

MOH CLINICAL PRACTICE GUIDELINES

Stroke and Transient Ischaemic Attacks Assessment, Investigation, Immediate Management and Secondary Prevention



College of Family
Physicians, Singapore



Academy of Medicine,
Singapore



MINISTRY OF HEALTH
SINGAPORE



Clinical Neuroscience Society,
Singapore



Singapore National Stroke
Association

Executive summary of recommendations

Details of recommendations can be found in the main text at the pages indicated.

Assessment and investigation of acute stroke and transient ischaemic attack

A A full medical assessment should be undertaken and multidisciplinary assessment considered for all patients with acute stroke or transient ischaemic attack (TIA) to define the nature of the event, the need for investigations, further management and rehabilitation (pg 11).

Grade A, Level 1++

C A swallowing assessment should be undertaken at home or in hospital as part of the clinical assessment of stroke (pg 12).

Grade C, Level 2+

GPP Local written protocols should be available for healthcare institutions, setting out indications for both routine and more specialised investigations (pg 12).

GPP

C&GPP All patients with transient ischaemic attack or an acute stroke syndrome should have a computed tomography or magnetic resonance imaging brain scan as soon as possible*, preferably within 24 hours[†] (pg 14).

*Grade C, Level 2+

[†]GPP

Immediate management following acute stroke

A Intravenous recombinant tissue plasminogen activator is recommended for ischaemic stroke patients within 3 hours of stroke onset and without contraindication to this therapy, in centres with appropriate facilities and expertise (pg 16).

Grade A, Level 1+

A Intra-arterial thrombolysis is an option for treatment in selected patients within 6 hours of onset of major middle cerebral artery infarction, who are otherwise not eligible for intravenous thrombolysis (pg 16).

Grade A, Level 1+

A The routine use of heparins in acute ischaemic stroke, including cardioembolic strokes, is not recommended (pg 16).

Grade A, Level 1+

A Antiplatelet therapy, normally aspirin, should be prescribed immediately for patients who have sustained an ischaemic stroke (pg 17).

Grade A, Level 1+

A Early decompressive surgery is an option for treatment in patients aged between 18-60 years, with a space-occupying middle cerebral artery infarction (pg 17).

Grade A, Level 1++

A The routine use of drugs to limit neural damage, including the use of corticosteroids, neuroprotectants, plasma volume expanders, barbiturates and streptokinase, is of no proven benefit and should be discouraged (pg 17).

Grade A, Level 1+

GPP Mild and moderately elevated blood pressure should not routinely be lowered in the acute phase of stroke as this may worsen outcome (pg 18).

GPP

GPP Patients with hemorrhagic strokes who are receiving anticoagulants or have received recent thrombolytic therapy or those with bleeding diatheses require urgent correction of coagulation defects. Thrombolytics, anti-platelet therapy and anticoagulants should be discontinued (pg 18).

GPP

D Urgent neurosurgical assessment should be available for selected patients, such as those with large cerebellar infarcts or haemorrhage or acute hydrocephalus, and for selected cases of cerebral haemorrhage (pg 19).

Grade D, Level 4

GPP Monitoring and management of hyperglycaemia is recommended for all patients with acute ischaemic stroke (pg 19).

GPP

B If glucose lowering therapy is initiated, close monitoring of glucose concentrations to avoid hypoglycaemia is recommended (pg 19).

Grade B, Level 1+

GPP Hypoglycaemia in patients with acute ischaemic stroke should be treated with a goal to achieve normoglycaemia (pg 19).

GPP

D When fever occurs in patients with acute ischaemic stroke, the temperature should be lowered and the cause ascertained and treated (pg 20).

Grade D, Level 4

D Good hydration and early mobilisation is recommended for all stroke patients to reduce deep venous thrombosis and pulmonary embolism (pg 21).

Grade D, Level 2+

A Antiplatelet therapy is recommended in all patients with ischaemic stroke to reduce deep venous thrombosis and pulmonary embolism (pg 21).

Grade A, Level 1+

Secondary prevention following acute ischaemic stroke and transient ischaemic attack

A Antiplatelet therapy should be continued in the long term for the secondary prevention of recurrent stroke and other vascular events in patients who have sustained an ischaemic cerebrovascular event (pg 22).

Grade A, Level 1++

A Long term anticoagulation with adjusted dose warfarin (target INR 2.5, range 2.0-3.0) is recommended in the secondary prevention of stroke following atrial fibrillation unless there are contraindications (pg 23).

Grade A, Level 1++

A In patients with cardioembolic strokes and definite contraindications to long term anticoagulation, antiplatelet therapy should be considered (pg 23).

Grade A, Level 1++

A Patients with moderate or severe internal carotid artery stenosis ipsilateral to a carotid transient ischaemic attack or non-disabling ischaemic stroke should be considered for carotid endarterectomy by an experienced surgeon (pg 24).

Grade A, Level 1++

A Carotid artery stenting may be considered in patients who are not suitable for carotid endarterectomy (pg 24).

Grade A, Level 1++

C Intracranial angioplasty with or without stenting may be considered as a treatment option for symptomatic patients who have > 50% stenosis and who have failed medical therapy (pg 25).

Grade C, Level 2+

A Blood pressure lowering should be considered after the acute phase of stroke (pg 25).

Grade A, Level 1++

A Patients with ischaemic stroke or transient ischaemic attack are reasonable candidates for treatment with a statin agent to reduce the risk of vascular outcomes. However, caution should be exercised for patients with haemorrhagic stroke (pg 26).

Grade A, Level 1++

A&B Glucose control is recommended to near normoglycaemic levels among diabetics with ischaemic stroke or transient ischaemic attack to reduce microvascular complications* and possibly macrovascular complications† (pg 27).

***Grade A, Level 1+**

†Grade B, Level 2++

D&GPP Smoking cessation, limited alcohol consumption, weight control, regular physical activity, and a diet rich in fruits, vegetables, fish oil and low fat dairy products may be beneficial for reducing the risk of ischaemic stroke and transient ischaemic attack (pg 27).

**Grade D, Level 4
GPP**

Rehabilitation

A Stroke patients should receive organized inpatient multidisciplinary rehabilitation (pg 28).

Grade A, Level 1+

B Stroke patients should receive early rehabilitation (pg 28).

Grade B, Level 2++

A If able to do so, stroke patients should be encouraged to participate in more intensive rehabilitation particularly in the first six months (pg 28).

Grade A, Level 1+

A Stroke rehabilitation should include physiotherapy and occupational therapy (pg 29).

Grade A, Level 1+

A Dysphagia therapy is recommended for all acute stroke patients with impaired swallowing function (pg 29).

Grade A, Level 1+

D Speech and language therapy may be considered for poststroke communication disorder but there is presently no clear evidence for its efficacy (pg 29).

Grade D, Level 3

A Constraint-induced movement therapy is recommended for patients with upper limb paralysis who are able to tolerate the treatment regime (pg 30).

Grade A, Level 1+

C Body weight support treadmill ambulation or acupuncture may be considered but there is presently no clear evidence for its efficacy (pg 30).

Grade C, Level 2+

Implications for service delivery

A Patients with transient ischaemic attack or minor stroke should be referred for urgent assessment in specialised clinics (pg 31).

Grade A, Level 1+

A Patients who have suffered an acute stroke should be admitted to a Stroke Unit (pg 31).

Grade A, Level 1++

A Acute inpatient care for patients admitted to hospital with a stroke should be organised as a multidisciplinary stroke service based in designated stroke units (pg 32).

Grade A, Level 1++

