Suspected Stroke: Activase/ t-PA

Obtain/ Document VS prior to transport

SBP ≥ 185
DBP ≥ 110
YES → Patient must be stabilized BEFORE transport initiated
SBP < 185
DBP < 110

NO

Assess/ Document GCS/ Pupil exam
Nothing by mouth / NPO
Prehospital Stroke Screen
Maintain SaO2 ≥ 92 %

P
Cardiac Monitor
Verify **Activase / t-PA** bolus dose
Verify total dose
Document time infusion initiated
Document estimated time of dose completion
Reassess VS every 15 minutes
Repeat neurological exam every 15 minutes
Obtain BP readings in limb without infusion

Any of following:
Severe headache
Worsening of neurological exam
Nausea / Vomiting
Allergic reaction
Excessive bleeding

P
Stop
IV Activase / t-PA infusion

SBP ≥ 180 and/or DBP ≥ 105
And
NO antihypertensive medication infusion initiated by transferring hospital
YES →
P **Labetalol 10 mg IV / IO**
Contact Medical Control or Receiving Facility

NO

Antihypertensive medication infusion initiated by transferring hospital
YES →
P
Labetalol: Increase 2 mg/min
every 10 minutes
Titrate SBP < 180 mmHg
DBP < 105 mmHg
Maximum 8mg/min
Or
Nicardipine: Increase 2.5 mg/hr
every 5 minutes
Titrate SBP < 180 mmHg
DBP < 105 mmHg
Maximum 15 mg/hr

NO

SBP < 140 and/or DBP < 80
YES →
P
Stop Anti-hypertensive agent
Continue **Activase / t-PA** infusion

NO

P
Reassess VS every 15 minutes
Repeat neurological exam every 15 minutes
Obtain BP readings in limb without infusion

Notify Destination or Contact Medical Control

Adult Medical Protocol Section

Suspected Stroke: Activase / t-PA

Hypertension During t-PA Infusion:
When SPB is ≥ 180 and DBP is ≥ 105 Labetalol 10 mg IV push may be administered. Medical Control or receiving Stroke Center (preferred) should be contacted for further orders concerning blood pressure management after this initial dose. This assumes anti-hypertensive medications are not infusing from transferring hospital.

Nicardipine (Cardene):
Common antihypertensive which may be initiated by transferring facility. Used for blood pressure management.
Calcium channel blocker.

Common reactions:	Adverse reactions:
Headache	AV Block
Peripheral edema	MI
Dizziness	Ventricular Tachycardia
Nausea / vomiting	Angina exacerbation
Tachycardia / palpitations	Allergic reactions

Target SBP and DBP during t-PA administration:
A SBP of 170 – 180 and a DBP of 95 – 105 is a reasonable target range. Main target is to keep SBP < 180 and DBP < 105 during and following tPA administration. While aggressive blood pressure control is warranted during t-PA administration, episodes of hypotension give rise to increased morbidity and mortality. Be cautious in titrating antihypertensive medications with the idea that slow and steady reduction is key. Wide and quick swings in blood pressure can worsen condition.

Hypotension:
Hypotension should be aggressively treated as this can worsen cerebral perfusion pressure and outcomes.

Unless contraindicated keep Head of Bed elevated 20 to 30 degrees.

Pearls

- **Recommended Exam: Mental Status, HEENT, Heart, Lungs, Abdomen, Extremities, Neuro**
- **This protocol is optional. Agencies may develop their own in conjunction with their regional stroke center(s) guidance.**
- **This protocol is intended for interfacility transfer patients only. Medication must be started at initial treating hospital.**
- **Items in Red Text are key performance measures used in protocol compliance.**
- **The Reperfusion Checklist should be completed for any suspected stroke patient.**
- **Time of Onset or Last Seen Normal:**
  - **One of the most important items the pre-hospital provider can obtain, of which all treatment decisions are based.**
  - **Be very precise in gathering data to establish the time of onset and report as an actual time (i.e. 13:47 NOT "about 45 minutes ago.")**
  - **Without this information patient may not be able to receive thrombolytics at facility.**
  - **Wake up stroke: Time starts when patient last awake or symptom free.**
- **Time of Symptom Discovery:**
  - **Time when symptoms of stroke are first noticed by patient, bystanders, witnesses, or family/ caregivers.**
- The differential listed on the Altered Mental Status Protocol should also be considered.
- Be alert for airway problems (swallowing difficulty, vomiting/aspiration).
- Hypoglycemia can present as a localized neurologic deficit, especially in the elderly.
- **Infusion Pump Alarm / No Flow:**
  - Remove drip chamber from Activase / t-PA bag.
  - Spike Activase/ t-PA drip chamber to NS bag.
  - Restart infusion to complete medication remaining in IV tubing.
- **Medication dosing safety:**
  - When IV **Activase/ t-PA** dose administration will continue en route, verify estimated time of completion.
  - Verify with sending hospital that excess **Activase/ t-PA** has been withdrawn from the bottle and wasted.
  - This ensures the bottle will be empty when the full dose is finished. *For example, if the total dose is 70 mg, then 30 cc should be withdrawn and wasted since a 100 mg bottle of **Activase/ t-PA** contains 100 mL of fluid when reconstituted.*
  - Sending hospital should apply a label to **Activase/ t-PA** bottle with the number of mL of fluid that should be in the bottle in case of pump failure during transit.
- **Allergy Anaphylaxis:**
  - **Activase/ t-PA**, is structurally identical to endogenous t-PA and therefore should not induce allergy, single cases of acute hypersensitivity reactions have been reported.
  - ***Angioedema:***
    - Rapid swelling (edema) of the dermis, subcutaneous tissue, mucosa and submucosal tissues. Typically involves the face, lips, tongue and neck.
    - Almost always self limiting but may progress to interfere with airway / breathing so close monitoring is warranted.
  - Utilize the Allergy / Anaphylaxis Protocol as indicated and also for angioedema. Infusion should be stopped.
  - Give all medications related to the Allergy/ Anaphylaxis Protocol by IV route only as patient should remain NPO.