


ED Stroke Patient Management:
What must we be able to do in order to provide tPA in the ED (mimickers, stroke scales, and CT interpretation)?

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**EMRA Meeting
ACEP SA**


**New Orleans, LA
October 15-18, 2006**

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Key Clinical Questions

- You are obliged to be able to give tPA...
- What diagnostic skills?
- What use of stroke scales?
- What CT interpretation skills?
- What IV tPA use skills?

Diagnostic Skills

- Identify a stroke
- Start with the Cincinnati stroke scale
- Identify speech and language deficit
- Identify hemiparesis
- Identify CN deficits c/w stroke
- Consider mental status changes

Diagnostic Skills

- Exclude toxic/metabolic causes
- Exclude seizure syndromes
- Exclude TIAs
- Is the deficit significantly improving during the time that you are preparing to give IV tPA?

Stroke Scales Use

- Estimate the severity of the stroke
- Know what patients were treated in the NINDS clinical trials
- Be able to identify significant or moderate stroke
- Consider use in elderly pts with severe stroke (NIHSS > 20) and AFib

NIHSS: LOC

- LOC overall 0-3 pts
- LOC questions 0-2 pts
- LOC commands 0-2 pts

- LOC: 7 points total

NIHSS: Cranial Nerves

- Gaze palsy 0-2 pts
- Visual field deficit 0-3 pts
- Facial motor 0-3 pts

- Gaze/Vision/
Cranial nerves: 8 points total

NIHSS: Motor

- Each arm 0-4 pts
- Each leg 0-4 pts

- Motor: 8 points total
 (8 right, 8 left)

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NIHSS: Cerebellar

- Limb ataxia 0-2 pts

- Cerebellar: 2 points total

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NIHSS: Sensory

- Pain, noxious stimuli 0-2 pts

- Sensory: 2 points total

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NIHSS: Language

- Aphasia 0-3 pts
- Dysarthria 0-2 pts

- Language: 5 points total

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NIHSS: Inattention

- Inattention 0-2 pts

- Inattention: 2 points total

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NIHSS Composite

- CN (visual): 8
- Unilateral motor: 8
- LOC: 7
- Language: 5
- Ataxia: 2
- Sensory: 2
- Inattention: 2

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Four Main NIHSS Areas

- **CN/Visual:** Facial palsy, gaze palsy, visual field deficit
- **Unilateral motor:** Hemiparesis
- **LOC:** Depressed LOC, poor responsiveness
- **Language:** Aphasia, dysarthria, neglect
- **28 total points**

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NIHSS ED Estimate

- **CN (visual):** 8
- **Unilateral motor:** 8
- **LOC:** 8
- **Language/Neglect:** 8

- **Mild: 2, Moderate: 4, Severe: 8**
- **+/- Incorporates other elements**

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NIHSS Patient Estimate

- **CN/Visual:** R vision loss, no fixed gaze 4
- **Unilateral motor:** hemiparesis 8
- **LOC:** mild decreased LOC 2
- **Language:** speech def, neglect 4

