

What Do You Need to Know?

- It is not the same as Alzheimer's disease
- It has different causes and there are different types
- The risk of progression can be reduced
- It can look very different for different people
- Medical management will be different than for Alzheimer's disease

What Is It?

- Vascular dementia is not a single disease.
- There are many different types.
- There are many things you can do to reduce your risk of developing it.
- Early detection and diagnosis combined with careful monitoring and treatment are critical for making a difference in progression.

Old words for it

- Senile dementia
- Hardening of the arteries
- Arteriosclerosis
- Multi-infarct dementia

Contributing Causes

- Strokes
- Hypertension that is not controlled
- Hypotension that is not well controlled
- Heart disease – CHF, s/p MI, AF
- Peripheral vascular disease
- Atherosclerosis
- Diabetes and Obesity
- Loss of blood flow to the brain – (can happen during heart attacks, head injuries, or during surgical procedures when blood pressure drops too low for a length of time or the heart stops and is not pumping blood to get oxygen to the brain)
- Smoking
- Alcohol or drug overuse
- Sleep apnea
- COPD
- Genetic tendencies in the family

How Common Is It?

- It is either the second most common or the third most common, depending on the source of the information. It is more common in areas where the rate of cardiovascular (heart and blood vessel) disease and adult onset diabetes (sugar problems) are higher.
- Men and women are at an approximately equal risk to develop VaD for different reasons.
- The older you are the higher your risk is.
- Some forms hit early 30-40 year olds, others hit later 50-80 year olds

How Does It Progress?

- It tends to progress in a 'step-wise' manner. This means it changes fairly suddenly at times. It is less predictable in its progression. People may stay the same for a long time (be on a plateau) then have a rapid change, lose skills, and then stay at that level for a good while.
- The areas of damage vary greatly depending on the specific type of vascular dementia the person has AND the areas of the brain losing oxygen and nourishment. Because the damage only happens to the specific parts of the brain not supplied with oxygen & nourishment, the symptoms for each person and after each event will may be different.

What Basically is Happening?

In this type of dementia, the nerve cells in the brain are healthy until they do not receive oxygen and nourishment from the blood vessels that supply them. There are three major reasons this can happen, bleeding out, blocking off, or limiting the flow of blood. The brain cells not getting nourishment die, unless other blood vessels nearby take over the task. The specific symptoms the person will show, will depend on what structures or parts of the brain are being injured with the change of blood flow. With some of these events, the person will also show an improvement after a few days, when the swelling and dead blood cells are removed by the 'clean-up crew' in the brain, but the person typically does not recover everything they had before.

- One cause is a 'blow out' (hemorrhagic event). In this case, the blood vessel ruptures and blood pours out. The nerve cells become damaged by the pressure from the blood and they die because they are not getting nourishment. It can be a slow 'bleed' that is hard to notice immediately, or a rapid 'bleed' following a blow to the head, fall, or accident.
- A second cause is a blockage in the blood vessel (emboli, or thrombus). In this case, the blood vessel is clogged and the oxygen and nourishment can't get through, leaving the nerve cells on the far side of the blocked area, starving and without oxygen.

What Basically is Happening? (cont'd)

- The third common cause of the damage has to do with partial blockage of blood vessels (ischemia). This typically involves the smallest vessels in the brain. Damage to these vessels is primarily due to build of plaque inside as well as inflammation and irritation possibly caused by high blood pressure, problems with sugar processing, or severe drops in blood pressure that result in very limited blood flow to the brain. In this situation there are short periods of time when flow is greatly limited or impaired, but not actually totally stopped. This causes the cells to starve and malfunction, but not always die. Therefore, symptoms may come and go and behavior & alertness may change significantly over short periods of time. Possible situations might include: heart attacks, hyperthermia (heat exposure), hypothermia (cold exposure), partial drowning, low sugar or high sugar episodes (hypoglycemia or diabetic episode), TIAs ('mini-stroke'), or other times in which the blood supply to the brain is cut off or reduced.

Types of Vascular dementia identified so far

- Mild vascular cognitive impairment – partially clogged vessels – slow
- Multi-infarct dementia
- Vascular dementia due to one damaged area – 'stroke-like'
- Vascular dementia due to lacunar infarcts (damage deep in the brain)
- Vascular dementia due to hemorrhagic infarcts (bleeds in the brain – ruptured blood vessels) – worsening over hours-days
- Binswanger disease – sub-cortical vascular dementia
- Mixed dementia (vascular damage plus Alzheimer's disease)

What are the Common Symptoms?

