

Dementia is a term that describes difficulty with daily functioning due to a decline in thinking abilities. Vascular dementia (VaD) is the second most common form of dementia after Alzheimer's disease.

VaD arises from conditions that affect the health and function of blood vessels that supply oxygen and nutrients to the brain. These conditions include high blood pressure, diabetes, and obesity. Over time, these risk factors can lead to stiffening and inflammation in the brain's blood vessels, accumulation of sticky deposits inside the blood vessel, and small strokes. This collection of conditions is known as cerebrovascular disease. Cerebrovascular disease can lead to cell death in parts of the brain fed by affected vessels. Brain cell death leads to changes in cognition and, sometimes, to dementia.

It is possible to have VaD and Alzheimer's disease at the same time. About 10% of dementia cases are due to pure VaD. Another 15% are due to a mixture of VaD and Alzheimer's disease.

Symptoms

Symptoms of VaD vary depending on the extent of blood vessel damage and the area of the brain affected. Abrupt changes in thinking related to a major stroke can include confusion, disorientation, and difficulty speaking or understanding speech. If

these symptoms do not improve with time and treatment, a person may be diagnosed with VaD due to a stroke.

More typically, VaD appears as gradual changes in thinking abilities over months or years. Problems with thinking include difficulty with memory, attention, mental speed, reasoning, and judgment. These changes can start slowly and worsen in stages if the person has a series of small strokes.

In addition to thinking problems, individuals with VaD may also experience changes in their mood, behavior, and relationships. Depression and anxiety, or loss of interest and motivation (apathy), are also common in individuals with VaD.

Risk Factors

Risk factors for VaD include:

- High blood pressure
- High cholesterol
- Diabetes mellitus
- Obesity
- Heart disease
- Congestive heart failure
- Coronary artery bypass grafting
- Obstructive sleep apnea
- Transient ischemic attacks
- Stroke

Some additional risk factors that can make an individual more susceptible to VaD are cigarette smoking, sedentary lifestyle, a diet high in fat and sodium, and old age.

Common Diagnostic Tests

A diagnosis of VaD usually begins with an appointment to see a neurologist. The neurologist will ask for detailed information about current symptoms, prior functioning, and other health conditions. Also, an MRI (an x-ray like picture or scan) of the brain and neuropsychological testing are often done.

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An MRI can show structural changes in the brain that may support a particular diagnosis. However, changes in brain cells are invisible on an MRI and require other tests.

Neuropsychological testing relies on pencil and paper or computerized tests to look at the specific ways in which thinking is impaired. When interpreting these test results, the doctor looks for certain patterns of performance across different areas of thinking. These patterns indicate which parts of the brain are most likely affected. Specifically, neuropsychological testing shows which brain functions are strong and which ones are weaker and in need of rehabilitation. These changes are often not visible on an MRI.

Treatment

There is currently no cure for VaD. However, doctors often prescribe medications to control a person's vascular risk factors. These medications may lower blood pressure, reduce cholesterol, lower blood sugar, or prevent blood clots. Exercising and eating a heart-healthy diet low in saturated fat, like the Mediterranean diet, may help keep the vascular system healthy. If you smoke, we recommend that you quit.

Suggestions for patients

- Eat a heart-healthy diet with plenty of fruits, vegetables, and lean proteins
- Maintain a healthy weight
- Get regular physical exercise
- Quit smoking
- Take all medications as prescribed
- Use a pill organizer and reminders to reduce missed or skipped doses
- Stay mentally active through regular socializing and participation in enjoyable activities such as hobbies, volunteer work, and new learning
- Reduce your stress
- Use a CPAP (or other prescribed device) regularly if you have been diagnosed with sleep apnea
- Ask for your health care provider's notes in writing

Suggestions for caregivers

- Find fun ways to remain active with your loved one
- Explore recipes and meal plans that are engaging and healthy
- Stick to a routine
- Use reminders including calendars, lists, or whiteboards
- Have important conversations in a quiet room free of distractions
- When possible, attend important appointments and meetings to aid with recall

Resources

Area Agency on Aging

www.aaaphx.org

The Phoenix Area Agency on Aging coordinates services to improve the quality of life of Maricopa County residents. They offer a wide range of services including case managed services to adults over 60, a 24-hour senior help line, and respite services for caregivers.

Family Caregiver Alliance

www.caregiver.org/vascular-dementia

The Family Caregiver Alliance is a nonprofit group that advocates for caregivers by providing education and resources specific to caregivers' needs. They offer support, tailored information, and tools to manage the complex demands of caregiving.

Alzheimer's Association

www.alz.org

The Alzheimer's Association provides assistance and resources for individuals with a wide range of cognitive and functional impairments stemming from dementia.

The American Stroke Association

www.stroke.org

The American Stroke Association is a division of the American Heart Association that works to prevent and treat stroke through research, education, and public health policies. Their website contains a great deal of information on stroke recovery and the cognitive effects of stroke. Use their search function to look for more information on vascular dementia.