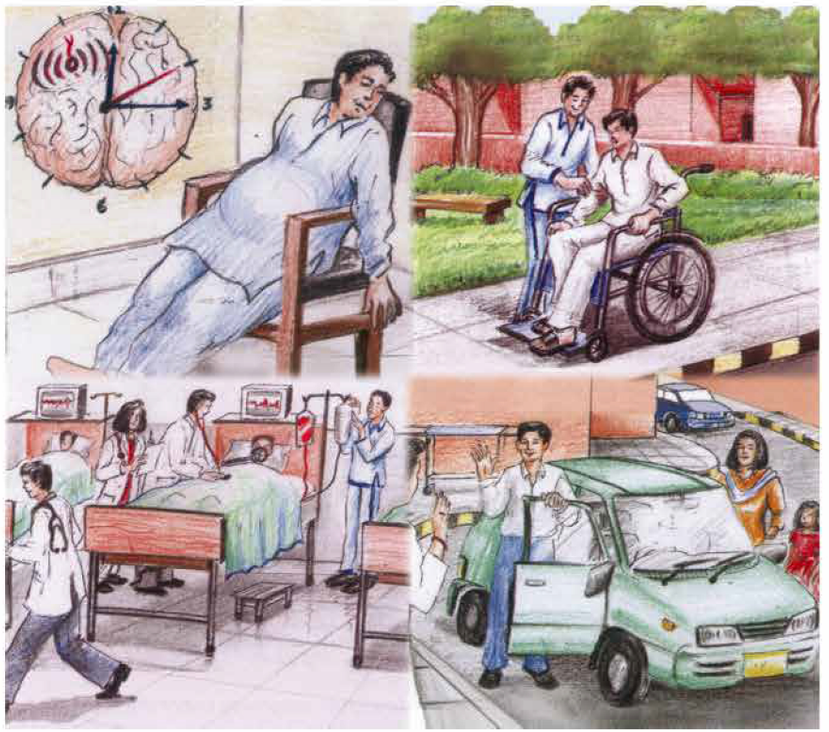
Disclaimer:

This public information service is derived from materials in the public domain by the NINDS. We acknowledge their input. All individual patient inquiries must be directed to your physician.

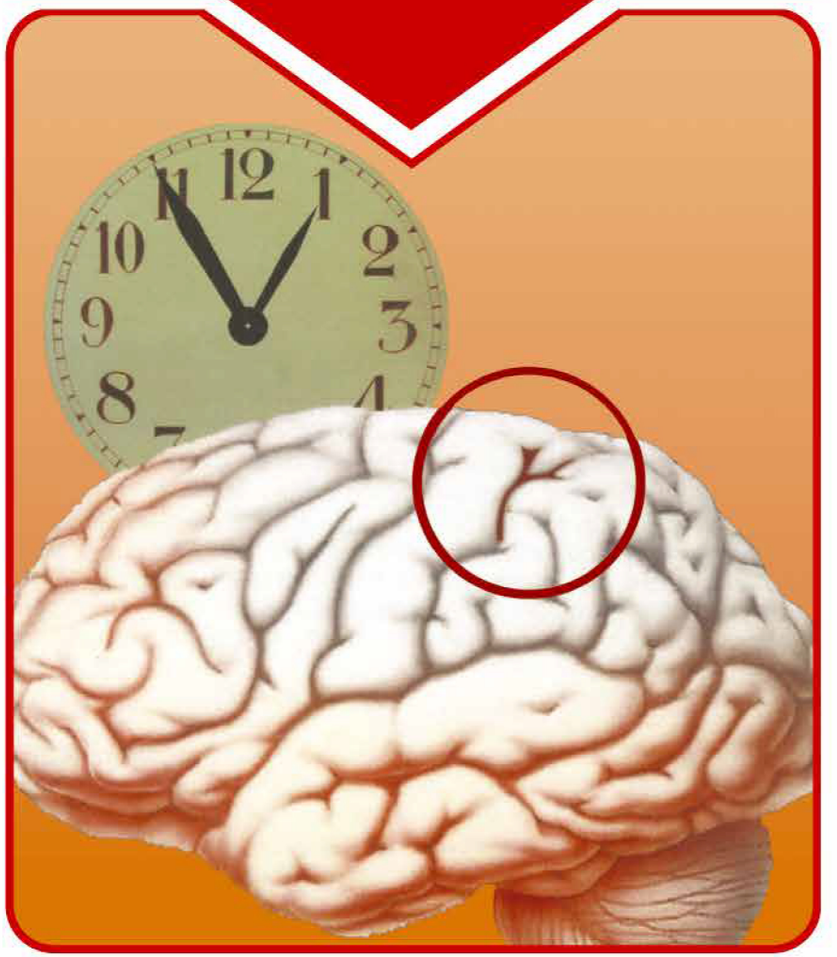


For further information and appointments, please contact:
Dr Ayeesha K. Kamal, MD, FAHA
Director Stroke Programme – Stroke Clinic – Monday Morning – Consulting Clinic 1
Phone: 3486 1002, 3486 1028, 3486 1022