VARY WIDELY, depending on the areas of the brain losing blood flow and being damaged by the vascular damage. Typical areas include: movement challenges, alertness and awareness challenges, thinking challenges, emotional and personality challenges, and overall performance challenges:

Thinking challenge

- Mild loss of 'thinking or judgment skills' compared to educational level and past performance
- Memory challenges tend to include both difficulties with forming new memories (learning new things) but also remembering older events correctly (this is different than with Alzheimer's disease)
- Disorientation to current situation – not able to appreciate the difficulties they are having (lack of insight)
- Difficulty speaking, finding words, or understanding when someone else talks, or may not talk as much or doesn't follow a conversation well

Emotional challenges

- Change in typical personality and behaviors – just not 'who' they were
- Apathy (not wanting to do anything), inability to 'get going', sitting around all the time, more sleeping or resting, less activity, more refusals to 'do anything'
- Severe depression may set in – it may look sad or angry – may include changes in eating, sleeping, self-care, enjoyment, mood, and talk of 'ending it all'

Emotional Challenges (cont'd)

- Mood swings and lability (rapid changes in mood and feelings without a clear cause)
- Delusional thinking (has fantasies about what others are doing or thinking – these things are not true)

Movement or Performance challenges -

- Problems using their hands and tools to do familiar tasks – awkward or clumsy OR using the item incorrectly (trying to shave with a toothbrush, trying to fit the car keys in the door knob...) (apraxia)
- Problems with balance and coordination in walking may be noted
- Inability to move or weakness in arms or legs (tends to be one sided)
- Problems finding their way around – getting lost and confused, sometimes even in familiar settings
- Problems keeping track of time – mis-remembering appointments and mis-judging how long something takes
- Problems swallowing safely
- Slowed movement or performance on typical activities – takes a ‘long time to do something’
- Reflexes may be very strong and may interfere with normal function
- Urinary incontinence may occur early and fairly suddenly

What Should Be Done Medically?

- Treat the underlying causes:
- Control hypertension (diet, exercise, and drugs)
- Reduce stroke risks (diet, exercise, habit changes, drugs)
- MD may consider anti-platelet therapy (such as aspirin, Ticlid, Plavix)
- Control diabetes with diet, exercise, weight control, and drugs if needed
- MD may suggest meds to increase blood flow to the brain (hemo-rheologic drug – Trental)
- Treat depression
- Work to stop smoking
- Work to control cholesterol (diet, exercise, and possibly drugs)
- MD will consider use of cholinesterase inhibitors to help with symptoms (Aricept, Exelon, Razadyne)
- Check-in every 6 months to monitor health and progress in controlling contributing factors

What Should Be Done Routinely?

- Complete durable healthcare and financial power of attorney decisions and paperwork
- Complete advance directive planning and financial planning

What Should Be Done Routinely? (cont'd)

- Develop and use daily routines that include:
 - Exercise – aerobic, strengthening, coordination, and flexibility
 - Self-care – may need some supervision or help
 - Leisure activities – may need some modifications for enjoyment and abilities
 - Work or productive activities – may need safety supervision, help, or set-up
 - Rest times – breaks in the action
 - Time away for the care partner
 - Time out of the home – with friends or neighbors
- Check out Safety issues with skilled health professionals (OTs or PTs) – modify the home for specific safety concerns that were identified
- Check out the need for rehabilitation for specific events or losses (OT, PT, Speech)
- Continue participating in familiar activities and groups – consider providing some education and training for others to help them in helping the person feel included and successful
- Look at care options and locations for possibilities as needs and abilities change
- Get counseling and support if mood and personality changes are affecting relationships and roles in the family and community
- Seek out volunteer and community opportunities for activity and engagement

Resource List:

UK – NHS – Choices - <http://www.nhs.uk/Conditions/vascular-dementia/Pages/Treatment.aspx>

Mayo Clinic - <http://www.mayoclinic.org/diseases-conditions/vascular-dementia/basics/definition/con-20029330>

Alzheimers Society Canada - <http://www.alzheimer.ca/en/About-dementia/Dementias/Vascular-Dementia?gclid=Cj0KEQjwqtjGBRD8yfi9h42H9YUBEiQAmki5Oi59Wla6BB5hHQmr-irTdBxUAFcm23PhqAY7GIfIGU0aAkwi8P8HAQ>

Risk Factors for VaD - http://stroke.ahajournals.org/content/35/11_suppl_1/2620.short
and
<http://stroke.ahajournals.org/content/31/7/1487.short>

Medication Options - <http://www.neurology.org/content/61/4/479.short>

Importance of Understanding VaD - <http://europepmc.org/abstract/med/8969867>

UCSF Memory Center - <http://memory.ucsf.edu/education/diseases/vascular>