Acute Stroke Protocol and Thrombolysis

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Disclosures

• None
What is the most important thing that you need to do thrombolysis?
Teamwork!!!
• Starts outside the hospital  
  – Prenotification  

• Smooth transition from pre-hospital to ER  
  – Physician, Nursing and CT coordination  

• Transition from ER to Acute Stroke Unit  
  – Exit strategy to get out of the ER
How many people does it take to save one stroke patient?
The Team

- Patient, family
- Two paramedics
- EMS dispatcher
- Hospital operator
- ER charge nurse
- ER physician
- Stroke physician
- Radiologist

- One ER nurse
- CT technologist
- Charge nurse Acute Stroke Unit
- Charge nurse Critical Care Unit
Over 10 people coordinated before patient arrives at ER
Teamwork, coordination, speed
In ER

• First Goal: Door to CT in 15 minutes (or less)
  – History and Exam
  – Two IVs
What can wait?

- ECG
- Foley
- Bloodwork? (unless on warfarin or concern for thrombocytopenia)
History

• **Last Seen Normal**
  – When did it start?
  – How long did it take to get to its worst?

• What are the deficits and how did they evolve?

• Don’t settle for “confusion”
Patient “Confused”

• “Confusion” is not a stroke symptom

• Be precise!!!

• Alertness, attention, language, neglect
Door to CT *in 5 minutes*

- https://www.youtube.com/watch?v=Un0HienMwnU
How to read CT

• One of the most critical skills for a stroke-treating physician

• If you can’t read your own scan, treatment will be delayed, or not happen

• Non-radiologists need to recognize acute stroke and acute hemorrhage
Case 1. Right Middle Cerebral Artery Infarct

- Note the large hypodensity “wedge” of the RMCA territory infarction
- The Anterior (yellow) and Posterior (red) Cerebral Artery territories are spared
Case 2

- Another RMCA stroke
- Note the bright horizontal line where the RMCA is supposed to be
- “Hyperdense sign”
  - This suggests acute thrombus
Middle cerebral artery
Case 3

- 50 yr M (RHD) left hemiparesis (lower face, arm, leg), left side sensory loss, left homonymous hemianopia, gaze preference to right, neglects left side
- Localizes to RMCA territory
24 hours later
Who gets IV tPA?

• Deficits are significant
  – NIH Stroke Scale score usually greater than 5

• LSN within 4.5 hours

• No contraindications
IV tPA contraindications

• Absolute:
  – Any bleeding in head or other major hemorrhage
IV tPA contraindications

• Relative:
  – Hx of ICH
  – Previous stroke/head or spine trauma 3 months
  – Major surgery within 14 days
  – Arterial puncture in noncompressible site within 7 days
• BP > 180/105
• Glucose < 2.7 or > 22.2
• INR > 1.7
• Plts < 100
Post-tPA care

• Small risk for angioedema
  – Should you stop IV tPA if angioedema?

• IV tPA’s biological effect wears off within about 5 to 6 hours

• Get rid of Foley ASAP

• Critical Care Unit
ASP and Thrombolysis: Summary

- Teamwork is essential
- History and Exam
- Read your own CT
- IV tPA contraindications and post-infusion care