Stroke Inter-facility Transfer Guidelines

EMS Transfer of Acute Ischemic Stroke with Thrombolytic Infusing/ Post Thrombolytic infusion

Document Vitals prior to transport and verify if SBP<180 mm Hg and DBP <105 mm Hg

- If BP above limits, sending hospital should initiate antihypertensive medications, and EMS transport should continue to monitor and treat blood pressure during transport.

Blood pressure management – goal < 180 mm Hg systolic, <105 mm Hg diastolic – Call Medical Control for systolic/diastolic exceeding these parameters.

Recommended BP Control:

If BP > 180/105 mmHg:

▪ Labetolol [Normodyne] 10 mg IV push over 1 minute x 1 followed by continuous IV infusion 2-8 mg/min; Do NOT give if pulse less than 65.

▪ If Labetolol [Normodyne] ineffective and SBP>180 mm Hg and/or DBP>105 mm Hg initiate Nicardipine [Cardene] IV infusion at 5 mg/hour. Titrate until SBP<180mm Hg and/or DBP<105 mm Hg by 2.5 mg/h every 10 minutes (Maximum dose 15mg/hour).

Verify total dose and time of IV Thrombolytic [Activase/Tenecteplase] bolus

- If dose complete prior to transport, verify and document time of completion
- If IV Alteplase (Activase) dose administration will continue en route:
  - o Verify estimated time of completion
- If IV Alteplase (Activase) dose completed en route attach 50 ml Normal Saline and continue at same rate
  - o Document and notify receiving RN of time dose completed

Monitoring

Document vital signs:BP, HR, pulse ox monitoring
Every 15 minutes for the first 2 hours
Every 30 minutes for the next 6 hours

Document neuro checks (Glascow Coma Scale, Pupil Assessment, Focal Deficit)
Every 15 minutes for the first 2 hours
Every 30 minutes for the next 6 hours

For any acute worsening of neurological condition, or if patient develops new headache, acute hypertension, nausea or vomiting, call medical control (receiving physician) for further instructions. If IV Alteplase (Activase) is being administered, **discontinue IV Alteplase [Activase] infusion** immediately.

Monitor for signs of bleeding and angioedema (orofacial swelling). If Angioedema noted, call medical control [receiving physician). If IV Alteplase (Activase) is being administered, **discontinue IV Alteplase [Activase] infusion** immediately.

Angioedema recommended treatment:

- Administer IV methylprednisolone 125 mg
- Administer IV diphenhydramine 50 mg. Administer ranitidine 50 mg IV or famotidine 20 mg IV. If there is further increase in angioedema, administer epinephrine (0.1%). 0.3 mL subcutaneously or by nebulizer 0.5 mL

Completion of IV Alteplase (Activase) infusion –
Infuse 50 ml Normal saline at same rate to ensure all drug delivery

Reference: Powers, W.J, et al (2019) Guidelines for Management of Acute Ischemic Stroke: 2019 Update
Connolly, E.S. et al. (2012) Guidelines for the management of aneurysmal subarachnoid hemorrhage
Greenberg, S.M., et al. (2022) Guidelines for the Management of Patients with Spontaneous Intracerebral Hemorrhage

Provide copy of monitoring and treatment provided during transport to receiving RN at accepting facility.
EMS Transfer of Patients with Hemorrhagic Stroke
Heart Rate, Blood Pressure, pulse ox monitoring
Document vital signs every 15 minutes
Document neuro checks (Glascow Coma Scale, Pupil Assessment, Focal Deficit) every 15 minutes
Intracerebral Hemorrhage Blood pressure management – goal ~ 130 – 150 mm Hg Systolic, Call medical control for systolic exceeding these parameters **Subarachnoid Hemorrhage: Systolic blood pressure to <160 mm Hg is reasonable *(Class IIa; Level of Evidence C).*** Recommended treatment for hypertension with Labetalol 10 mg over 1 – 2 min x1. Communicate response to treatment. If Labetalol ineffective, anticipate initiation of Nicardipine drip, 5 mg/hour, may be increased 2.5 mg every 5 min to a maximum of 15mg/hr
Contact medical control for systolic BP < 110/50 mm Hg, or heart rate < 50
Monitor for signs of increasing intracranial pressure (Change in LOC, increasing pulse pressure, abnormal posturing, change in pupils)
Elevate head 30 degrees
Monitor for changes in ability to maintain airway
Transfer of Ischemic Stroke without IV Thrombolytic
In patients with BP ≥220/120 mm Hg who did not receive IV Thrombolytic or EVT and have no comorbid conditions requiring acute antihypertensive treatment, the benefit of initiating or reinitiating treatment of hypertension within the first 48 to 72 hours is uncertain. It might be reasonable to lower BP by 15% during the first 24 hours after onset of stroke.

Reference: Powers, W.J, et al (2019) Guidelines for Management of Acute Ischemic Stroke: 2019 Update
Connolly, E.S. et al. (2012) Guidelines for the management of aneurysmal subarachnoid hemorrhage
Greenberg, S.M., et al. (2022) Guidelines for the Management of Patients with Spontaneous Intracerebral Hemorrhage

Guidelines for Transferring Facility:

THE FOLLOWING DOCUMENTS/INFORMATION SHOULD BE SENT WITH THE PATIENT AT THE TIME OF TRANSFER:

Ischemic Stroke w/ Thrombolytics:

ED documentation that includes assessments and treatments provided to include:

- Time last known well
- NIHSS and vital signs prior to IV Thrombolytic administration
- Total dose of IV Thrombolytic administration.
- Time of bolus dose [Activase (Alteplase) / Tenecteplase] and initiation of infusion [Activase (Alteplase)
- Vital signs every 15 minutes after IV Thrombolytic administration
- Time of IV Alteplase [Activase] infusion dose completed (if completed prior to transfer attach 50cc Normal Saline and continue at same rate)
- A copy of monitoring and treatment provided during transport.

Reference: Powers, W.J, et al (2019) Guidelines for Management of Acute Ischemic Stroke: 2019 Update

Connolly, E.S. et al. (2012) Guidelines for the management of aneurysmal subarachnoid hemorrhage

Greenberg, S.M., et al. (2022) Guidelines for the Management of Patients with Spontaneous Intracerebral Hemorrhage