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KWORDS from KWORCC

Strokes!

What is a stroke?

A stroke occurs when blood supply to part of the brain is disrupted, causing brain cells to die. When blood flow to the brain is impaired, oxygen and glucose cannot be delivered to the brain. Blood flow can be compromised by a variety of mechanisms.

What are the risk factors for stroke?

Overall, the most common risk factors for stroke are:

- high blood pressure,
- high cholesterol,
- smoking,
- diabetes and
- increasing age.

Heart rhythm disturbances like atrial fibrillation, patent foramen ovale, and heart valve disease can also be the cause.

When strokes occur in younger individuals (less than 50 years old), less common risk factors are considered including illicit drugs, such as cocaine or amphetamines, ruptured aneurysms, and inherited (genetic) predispositions to blood clotting.

An example of a genetic predisposition to stroke occurs in a rare condition called homocystinuria, in which there are excessive levels of the chemical homocystine in the body. Scientists are trying to determine whether the non-hereditary occurrence of high levels of homocystine at any age can predispose to stroke.

What causes a stroke?

Blockage of an artery

The blockage of an artery in the brain by a clot (thrombosis) is the most common cause of a stroke. The part of the brain that is supplied by the clotted blood vessel is then deprived of blood and oxygen. As a result of the deprived blood and oxygen, the cells of that part of the brain die. Typically, a clot forms in a small blood vessel within the brain that has been previously narrowed due to the above mentioned risk factors.

Embolic stroke

Another type of stroke may occur when a blood clot or a piece of atherosclerotic plaque (cholesterol and calcium deposits on the wall of the inside of the heart or artery) breaks loose, travels through open arteries, and lodges in an artery of the brain. When this happens, the flow of oxygen-rich blood to the brain is blocked and a stroke occurs. This type of stroke is referred to as an embolic stroke. For example, a blood clot might originally form in the heart chamber as a result of an irregular heart rhythm, such as occurs in atrial fibrillation. Usually, these clots remain attached to the inner lining of the heart, but occasionally they can break off, travel through the blood stream, form a plug (embolism) in a brain artery, and cause a stroke. An embolism can also originate in a large artery (for example, the carotid artery, a major artery in the neck that supplies blood to the brain) and then travel downstream to clog a small artery within the brain.

Cerebral hemorrhage

A cerebral hemorrhage occurs when a blood vessel in the brain ruptures and bleeds into the surrounding brain tissue. A cerebral hemorrhage (bleeding in the brain) can cause a stroke by depriving blood and oxygen to parts of the brain. Blood is also very irritating to the brain and can cause swelling of brain tissue (cerebral edema). Edema and the accumulation of blood from a cerebral hemorrhage increases pressure within the skull and causes further damage by squeezing the brain against the bony skull.

Subarachnoid hemorrhage

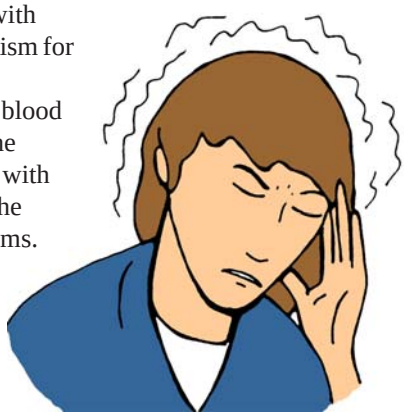
In a subarachnoid hemorrhage, blood accumulates in the space beneath the arachnoid membrane that lines the brain. The blood originates from an abnormal blood vessel that leaks or ruptures. Often this is from an aneurysm (an abnormal ballooning out of the wall of the vessel). Subarachnoid hemorrhages usually cause a sudden, severe headache and stiff neck. If not recognized and treated, major neurological consequences, such as coma, and brain death will occur.

Vasculitis

Another rare cause of stroke is vasculitis, a condition in which the blood vessels become inflamed.

Migraine headache

There appears to be a very slight increased occurrence of stroke in people with migraine headache. The mechanism for migraine or vascular headaches includes narrowing of the brain blood vessels. Some migraine headache episodes can even mimic stroke with loss of function of one side of the body or vision or speech problems. Usually, the symptoms resolve as the headache resolves.



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CLAIMS REPORTING

For assistance with on-the-job injuries, contact IMA at 1-800-333-8913. Questions on claims should be directed to Susan May. All correspondence, bills or other documentation for your claims can be mailed to Susan's attention at: 8200 E 32nd Street North, Wichita, Kansas 67226.

TRUSTEES

What are stroke symptoms?