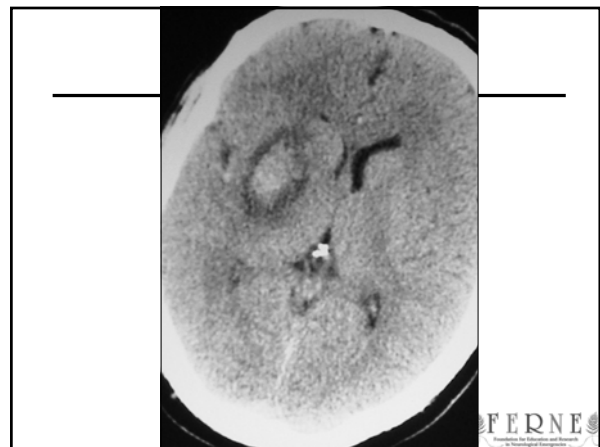
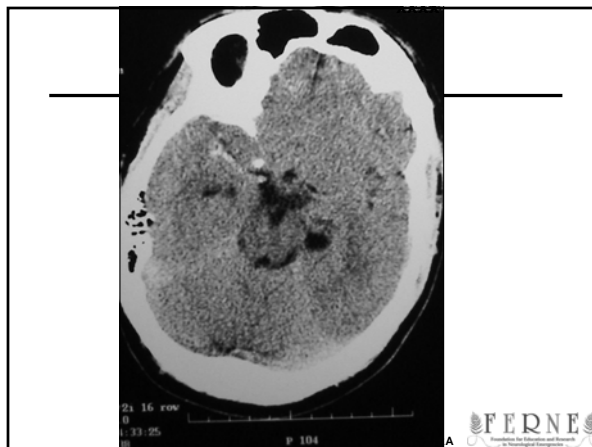
- **Approx 18 points total**
- **Moderate to severe stroke range**

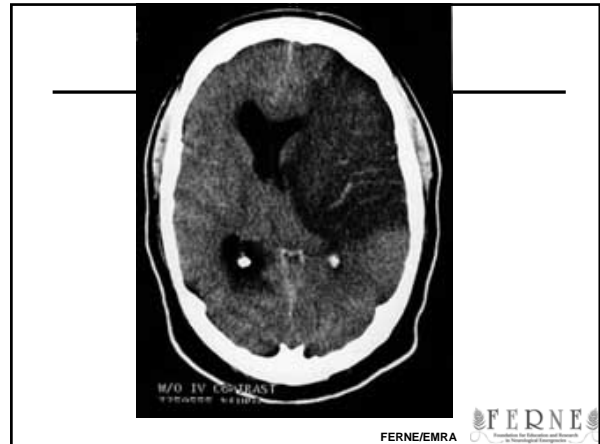
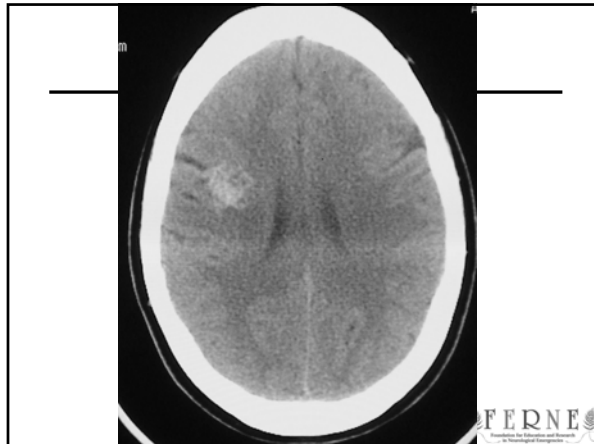
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CT Interpretation Skills

- **No insular ribbon or MCA sign**
- **No detailed assessment**
- **Identify asymmetry and edema**
- **Identify blood, mass lesion**
- **Identify any area of hypodensity c/w a recent stroke of many hours duration that precludes IV tPA use**

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IV tPA Use Skills

- Identify indications, contraindications
- Quickly get the tests and consults
- Communicate with the neurologist
- Obtain consent with family and know what statistics are relevant
- Document the interaction
- Maintain BP below 185/110 range
- Follow the NINDS protocol closely

ED tPA Documentation

- With tPA, there is a 30% greater chance of a good outcome at 3 months
- With tPA use, there is 10x greater risk of a symptomatic ICH (severe bleeding stroke)
- Mortality rates at 3 months are the same regardless of whether tPA is used
- What was the rationale, risk/benefit assessment for using or not using tPA?
- What was done to expedite Rx, consult neurology and radiology early on?

Conclusions

- The IV tPA skill set is identified, limited, and manageable
- It is possible to provide quality emergency services with IV tPA
- Identify good patient candidates
- Make it happen quickly
- Document the ED management

Questions?

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