Aga Khan University Hospital
P.O. Box 3500, Stadium Road, Karachi-74800, Pakistan
Fax: 92-21-3493 4294, 3493 2095
Email: neurology@aku.edu
www.aku.edu

July 2013 ICN # 215880

WHAT IS STROKE?
A GUIDE FOR PATIENTS AND FAMILIES



This brochure provides information about stroke. It is designed to respond to questions most frequently asked by patients and their families.

آغا خان یونیورسٹی ہسپتال، کراچی
The Aga Khan University Hospital, Karachi.

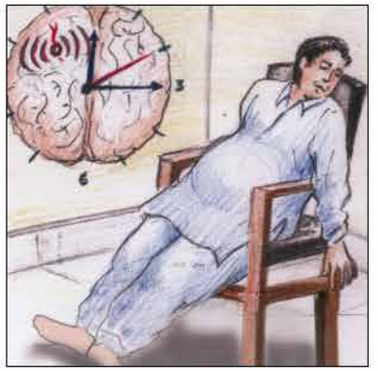
A Unit of The Aga Khan Hospital and Medical College Foundation; Licensed under Section 42 of the Companies Ordinance, 1984
Registered Office: Stadium Road, P. O. Box 3500, Karachi 74800, Pakistan

Know Stroke

Stroke is the second leading cause of death and the leading cause of long term disability in the world. In Pakistan, about one in four adults have undiagnosed diabetes and/or hypertension which are the two main preventable causes of stroke. Thus it is imperative to know and prevent stroke.

Why is Stroke an Emergency?

New treatments are available that greatly reduce the damage caused by a stroke. But to prevent disability you need to arrive at the hospital within 60 minutes after symptoms start. Knowing stroke symptoms, and getting to a hospital specialised in stroke care are critical.



Time is Brain

What is a Stroke?

A stroke is serious just like a heart attack. A stroke is sometimes called a "brain attack." Most often, stroke occurs when blood flow to the brain stops because it is blocked by a clot. The brain cells in the immediate area begin to die because they stop getting the oxygen and nutrients they need to function. Stroke is a dangerous disease. One third of stroke victims die, one third are permanently disabled and only one third recover completely. Outcome in stroke depends on the expertise of the care provided to the patient.

What Causes a Stroke?

There are two kinds of stroke. The most common kind of stroke, called ischemic stroke, is caused by a blood clot that blocks or plugs a blood vessel in the brain. The other kind of stroke, called haemorrhagic stroke, is caused by a blood vessel that breaks and bleeds into the brain. This is also called a brain haemorrhage. These represent about 20% of all strokes.

Know the Signs, Act in Time

Because stroke injures the brain, you may not realise that you are having a stroke. To a bystander, someone having a stroke may just look unaware or confused. Stroke victims have the best chance if someone around them recognises the symptoms and acts quickly.

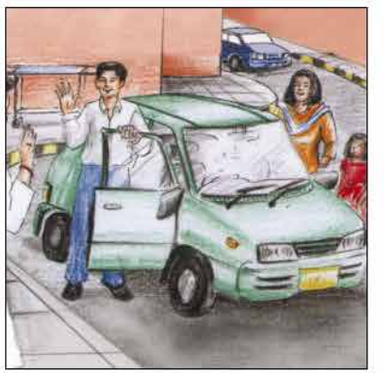
Recurrent stroke is frequent; about 25 percent of people who recover from their first stroke will have another stroke within five years. A severe stroke may lead to death from brain herniation or severe permanent dependency and disability.

What is Post Stroke Rehabilitation?

Aggressive Rehabilitation Hastens Recovery

Rehabilitation helps stroke survivors relearn skills that are lost when part of the brain is damaged. For example, these skills can include coordinating leg movements in order to walk or carrying out the steps involved in any complex activity. Rehabilitation also teaches survivors new ways of performing tasks to circumvent or compensate for any residual disabilities. Patients may need to learn how to bathe and dress using only one hand, or how to communicate effectively when their ability to use language has been compromised. There is a strong consensus among rehabilitation experts that the most important element in any rehabilitation programme is carefully directed, well-focused, repetitive practice - the same kind of practice used by all people when they learn a new skill, such as playing the piano or pitching a baseball.