Small strokes may not cause any symptoms, but can still damage brain tissue. These strokes are referred to as silent strokes. The symptoms that follow a stroke depend on the area of the brain that has been affected and the amount of brain tissue damage. According to The U.S. National Institute of Neurological Disorders and Stroke (NINDS), these are the five major signs of stroke:

1. Sudden numbness or weakness of the face, arm or leg, especially on one side of the body. The loss of voluntary movement and/or sensation may be complete or partial. There may also be an associated tingling sensation in the affected area.
2. Sudden confusion or trouble speaking or understanding. Sometimes weakness in the muscles of the face can cause drooling.
3. Sudden trouble seeing in one or both eyes
4. Sudden trouble walking, dizziness, loss of balance or coordination
5. Sudden, severe headache with no known cause

Cincinnati Prehospital Stroke Scale (CPSS)

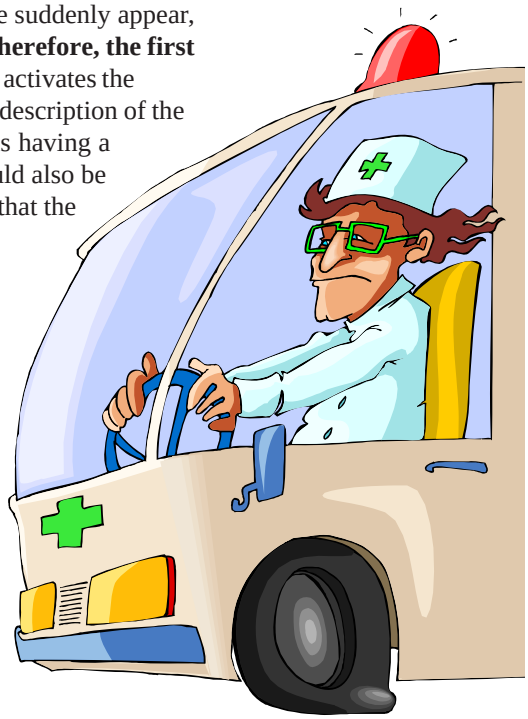
According to a study by the University of North Carolina, three commands may be used to assess whether a person may be experiencing a stroke. Lay persons can command a potential stroke victim to:

1. Smile
2. Raise both arms
3. Speak a simple sentence

The three commands, known as the Cincinnati Prehospital Stroke Scale (CPSS), are used by health professionals as a simple first step in the assessment process for signs of stroke.

What should be done if you suspect you or someone else is having a stroke?

If any of the symptoms mentioned above suddenly appear, emergency medical attention should be sought. **Therefore, the first action should be to call 911** (or whatever number activates the emergency medical response in your area) with a description of the situation, noting that you suspect the individual is having a stroke. The family doctor and/or neurologist should also be contacted. However, the first priority is ensuring that the ambulance arrives as soon as possible.



- The affected person should lie flat to promote an optimal blood flow to the brain.
- If drowsiness, unresponsiveness, or nausea are present, the person should be placed in the rescue position on their side to prevent choking should vomiting occur.
- Although aspirin plays a major role in stroke prevention (see below), once the symptoms of a stroke begin, it is generally recommended that additional aspirin not be taken until the patient receives medical attention. If stroke is of the bleeding type, aspirin could theoretically make matters worse.

What is a transient ischemic attack (TIA)?

A transient ischemic attack (TIA) is a short-lived episode (less than 24 hours) of temporary impairment to the brain that is caused by a loss of blood supply. A TIA causes a loss of function in the area of the body that is controlled by the portion of the brain affected - typically

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due to thrombosis or emboli. However, a spasm and, rarely, a bleed are other causes of a TIA. Many people refer to a TIA as a "mini-stroke."

Some TIAs develop slowly, while others develop rapidly. By definition, all TIAs resolve within 24 hours. Strokes take longer to resolve than TIAs, and with strokes, complete function may never return and reflect a more permanent and serious problem. Although most TIAs often last only a few minutes, all TIAs should be evaluated with the same urgency as a stroke in an effort to prevent recurrences and/or strokes. TIAs can occur once, multiple times, or precede a permanent stroke. **A transient ischemic attack should be considered an emergency because there is no guarantee that the situation will resolve and function will return.**

A TIA from a clot to the eye can cause temporary visual loss (amaurosis fugax), which is often described as the sensation of a curtain coming down. A TIA that involves the carotid artery (the largest blood vessel supplying the brain) can produce problems with movement or sensation on one side of the body, which is the side opposite to the actual blockage. An affected patient may experience paralysis of the arm, leg, and face, all on one side. Double vision, dizziness (vertigo), and loss of speech, understanding, and balance can also be symptoms depending on what part of the brain is lacking blood supply.

