Blood Pressure Management Protocol for Acute Stroke[IB1]

IV Thrombolytic Therapy (Alteplase) Patient

Patient is otherwise eligible for IV Alteplase except BP >185/110 mmHg

- Systolic >185mmHg and/or Diastolic >110mmHg
  - Labetalol 10 to 20 mg IV over 1 to 2 minutes, may repeat x 1 (do not use in asthmatics); **OR**
  - Nicardipine infusion, 5mg/hr titrate up by 2.5 mg/hr at 5 to 15-minute intervals, maximum dose 15mg/hr, when desired BP attained, adjust to maintain proper BP limits; **OR**
  - Clevidipine 1-2mg/hr IV, titrate by doubling the dose every 2-5 minute intervals. Maximum dose of 12mg/hr.
  - ***If blood pressure is not maintained at or below 185/110mmHg, DO NOT administer thrombolytic therapy.***

Management of BP during and after treatment with IV Alteplase

Maintain BP at or below 180/105 for at least the first 24 hours after IV Alteplase treatment
Monitor BP every 15 minutes for 2 hours from the start of IV Alteplase therapy, then every 30 minutes for 6 hours, then every hour for 16 hours.

- If Systolic >180 to 230mmHg or Diastolic 105 to 120mmHg
  - Labetalol 10mg IV followed by continuous IV infusion 2-8 mg/min (do not use in asthmatics); **OR**
  - Nicardipine 5mg/hr IV, titrate up to desired effect by 2.5mg/hr every 5 to 15 minute intervals, maximum dose 15mg/hr; **OR**
  - Clevidipine 1-2mg/hr IV, titrate by doubling the dose every 2-5 minute intervals. Maximum dose of 12mg/hr.
  - If BP not controlled or diastolic BP >140 mmHg, consider IV sodium nitroprusside
  - **Maintain BP below 180/105mmHg for at least first 24 hours after IV Alteplase treatment**

Different treatment options may be appropriate in patients who have co-morbid conditions that may benefit from acute reductions in BP such as an acute coronary event, acute heart failure, aortic dissection or pre-eclampsia/eclampsia.

Non-Thrombolytic Therapy (Alteplase) Patient

Most patients do not require treatment for hypertension following acute stroke; however, it is generally agreed that patients with markedly elevated BP may have their BP lowered. A reasonable goal would be to **lower BP ~ 15% during the first 24 hours after onset of stroke**. The level of BP that would mandate such treatment is not known, but consensus exists that **medications should be withheld unless the systolic BP is >220mmHg or the diastolic BP is >120mmHg**. Avoid hypotension.

Acute Intracerebral Hemorrhage

ICH patients presenting with SBP between 150 and 220 mmHg without contraindications to acute BP treatment, lowering SBP to 140 is safe.
ICH patients presenting with SBP > 220 mmHg consider aggressive reduction of BP with continuous IV and every 15 minute vital sign assessments unless otherwise indicated by medication recommendations.

- Labetalol 10 to 20 mg IV over 1 to 2 minutes, may repeat x 1 (do not use in asthmatics); **OR**
- Labetalol 10mg IV followed by continuous IV infusion 2-8 mg/min (do not use in asthmatics); **OR**
- Nicardipine infusion, 5mg/hr titrate up by 2.5 mg/hr at 5 to 15 minute intervals, maximum dose 15mg/hr, when desired BP attained, adjust to maintain proper BP limits

Powers, W.J MD; Rabinstein, A.A. MD, et al. (2018). Guidelines for the early management of patients with acute ischemic stroke: A guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke 2018 e46-e99.* Hemphill III, J. Claude, MD., Greenberg, Steven M. MD, & Anderson, Craig S. MD, et. al. (2015). Guidelines for the management of spontaneous intracerebral hemorrhage: A guidelines for healthcare professionals from the American Heart Association/American Stroke Association. Stroke.