I Hope People Realise they can Prevent Stroke



Compliance Ensures Stroke Free Survival

I had a stroke when I was 49 years old. I am 67 now and have gone almost 20 years without another stroke. Until I had my stroke, I did not do anything good for my health. I had high blood pressure, I was overweight, and I smoked. When bad things happen to people, they tend to think "why me?" But, when I think about my stroke, I think "why not me?" I had all the risk factors and wasn't taking care of myself like I am now. I've learned a lot of important lessons from my stroke, which have caused me to change my eating habits, quit smoking, and really control my high blood pressure for the first time in my life. I hope people realise they can prevent stroke. It doesn't have to happen to them. Stroke Survivor.

Act in Time

What Should You Do?

Because stroke injures the brain, you may not realise that you are having a stroke. Don't wait for the symptoms to improve or worsen. If you believe you are having a stroke - or someone you know is having a stroke - get to the hospital at once. Making the decision to call for medical help can make the difference in avoiding a lifelong disability.

How is Stroke Diagnosed?

Doctors have several techniques and imaging tools to help diagnose stroke quickly and accurately. The first step in diagnosis is a short neurological examination, or an evaluation of the nervous system. When a possible stroke patient arrives at a hospital, a health care professional, usually a doctor or nurse, will ask the patient or a companion what happened and when the symptoms began. Blood tests, an electrocardiogram, and a brain scan such as computed tomography or CT, or magnetic resonance imaging or MRI, will often be done.

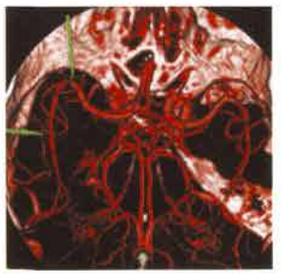
What is a CT Scan?

The most commonly used imaging procedure is the computed tomography or CT scan, also known as a CAT scan. A CT scan creates a series of cross-sectional images of the head and brain. Because it is readily available at all hours at most major hospitals and produces images quickly, CT is often preferred as the diagnostic brain scan for stroke.

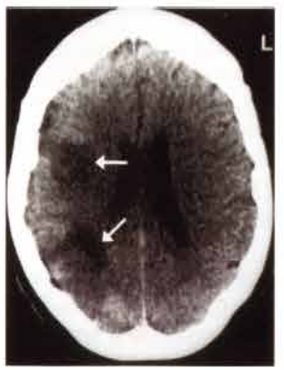
What is an MRI Scan?

Another imaging technique used for stroke patients is the magnetic resonance imaging or MRI scan. MRI uses magnetic fields to detect subtle changes in the content of brain tissue. One effect of stroke is the slowing of water movement, called diffusion,

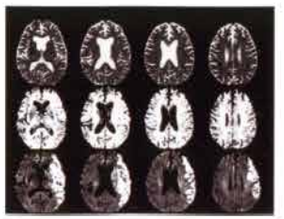
CT Angio of stroke patient showing a blocked artery



Reopened artery after treatment

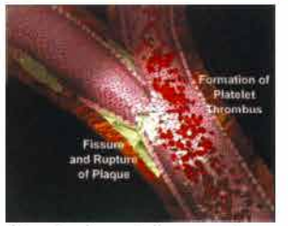


CT Scan showing a stroke



MRI - showing left sided large stroke

through the damaged brain tissue. An MRI can show this type of damage within the first hour after the stroke symptoms start.



Hardening of the arteries: Artheroscleroses

Treatment

There are three treatment stages for stroke: prevention, therapy immediately after stroke, and rehabilitation after stroke. Stroke therapies include medications, surgery, and rehabilitation.

Medication or drug therapy is the most common treatment for stroke. The most popular kinds of drugs to prevent or treat stroke are antithrombotics - which include antiplatelet agents and anticoagulants - and thrombolytics.

In treating a stroke that has just occurred, every minute counts. Ischemic strokes - the most common kind - can be treated with thrombolytic drugs. These drugs halt the stroke by dissolving the blood clot that is blocking blood flow to the brain. But a person needs to be at the hospital as soon as possible after stroke symptoms start, to be evaluated and receive treatment.

A thrombolytic drug known as t-PA can be effective if a person receives it intravenously within three hours after his or her stroke symptoms have started. Since thrombolytic drugs can increase bleeding, t-PA should be used only after the doctor is certain that the patient has suffered an ischemic and not a haemorrhagic stroke.

What Kind of Disabilities can Result from a Stroke

Stroke damage in the brain can affect the entire body - resulting in mild to severe disabilities. These include paralysis, problems with thinking, problems with speaking, and emotional problems. Although stroke is a disease of the brain, it can affect the entire body. The effects of a stroke range from mild to severe and can include paralysis, problems with thinking, problems with speaking, and emotional problems. Patients may also experience pain or numbness after a stroke. Patients may require deed via a nasogastric tube.

What are the Treatable Risk Factors for Brain Attack?

