

Stroke Prevention, Management, and Rehabilitation

Stroke occurs when the blood supply to a part of the brain becomes altered, depriving it sufficiently to damage brain tissue. Every year, 750,000 Americans suffer a stroke. These are full-fledged attacks with residual damage severe enough to cause serious long-term disability. Stroke is the third most common cause of death. Approximately 4 million Americans are living with the after-effects of stroke. Rehabilitation is designed to build strength, increase capabilities, and continue daily activities of living.

There are two ways a stroke can occur, when blood flow to the brain is blocked or when bleeding occurs into the brain tissue. About 80 percent of strokes are *ischemic*, the term for deprivation of blood flow by sudden blockage of an artery to the brain. Deprived of oxygen, glucose, and nutrients, brain cells begin to die within minutes. Atherosclerosis is the pathological process where the lining of arteries build up plaque over a period of time, which hardens arteries, narrows them, and roughens the lining. Commonly, a thrombus (clot) forming due to plaque in the carotid artery in the neck dislodges into the brain circulation and causes stroke. Plaques can clog or significantly narrow an artery, or they can be swept into the bloodstream and cause obstruction. *Hemorrhagic* stroke results when a blood vessel ruptures due to an aneurysm or small vessels rupture and leak into the brain substance.

Stroke affects brain function resulting in physical, cognitive, and psychological sequelae. Weakness, paralysis, loss of sensation or coordination can affect the face, an arm or leg, or the entire side of the body. Trouble with speech, swallowing, or visual disturbances may ensue. Patients may be affected in the way they think or interact with others. Feelings of helplessness, frustration, and depression are not unusual. Controlling emotions can become difficult.

Strokes may be preventable. Every year, half a million Americans experience a phenomenon known as TIA (transient ischemic attack), or ministroke. Unlike full strokes, these occur owing to temporary interruptions of blood flow causing symptoms that last anywhere from a few seconds to 24 hours. They rarely cause permanent physical or cognitive defects. They're often strong predictors of



Maintaining Your Health on Mackinac

By Yvan Silva, M.D.

These are signs to watch for: numbness, weakness or paralysis of the face, arm or leg, especially on only one side of the body; blurred vision, trouble seeing out of one or both eyes or loss of visual fields; confusion and difficulty speaking or understanding; dizziness, loss of coordination or difficulty ambulating of sudden onset; severe or unusual headache accompanied by a painful, stiff neck; vomiting, or altered consciousness.

future major stroke. Mini-strokes, while less severe than strokes, are dangerous and require prompt medical attention, diagnosis, and treatment with follow-up to prevent future episodes. A recent study reported by the National Stroke Association shows that 4.9 million people in the U.S. (2.5 percent of adults older than 18 years) have experienced a confirmed TIA. Among people over 45 years of age, 1.2 million had most likely suffered such ministrokes without knowing it. Public education is warranted because if the public knew how to interpret the symptoms and sought prompt medical treatment, thousands of lives could be saved, and further, severe disability could be avoided. There are two important issues to consider.

TIA: Although the symptoms are subtle and may be fleeting, these are signs to

watch for: numbness, weakness or paralysis of the face, arm or leg, especially on only one side of the body; blurred vision, trouble seeing out of one or both eyes or loss of visual fields; confusion and difficulty speaking or understanding; dizziness, loss of coordination or difficulty ambulating of sudden onset; severe or unusual headache accompanied by a painful, stiff neck; vomiting, or altered consciousness. Additional key indicators are age over 60, symptoms lasting more than 10 minutes, history of diabetes, or high blood pressure. There is no way to tell if these symptoms or signs will fade or persist once they start. Call immediately for medical assistance. If you suspect that you may have had these symptoms and they have passed, see your doctor immediately. A medical evaluation is necessary to elaborate the diagnosis and formu-

late a plan of treatment.

Risk Factors: A family history is significant if your parent or sibling has suffered a stroke. Age over 45 years progressively increases risk. Men are at greater risk for ischemic stroke than pre-menopausal women, while men and women are equally susceptible to hemorrhagic stroke. African Americans are more likely than other ethnic groups to suffer stroke. There are factors that can be managed or changed to diminish risk by changes of lifestyle and medications. These are high blood pressure, optimal control of cholesterol and, certainly, cessation of smoking. Smokers have a two to four times greater risk. Management of diabetes and heart disease, like rhythm abnormalities and valve disease, are important. A previous stroke or TIA is definitely associated with future stroke. For instance, 30 to 40 percent of people with TIA will eventually have a stroke. Lifestyle alterations are often recommended. Cessation of smoking, proper diet, regular exercise, and stress management should be instituted.

For the prevention of acute stroke, symptoms and signs of TIA are important to consider. The response should be immediate and the potential for reversal of brain damage is excellent. Emergency clot-dissolving treatments are available. If you have symptoms or recognize risk factors pertain-

ing to you, several screening tests are available to determine the risks and several treatment options exist, including surgical procedures to reduce the risk for future stroke. Surgery entails the removal of plaques from the internal carotid arteries in the neck to prevent stroke. Non-invasive tests of these arteries are used to determine disease in these vessels, and the degree of narrowing as well as abnormalities of the lining caused by plaque formation.

After recovery from stroke, rehabilitation should be undertaken to reach the maximum

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