Interfacility Protocol

Protocol Title: Cerebrovascular Event
Original Adoption Date: March 23, 2015
Past Protocol Updates: N/A
Date of Most Recent Update: N/A
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I. PURPOSE: To outline the management of patients suffering from cerebrovascular illness or cerebral trauma

II. SUPPORTIVE DATA: Cerebrovascular illness includes two clinical syndromes: ischemic cerebrovascular disease and hemorrhagic cerebrovascular disease. Ischemic cerebrovascular disease is also known as ischemic stroke or cerebral infarction and may occur either from thrombosis that formed at the injury site or an embolic obstruction. Hemorrhagic cerebrovascular disease is often the result of bleeding either into the parenchyma of the brain or into the subarachnoid space. Cerebral injury is often associated with trauma caused by a variety of injury mechanisms.

III. Procedures:
   a. Follow initial protocol for all patients
   b. Consider other causes for altered mental status ((i.e. hypoglycemia, toxicology or seizure)
   c. Avoid nasal intubation and nasogastric tube placement
   d. Avoid paralytics except for intubation
   e. Maintain ETCO2 between 30-35 mmhg if patient is intubated
   f. Use pain medications and sedatives cautiously
   g. Perform Blood Glucose Testing and treat as appropriate if <60 mg/dl.
      i. Administer 50% DEXTROSE 25 G IV and observe for changes
   h. For the following values, treatment should be considered:
      i. Systolic greater than 180 mmHg
      ii. Diastolic greater than 110 mmHg
      iii. MAP greater than 130 mmHg (Do not lower more than 20% in one hour)
IV. Hemorrhagic Cerebrovascular Illness/Injury
   a. Consider elevating head of cot 30° for assessment and transport
   b. Titrate isotonic fluid administration to maintain a MAP of between 90-100 mmHg to facilitate adequate cerebral perfusion pressure
      i. If patient is hypertensive, consider treatment with an Anti-hypertensive:

V. Ischemic Cerebrovascular Illness
   a. If patient is receiving a thrombolytic therapy, observe for complications
      i. Examples of thrombolytics: Lanoteplace, Reteplase, Staphylokinase, Streptokinase, Tenecteplase, Urokinase.
   b. Elevate head of cot 0-15 ° unless patient exhibits elevated Intracranial pressure (ICP) or Mean Arterial Pressure (MAP). Then elevate head of bed 30° for assessment and transport.
   c. Titrate isotonic fluid administration to maintain a MAP of between 90-100 mmHg to facilitate adequate cerebral perfusion pressure (CPP).
      i. If patient is hypertensive, consider treatment with an Anti-hypertensive:

VI. Antihypertensives:
   a. **Hydralazine 5-10 mg IVP** may repeat every 15 minutes. Re-check blood pressure every 5 minutes.
   b. **Nitroglycerine** infusion, starting at 10 mcg per minute; titrate to effect increasing dose by 5 mcg per minute increments with re-checking blood pressure every 5 minutes.
   c. **Metoprolol** 5 mg IV over 2 minutes provided heart rate >60 and blood pressure > 100 mm/Hg systolic. Repeat every 5 minutes to max dose of 15mg. Re-check blood pressure every 5 minutes.
   d. **Nicardipine (Cardene)** When supplied or initiated by the sending facility, infusion may be initiated at 5 mg/hr or increased by 2.5 mg/hr every 15 minutes to a maximum dose of 15 mg/hr. Re-check blood pressure every 5 minutes.
   e. **CAUTION**: Do not administer Metoprolol to patients suspected or known to be using Cocaine or Methamphetamine.
   f. **CAUTION**: Hydralazine may cause reflex tachycardia. If observed, contact medical control immediately and consider treatment with Metoprolol.