

What is Acute Stroke?

There are two types of acute stroke: ischaemic stroke, due to interruption of blood flow to the brain and haemorrhagic stroke, due to bleeding into the brain. Ischaemic stroke is caused by a blood clot cutting off the blood supply to an area of the brain, depriving the brain tissue of oxygen and nutrients. As a result, the brain tissue becomes damaged and eventually dies. The effect of acute stroke depends on the location and severity of brain tissue damage. Severe stroke may result in significant permanent disability or even death.

“Time is Brain” in Acute Stroke Management

During the initial phase of acute ischaemic stroke, not all the brain tissue with interrupted blood supply becomes permanently damaged immediately. Some of this tissue can be salvaged if the blood supply can be restored within a critical time period. This time window for rescue is very short; more importantly, the earlier the blood supply can be restored, the better the outcome. This reperfusion by thrombolytic therapy is a high risk intervention and has to be conducted by a team of experienced professionals. Acute stroke management requires concerted efforts and seamless coordination of different disciplines and specialists for accurate diagnosis and prompt treatment.

What is Thrombolytic Therapy?

Thrombolysis means breaking up and dissolving of the blood clots within the blocked blood vessel. Alteplase (or rtPA) is a thrombolytic (or ‘clot-dissolving’) medicine given intravenously that can dissolve the blood clot and possibly restore the blood supply to the brain tissue affected by acute stroke. As a result, the chance of recovery after acute stroke is improved.

Thrombolytic therapy is most effective if given within 3 hours from the onset of acute stroke symptoms. While on the average only 1 in 4 (26%) patients recover to full independence following an ischaemic stroke, an additional 1 in 8 (13%) patients treated with thrombolytic therapy achieve recovery to full independence. Selected patients may also benefit from thrombolytic therapy if the treatment is given up to 4.5 hours from acute stroke onset.

What are the Risks of Thrombolytic Therapy?

Haemorrhage (bleeding) in the brain or other parts of the body is the most important risk of thrombolytic therapy. Approximately 1 in 15 (6%) patients treated with thrombolytic therapy develops bleeding in the brain, which may worsen the neurological impairment or even lead to death in 1%. This type of bleeding in the damaged brain tissue can also occur naturally after an ischaemic stroke even without thrombolytic therapy. Patients who have received thrombolytic therapy will require close monitoring and control of the blood pressure during the first 24 hours. Patients with certain medical conditions that increase the bleeding risk in the brain or other organs, past history of bleeding in the brain, or with stroke onset exceeding the recommended time window may not be suitable for thrombolytic therapy. The stroke team will determine a patient’s eligibility for thrombolytic therapy based on the clinical profile and the findings on the brain scan.

Acute Stroke Activation Programme (ASAP) Offered by Hong Kong Sanatorium & Hospital

When you present to our Outpatient Department (OPD) with symptoms suspected to be due to acute stroke, our OPD nurse will immediately conduct the triage procedure. If you are assessed to be a potential candidate for thrombolytic therapy, the Acute Stroke Assessment Protocol will be activated. You will undergo priority assessment by the on duty Resident Medical Officer (RMO) of the OPD and other tests will be performed according to protocol. These include blood tests to exclude underlying bleeding tendency and urgent non-contrast CT brain scan to exclude the presence of bleeding inside the brain and other conditions that may mimic acute stroke.

After review of your clinical profile and the results of your blood tests and brain scan, the on-call neurologist will confirm the diagnosis of acute ischaemic stroke and determine if thrombolytic therapy can be safely administered to you. If you are assessed to be eligible for and agree to receiving thrombolytic therapy, you will be admitted to the Intensive Care Unit (ICU, or other ward areas providing close monitoring) for the Acute Stroke Treatment Protocol. This involves an injection followed by infusion of Alteplase over one hour. You will then have close monitoring of the blood pressure and neurological status for the following 48 hours.

What Treatment will I Receive if I Choose Not to Receive Thrombolytic Therapy?

If you are assessed to be not eligible for or choose not to receive thrombolytic therapy, you will receive the standard treatment for acute stroke including antiplatelet therapy, cholesterol lowering therapy, stabilisation of your blood pressure, and nursing care and physiotherapy to prevent complications and enhance the outcome of rehabilitation. The package charges will not be applicable to you.

What is the Role of Neurosurgery in Acute Stroke Management?

Joint management with the neurosurgeon will be required in the following clinical settings:

- Haemorrhagic stroke, including subarachnoid haemorrhage
- Haemorrhagic transformation of ischaemic stroke, including those occurring after thrombolytic therapy
- Large areas of damaged brain tissue in ischaemic stroke causing brain swelling and impairment in conscious level

The Charges for Acute Stroke Activation Programme (ASAP)

Hong Kong Sanatorium and Hospital has the following packages for patients with acute ischaemic stroke who undergo assessment for eligibility and receives thrombolytic therapy.

