pages, *Stroke: Prevention and Treatment*, *Forgetfulness: It's Not Always What You Think*,

and *Depression: A Serious But Treatable Illness* are available by contacting:

P.O. Box 8250
Silver Spring, MD 20907-8250
1-800-438-4380
www.alzheimers.org
e-mail: adear@alzheimers.org

- **American Stroke Association**
(a division of the American Heart Association)

Information about stroke and recovery, as well as related research, programs, and events is available from:

7272 Greenville Avenue
Dallas, TX 75231
1-888-4-STROKE (478-7653)
www.strokeassociation.org

- **Eldercare Locator**
Information about services and resources in your area, such as adult day care programs, transportation, and meal services, is available from:

1-800-677-1116
www.eldercare.gov
e-mail: eldercare_locator@aoa.gov

- **National Diabetes Information Clearinghouse**

Information about controlling diabetes is available from:

1 Information Way
Bethesda, MD 20892-3560
(please use full, 9-digit zip code)
1-800-860-8747
www.niddk.nih.gov/health/diabetes/
ndic.htm
e-mail: ndic@info.niddk.nih.gov

- **National Heart, Lung, and Blood Health Information Center**

Information about preventing stroke, including information about risk factors such as high blood pressure, high cholesterol, heart disease, and smoking, is available from:

P.O. Box 30105
Bethesda, MD 20824-0105
1-800-575-9355
www.nhlbi.nih.gov
e-mail:
nhlbiinfo@rover.nhlbi.nih.gov

- **National Institute of Neurological Disorders and Stroke**

Information about stroke and current research on stroke-related conditions is available from:

P.O. Box 5801
Bethesda, MD 20824
1-800-352-9424
www.ninds.nih.gov

- **National Stroke Association**

Information about stroke and support for stroke survivors and their families is available from:

9707 E. Easter Lane
Englewood, CO 80112
1-800-STROKES (787-6537)
www.stroke.org



U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
Public Health Service
National Institutes of Health
National Institute on Aging

NIH Publication No. 02-3433

July 2003