Practice Point

Intravenous Thrombolysis In Acute Ischaemic Stroke Practice Points From Current Guidelines

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Thrombolysis remains the single intervention that the largest number of stroke patients can actually receive: it needs no catheter laboratory, no interventionist and no transfer. What it does need is a system that moves fast and a clinician who can decide confidently at the CT console. The points below are written for that moment.

1. The rate-limiting step is the clock, not the scan.

The patient's onset time is the most recent known information, not the time of discovery. Prior to any other action, verify it through a witness. The objective is to treat over half of patients within 30 minutes, with a focus on door-to-needle under 45 minutes and door-to-imaging within 25 minutes (Class 1, B-NR). The 60-minute benchmark, which is well-known, is now a baseline rather than an objective. Each 15 minutes saved results in measurable disability-free survival. The changes that most consistently reduce door-to-needle times are ambulance pre-notification, thrombolysing on the CT table, and keeping the drug in the emergency department rather than the pharmacy. In a patient who has no indication of being coagulopathic (Class 2a), do not wait for coagulation results. In the event that an abnormal value is detected, commence treatment and discontinue the infusion.

2. Who to treat within 4.5 hours.

A disabling deficit with an onset within 4.5 hours (Class 1, Level A) is recommended for thrombolysis, and the only imaging required to administer it is a non-contrast CT that excludes haemorrhage. Advanced imaging is included in the extended windows; waiting for it within 4.5 hours is a net negative.

Regardless of the NIHSS score, administer treatment. The 2026 guideline eliminates severity cut-offs, as severity alone does not qualify or disqualify a patient. What is critical is whether the deficit is incapacitating for the individual. Even at NIHSS 2, a surgeon's isolated hemianopia or hand weakness is incapacitating.

3. Extended and unknown-onset windows

Window	Selection	Strength
0–4.5 h	Disabling deficit; non - contrast CT only	Class 1, Level A
Wake-up / unknown onset	DWI-positive, FLAIR - negative mismatch on MRI, within 4.5 h of symptom recognition	Class 2a, B-R
4.5–9 h from last known well	Salvageable penumbra on automated CT perfusion or MR perfusion mismatch	Class 2a, B-R
4.5–24 h with large-vessel occlusion	Salvageable penumbra, and thrombectomy not available or not feasible	Class 2b, B-R

In our context, the final row is of paramount importance. It validates thrombolysis for patients with a proven large-vessel occlusion and viable tissue who are unable to reach a

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thrombectomy center in a timely manner. Previously, such patients were frequently denied treatment.

4. Choosing and dosing the agent

Tenecteplase now carries the same Class 1 standing as alteplase within 4.5 hours. For most Indian emergency departments it is the more practical choice: a single five-second bolus, no infusion pump, no hour of nursing supervision tied to a syringe driver, no risk of an interrupted infusion during transfer to the ward or to a thrombectomy centre. It is also manufactured domestically and costs considerably less.

Agent	Dose
Tenecteplase	0.25 mg/kg as a single IV bolus over 5 –10 seconds, maximum 25 mg
Alteplase	0.9 mg/kg, maximum 90 mg — 10% as a bolus over 1 minute, remaining 90% infused over 60 minutes

5. Contraindications

Category	Items
Absolute	- Intracranial hemorrhage on CT/MRI - Subarachnoid hemorrhage suspected (even if CT normal) - Intracranial neoplasm AVM, or aneurysm - Intracranial or spinal surgery within 3 months - History of intracranial hemorrhage - Active internal bleeding - Platelets <100,000/mm³ - INR >1.7 or PT >15 sec, aPTT elevated if on heparin - Current use of direct thrombin/Factor Xa inhibitors with abnormal coag tests - Blood glucose <50 mg/dL or >400 mg/dL (treat first, reassess) - CT shows multilobar infarction (hypodensity >1/3 cerebral hemisphere) - Severe uncontrolled hypertension: SBP >185 mmHg or DBP >110 mmHg (must lower first)
Relative	- Minor or rapidly improving stroke symptoms - Seizure at onset with postictal deficits - Major surgery or serious trauma within 14 days - GI or urinary tract hemorrhage within 21 days - Myocardial infarction within 3 months - Stroke within previous months