Stroke prevention is still the best medicine. The most important treatable conditions linked to stroke are:

- High blood pressure. Also called hypertension, this is by far the most potent risk factor for stroke. If your blood pressure is high, you and your doctor need to work out an individual strategy to bring it down to the normal range.

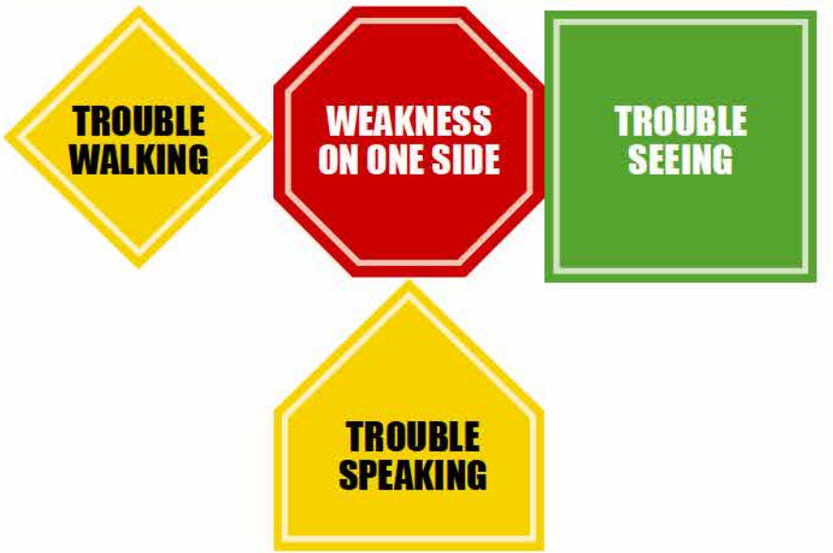
Some ways that work: Maintain proper weight. Avoid drugs known to raise blood pressure. Cut down on salt. Eat fruits and vegetables to increase potassium in your diet. Exercise more. Your doctor may prescribe medicines that help lower blood pressure. Controlling blood pressure will also help you avoid heart disease, diabetes, and kidney failure. Hypertension cannot be "felt" or predicted, check your blood pressure, if it is greater than 135 / 80, you should consult a doctor. Hypertension medications must be taken regularly and not on an "as needed" basis. These medications are generally life long.

- Cigarette smoking. Cigarette smoking has been linked to the build up of fatty substances in the carotid artery, the main neck artery supplying blood to the brain. Also, nicotine raises blood pressure; carbon monoxide reduces the amount of oxygen your blood can carry to the brain; and cigarette smoke makes your blood thicker and more likely to clot. Your doctor can recommend programmes and medications that may help you quit smoking. By quitting, at any age, you also reduce your risk of lung disease, heart disease, and a number of cancers including lung cancer. You may have to try at least four to six times before you can completely quit smoking.

- Heart disease. Common heart disorders such as coronary artery disease, valve defects, irregular heart beat, and enlargement of one of the heart's chambers can result in blood clots that may break loose and block vessels in or leading to the brain. The most common blood vessel disease, caused by the build up of fatty deposits in the arteries, is called atherosclerosis. Your doctor will treat your heart disease and may also prescribe medication, such as aspirin, to help prevent the formation of clots. Your doctor may recommend surgery to clean out a clogged neck artery if you match a particular risk profile. A doctor can evaluate your risk factors and help you decide if you will benefit from aspirin or other blood-thinning therapy - a Monday morning stroke clinic at AKUH is dedicated to stroke treatment and prevention.

- Warning signs or history of stroke. If you experience a TIA, get help at once. If you have had a stroke in the past, it's important to reduce your risk of a second stroke. Your brain helps you recover from a stroke by drawing on body systems that now do double duty. That means a second stroke can be twice as bad.

- Diabetes. You may think this disorder affects only the body's ability to use sugar, or glucose. But it also causes destructive changes in the blood vessels throughout the body, including the brain. Also, if blood glucose levels are high at the time of a stroke, then brain damage is usually more severe and extensive than when blood glucose is well-controlled. Treating diabetes can delay the onset of complications that increase the risk of stroke.



The symptoms of stroke are distinct because they happen quickly:

- Sudden numbness or weakness of the face, arm, or leg (especially on one side of the body)
- Sudden confusion, trouble speaking or understanding speech
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause

Other danger signs that may occur include double vision, drowsiness, and nausea or vomiting. Sometimes the warning signs may last only a few moments and then disappear. These brief episodes, known as transient ischemic attacks or TIAs, are sometimes called "mini-strokes." Although brief, they identify an underlying serious condition that isn't going away without medical help. Unfortunately, since they clear up, many people ignore them. Don't. Heeding them can save your life.

Do not wait - seek immediate assistance