

STANDARD TREATMENT WORKFLOW (STW)

Stroke

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Standard Treatment Workflow (STW) for the Management of

STROKE

ICD-10-I63, I64



WHAT IS STROKE?

An episode of neurological dysfunction caused by focal cerebral, spinal, or retinal infarction or haemorrhage



SYMPTOMS

- Numbness or weakness, especially on one side of the body
- Loss of consciousness or altered consciousness
- Decreased vision in one or both eyes
- Language difficulties, either in speaking or understanding
- Difficulty walking; loss of balance or coordination
- Confusion or loss of memory
- Swallowing difficulties
- Paralysis of any part of the body, including face
- Sudden, severe headache with no known cause
- Neck pain
- Nausea and vomiting

WARNING SIGNS (BEFAST)

- **BALANCE**: Loss of balance or coordination
- **EYES**: Sudden blurred or double vision/ sudden, persistent vision trouble
- **FACE**: Deviation at the angle of the mouth
- **ARM**: Arm Drift
- **SPEECH**: Slurred speech or the inability to speak or understand
- **TIME**: Act fast
- Sudden new onset of headache or loss of consciousness
- Sudden giddiness, vomiting and imbalance

TYPES OF STROKE

Ischemic stroke	Intracerebral haemorrhage Focal collection of blood	Subarachnoid haemorrhage	Cerebral venous	Transient Ischemic Attack (TIA) Transient episode of
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October/2018

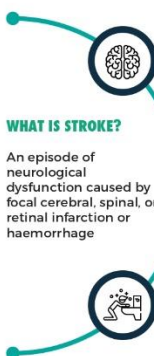


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TYPES OF STROKE

Ischemic stroke Focal cerebral, spinal, or retinal infarction	Intracerebral haemorrhage Focal collection of blood within the brain parenchyma or ventricular system that is not caused by trauma	Subarachnoid haemorrhage Bleeding into the subarachnoid space	Cerebral venous thrombosis Thrombosis of a cerebral venous structure	Transient Ischemic Attack (TIA) Transient episode of neurologic dysfunction caused by focal cerebral, spinal cord, or retinal ischemia, without acute infarction
PRELIMINARY MANAGEMENT		INVESTIGATIONS		
<ul style="list-style-type: none"> • Assess and manage ABCs • Initiate cardiac monitoring • Maintain O2 saturation >94% • Establish IV access • Determine blood glucose and treat accordingly • Determine time of symptom onset or last known normal, and obtain family contact information, preferably a cell phone • Triage and RAPID TRANSFER of patient to nearest district hospital with CT Scan facility or Stroke center with facility for thrombolysis • Referral hospital to be notified to handle the referred patient with stroke 		ESSENTIAL <ul style="list-style-type: none"> • CT Scan head • ECG • Blood Sugar • Lipids • Renal parameter 	DESIRABLE <ul style="list-style-type: none"> • CTA • Echocardiogram 	OPTIONAL <ul style="list-style-type: none"> • MRI/MRA • Holter monitoring
MANAGEMENT				

STROKE ONSET TIME: <4.5 HOURS

ISCHEMIC: *
IV tPA (0-4.5 hrs) or endovascular treatment according to eligibility and availability

HAEMORRHAGIC:
• Dysphagia assessment.
• Blood pressure/blood sugar monitoring and IV fluids.
• Prevention of Pneumonia
• Prophylaxis for deep venous thrombosis etc, monitor and record ECG

* RECOMMENDED DIAGNOSTIC STUDIES

ALL PATIENTS	SELECTED PATIENTS
<ul style="list-style-type: none"> • Noncontrast brain CT or brain MRI • Blood glucose • Oxygen saturation • Serum electrolytes/renal function tests • Complete blood count, including platelet count • Markers of cardiac ischemia • BT, CT, Prothrombin time/INR • Activated partial thromboplastin time • ECG • FLP and carotid doppler (ischemic stroke) 	<ul style="list-style-type: none"> • TT and/or ECT if it is suspected the patient is taking direct thrombin inhibitors or direct factor Xa inhibitors • Liver function tests • Toxicology screen • Blood alcohol level • Pregnancy test • Arterial blood gas test (if hypoxia is suspected) • Chest radiography (if lung disease is suspected) • Lumbar puncture (if subarachnoid hemorrhage is suspected and CT scan is negative for blood) • Electroencephalogram (if seizures are suspected)

STROKE ONSET TIME: >4.5 HOURS

Rapid Assessment, CODE Stroke, Blood pressure and Blood Sugar monitoring, NIHSS, Intravenous lines Endovascular treatment with Mechanical thrombectomy using stent retriever (4.5 hrs to 24hrs) according to eligibility

SECONDARY PREVENTION

Aspirin (in ischemic stroke)
Antihypertensives
Antidiabetics
Lipid lowering agents

REHABILITATION

Physiotherapy
Speech Therapy
Occupational Therapy
Vocational training

DISCHARGE PLANNING

(checklist: drugs, diet, compliance, exercises, health education)

FOLLOW UP at 2nd week, 1st month, 3rd month and 6th month

STROKE UNIT MANAGEMENT

- Medical and Nursing staff : control of blood pressure; control of diabetes; swallow assessment; DVT prophylaxis; antiplatelet drugs
- Rehabilitation staff.
 - » Acute phase: basic bed mobility, transfer techniques, communication training, prevention of complications
 - » Subacute and chronic phase: mobility, gait and balance training, training of activities of daily living (grooming, eating, dressing etc), bowel/bladder training, perceptual and cognitive rehabilitation, provision of assistive devices.

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (stw.icmr.org.in) for more information.
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