What can be done to prevent a stroke?

Risk factor reduction

High blood pressure: The possibility of suffering a stroke can be markedly decreased by controlling the risk factors. The most important risk factor for stroke is high blood pressure. When a person's blood pressure is persistently too high, roughly greater than 130/85, the risk of a stroke increases in proportion to the degree by which the blood pressure is elevated. Controlling blood pressure in the normal range decreases the chances of a stroke.

Smoking: Another important risk factor is cigarette or other tobacco use. Cigarettes cause the carotid arteries to develop severe atherosclerosis, which can lead to their closure and block the blood flow to the brain. Atherosclerosis in general, including involvement of the arteries that supply blood to the heart, is accelerated by smoking. So, when an individual smokes, the main question becomes - which will occur first; a stroke, heart attack, or lung cancer?

Diabetes: Another risk factor for developing a stroke is diabetes mellitus. Diabetes causes the small vessels to close prematurely. When these blood vessels close in the brain, small (lacunar) strokes may occur. Good control of blood sugar is important in decreasing the risk of stroke in diabetic patients. An elevated level of blood cholesterol is also a risk factor for a stroke due to the eventual blockage of blood vessels (atherosclerosis). A healthy diet and medications can help normalize an elevated blood cholesterol level.

Blood thinner/warfarin: An irregular heart beat (atrial fibrillation in particular) is associated with an increased risk of an embolic stroke. Warfarin (Coumadin) is a blood "thinner" that prevents the blood from clotting. This medication is often used in patients with atrial fibrillation to decrease this risk. Warfarin is also sometimes used to prevent the recurrence of a stroke in other situations, such as with certain other heart conditions and conditions in which the blood has a tendency to clot on its own (hypercoagulable states). Patients taking warfarin need to have periodic blood checks to make sure that their current dose is producing the desired effect. Patients on warfarin also need to know that they are at increased risk for bleeding, either externally or internally.

Aspirin and other antiplatelet therapy: Many stroke patients who do not require warfarin can use another class of medicines called "antiplatelet" drugs to reduce their risk of suffering another stroke. These medicines reduce the tendency of the blood to clot (clog) in the arteries. As a side effect, patients on these medicines usually have a higher likelihood of bleeding, but this risk is less than when taking an anticoagulant like warfarin. The most commonly prescribed first-choice antiplatelet agent for preventing a stroke recurrence is aspirin. If the patient has an adverse reaction to aspirin or has a stroke despite being on aspirin, newer antiplatelet preparations can be used. These include clopidogrel (Plavix) and dipyridamole (Persantine).

Carotid endarterectomy: In many cases, a person may suffer a TIA or a stroke that is caused by the narrowing or ulceration (sores) of the carotid arteries (the major arteries in the neck that supply blood to the brain). If left untreated, patients with these conditions have a high risk of experiencing a major stroke in the future. An operation that cleans out the carotid artery and restores normal blood flow is known as a carotid endarterectomy. This procedure has been shown to markedly reduce the incidence of a subsequent stroke. In patients who have a narrowed carotid artery, but no symptoms, this operation may be indicated in order to prevent the occurrence of a first stroke.

What is the impact of strokes?

In the United States, stroke is the third largest cause of death (behind heart disease and all forms of cancer). The cost of strokes is not just measured in the billions of dollars lost in work, hospitalization, and the care of survivors in nursing homes. The major cost or impact of a stroke is the loss of independence that occurs in 30% of the survivors. What was a self-sustaining and enjoyable lifestyle may lose most of its quality after a stroke and other family members can find themselves in a new role as caregivers.

Additional information on strokes can be found at www.strokeassociation.org and www.stroke.org

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Carpal Tunnel Syndrome	G-30
Flagging Safety	G119
Low Visibility Driving	G94
Avoiding Back Pain	G-87
Slips, Trips and Falls (DVD)	G114
Workplace Violence for Employees	G-48
Homicide in the Work Place	G-49

Email Nicole at nicole@kworcc.com or give her a call at 877-357-1069 to order these or any of the many other helpful safety videos in our library today.

2010 Board Meeting Dates

- ✓ January 14th
- ✓ February 18th
- ✓ March 11th
- ✓ April 22nd
- ✓ May 20th
- ✓ June 17th
- July 16th
- August 19th
- September 9th
- October 21st
- November 15th — Annual Meeting
- December 16th