TIME is of the essence when dealing with a stroke. Dr Ramesh Narenthiranathan, consultant neurosurgeon at Ara Damansara Medical Centre, explains, "When someone suffers a stroke, it means that brain tissue damage has already occurred.

"What we need to do is to control and limit the amount of damage as much as possible by starting treatment immediately."

Strokes are of two kinds – ischaemic and haemorrhagic. The latter is more lethal.

"In case of an ischaemic stroke, which is caused by a clot within a blood vessel that obstructs oxygen supply to a part of the brain, there is a time frame within which the blood clot needs to be dissolved to revascularise the brain tissue," says Dr Ramesh.

"In haemorrhagic strokes, when a blood vessel ruptures, damage is caused not only to the part of the brain where the primary rupture occurred. Other parts of the brain could be damaged as well due to secondary pressure exerted by the blood clot mass.

"People often assume that a blood clot only happens inside a blood vessel, which can be dissolved with medication. However, for haemorrhagic strokes, blood clots form outside the blood vessels within the brain tissue, making brain surgery necessary in some cases.

"This pressure needs to be reduced by removing the external blood clot as soon as possible to minimise damage to the brain."

According to Dr Ramesh, ischaemic strokes are usually treated by neurologists.

However, if there is a swelling that exerts pressure on the surrounding brain tissues, the assistance of neurosurgeons may

A stitch in time



Arteriovenous malformation is a cause of stroke.

be needed.

"An ischaemic stroke patient may need to undergo surgery if his brain experiences secondary swelling. Once the swelling exerts pressure on the surrounding parts of the brain, immediate surgery is required to decompress the brain," he says.

Dr Ramesh assures that surgery is not always necessary to treat haemorrhagic strokes. The need for surgery depends on the size of the blood clot and how much of the brain is affected. A blood mass of roughly more than 3cm in diameter usually needs to be operated on.

He insists that treatment for strokes involves more than just removing blood clots. The aim of stroke treatment is not just saving lives but to bring back as

Going under the knife

The type of brain surgery performed on a stroke patient depends on the kind of stroke, its cause and the amount of damage done.

According to Dr Ramesh Narenthiranathan, consultant neurosurgeon at Ara Damansara Medical Centre, the types of surgery are as follows:

Decompression craniectomy

much functionality as possible. For this reason, he says, "It is important to undergo rehabilitation as soon as the patient is medically stable." (removal of the skull bone to prevent internal compression of the brain)

A scan showing brain cavernoma.

• Evacuation of large hematoma (usually 3cm and more)

• Microsurgical clipping of aneurysm (alternatively, aneurysms can be coiled using endovascular route similar to

cardiac stents)Microsurgical excision of

Stroke rehabilitation should not be considered an option, but a necessary part of the full treatment process. With timely treatment and proper arteriovenous malformation (AVM) (alternatively, AVM can be embolised using endovascular route or treated

Dr Ramesh Narenthiranathan.

Microsurgical excision of cavernomas

 Brain bypass surgery for moya moya disease or syndrome and large giant aneurysms
Endoscopic lavage of ventricular haemorrhages

rehabilitation, stroke patients can get a second shot at life.

■ For more information, call 03-5639 1212.

Be prompt in taking action

"A STROKE is a sudden onset of focal neurological deficit due to infarction or haemorrhage lasting more than 24 hours. In layman's terms, you are suddenly losing your bodily functions due to blood clot or bleeding," explains Dr Gunasundari Pushparasah, consultant physician and neurologist at ParkCity Medical Centre.

Generally divided into two types, ischaemic and haemorrhagic, stroke is a serious condition as patients can permanently lose bodily functions or lose their life.

Ischaemic stroke is the more common type of stroke, accounting for 80% of all stroke cases. While it is usually not fatal, patients need to be aware of the symptoms to ensure they seek early and appropriate treatment to prevent permanent loss of bodily functions.

Dr Gunasundari recommends the FAST acronym as a helpful way to remember the danger signs to look out for and take action before it is too late.

- Facial weakness
- Arm/Limb weakness
- Speech difficulty

• Time to seek medical treatment

"Other symptoms include a sudden loss of vision, unsteadiness when walking and giddiness. Individuals who experience these symptoms should go to the emergency room immediately."

Prevention through knowledge

The main causes of ischaemic



Dr Gunasundari Pushparasah.

stroke are atherothromboembolism (blockage of main blood vessels to the brain), cardioembolism (clots that are lodged in the brain due to irregular heartbeat) and lacunar stroke (small vessel disease).

According to Dr Gunasundari, prevention of ischaemic stroke is divided into two parts – primary and secondary.

Primary prevention takes place before a person experiences a stroke. It focuses on addressing the risk factors, which include high blood pressure, diabetes, irregular heart rate, truncal (apple-shaped) obesity and lifestyle choices such as smoking and drinking alcohol.

She adds that the rising prevalence of stress, depression and unhealthy lifestyles among the younger generation may also contribute to stroke.

Secondary prevention focuses on stroke survivors. Dr Gunasundari explains that identifying the cause



of a stroke is important in determining the best methods of prevention to avoid a recurrence.

"Patients with clots in the main blood vessels can be treated with anti-platelet medication," says Dr Gunasundari.

"If you have significant blockages (carotid stenosis) of more than 70% in the neck, a carotid endarterectomy procedure or carotid stenting can be done to overcome the blockage. A vascular surgeon will either insert a stent or surgically remove the blockage.

"Patients with lacunar stroke are

also treated with anti-platelet medication. Clots caused by cardioembolism, which is due to irregular heartbeat, are treated with anticoagulant medication."

She stresses that stroke survivors must adhere to primary preventive measures on top of their secondary prevention methods to lower the risk of recurrence.

Timely treatment

Treatment procedures for patients depend on the time frame of stroke detection and treatment. recent breakthroughs in ischaemic stroke treatments. Currently, within the first 4.5 hours of experiencing a stroke, thrombolytic therapy medication can be given intravenously to dissolve the clot in the brain. "This is a new emergency

Dr Gunasundari says, "There are

management treatment. However, eligibility for this treatment depends on the patient's medical history.

"If a patient seeks treatment within 4.5 to six hours of experiencing a stroke, a mechanical thrombectomy procedure can be done. This is where an interventional radiologist inserts a device into the patient to remove the blood clot from the brain.

"In the time range of six to 24 hours, certain patients are still eligible for mechanical thrombectomy. This is because medical innovations over the past decade have increased the critical window for ischaemic stroke treatment."

In the case of a milder stroke or transient/temporary symptoms, blood thinner is given to prevent further clot formation.

"If you experience stroke symptoms, go to the hospital early so you can be properly assessed and given the right treatments," she advises.

"The misconception that stroke is not an emergency should be debunked, as ignoring the symptoms could spell significant ramifications."

■ For more information, call 03-5639 1212.