



## Stroke Care 2006: Clinical Consensus and Opportunities

### Meeting Agenda

7:00 – 7:20 pm      Welcome / FERNE Introduction/Meeting Introduction  
Audience Questions & Survey  
Andy Jagoda, MD and Edward Sloan, MD

During this session, FERNE and the meeting will be introduced. The following questions will also be asked of the audience prior to the presentation of the case.

### Case & Questions

7:20 – 7:45 pm      Stroke in the Prehospital and ED Settings:  
Should EMS triage and inter-hospital transfer to stroke centers  
take place? Why? When? How?  
Andy Jagoda, MD

A 62 year-old professor has an apparent stroke while teaching at the local community college. EMS is called, and contact to the local EMS base station occurs within 15 minutes of the onset of symptoms. The gentleman has R facial weakness, slurred speech, neglect of his R visual field, and is unable to purposefully move his R arm and R leg. He can be at the closest comprehensive ED within 30 minutes of the time of symptom onset.

Regarding EMS triage, should this patient be:

- a. Transported to the closet hospital with a comprehensive ED,
- b. Diverted to the closet primary stroke center,
- c. Diverted to the closet tertiary medical center that possesses 24/7 interventional radiology capabilities?
- d. Diverted to the closet tertiary stroke center?
- e. Asked to finish his class first?

**If this patient is transported to the closest comprehensive ED, which of the following best describes circumstances when transfer to a tertiary center should take place for this stroke patient?**

- a. There are no indications for inter-hospital transfer to take place.
- b. Transfer should take place only if IV tPA is not indicated and CNS arterial thrombolytic therapy or thrombus removal is likely.
- c. Transfer should take place for all patients if the time from symptom onset is between three and ten hours in order to allow advanced diagnostics to be provided acutely.
- d. Transfer to a primary stroke center should take place for all stroke patients, regardless of the time of symptom onset, whether IV tPA has been provided, and whether an acute clot intervention is contemplated.
- e. I have no idea when inter hospital transfer should take place.
- f. The financial impact of such a decision is too much to bear on a Friday night dinner meeting.

**7:45 – 8:10 pm      Stroke Patient and New Stroke Therapy Assessment:  
NIHSS & Stroke Scales in Patient and Stroke Therapy  
Assessment  
J. Steven Huff, MD**

**An Emergency Medicine physician evaluates this patient immediately upon arrival to the ED. Which of the following is true regarding the use of the NIHSS in evaluating stroke severity and the indications for various stroke therapies?**

- a. Every emergency physician should know how to calculate the NIHSS for patients such as this one, since it is the standard of care for determining stroke severity and the need for any and all stroke therapies.
- b. It is obvious how severe this patient's stroke is, and it can be determined clinically the need for all potential stroke therapies without actually calculating the NIHSS.
- c. The NIHSS can be reliably estimated by determining symptom severity in four categories: motor, speech, mental status, and visual/neglect.
- d. The NIHSS is a research tool that can be calculated retrospectively as needed as long as the neurological exam is documented appropriately.
- e. When I am considering IV tPA, I just quickly calculate the NIHSS using Internet tools.
- f. What does NIHSS stand for, anyways?

**What is the approximate NIHSS of this patient?**

- a. 0-5
- b. 5-10
- c. 10-15
- d. 15-20
- e. Greater than 20

**Regarding the use of stroke outcome scales such as the Modified Rankin Scale or the Barthel Index, which of the following is your clinical approach?**

- a. I use these scales in assessing stroke severity in the ED.**
- b. I understand the MRS and the BI, and I use them to help in assessing the effectiveness of new stroke therapies from published clinical trials.**
- c. I do not have any idea how these outcome scales are utilized, either in the ED or after hospital disposition.**
- d. These scales correlate with the NIHSS, making their use superfluous.**
- e. I have not ever heard of these scales, let alone use them!**

**8:10 - 8:20 pm      Break**

**8:20 – 8:45 pm      Stroke Care within the 3 Hour Window for tPA Use:  
What do we do? What should we do?  
E. Bradshaw Bunney, MD**

**This patient is deemed to have a stroke of moderate severity and is a suitable candidate for thrombolytic therapy with IV tPA . Which of the following is your viewpoint regarding the use of IV tPA given the published efficacy data?**

- a. If IV tPA is indicated, I use it because the clinical data support its use and I am adequately supported in its use.**
- b. Although I am not opposed to the use of tPA, I do not use it often because patients rarely meet the criteria for use in the ED.**
- c. I try not to use tPA because the published efficacy data does not adequately support its use and because I am not well supported to use it.**
- d. I simply am so concerned about the risk of a symptomatic ICH that I cannot bear to use this drug when treating ischemic stroke patients such as this one.**
- e. I leave the tPA use decision to the stroke team or neurology consultant.**
- f. Haven't we discussed tPA enough already?**

**Regarding the reanalysis of the NINDS tPA clinical trial data and the phase IV tPA use data, which of the following describe your understanding of the info?**

- a. I understand that the reanalysis of the NINDS data suggests that there is a real treatment effect and that the phase IV data confirms that the outcomes in the NINDS study can be replicated in clinical practice.**
- b. I know that the NINDS clinical trial data was confirmed, but the numbers are too small to allow for widespread clinical use, even with confirmatory phase IV clinical data.**
- c. I have trouble believing phase IV reports, since they are inherently biased, making the use of tPA still somewhat experimental in my practice.**
- d. I do not have enough familiarity with the reanalysis or the phase IV publications, such that I have not changed my tPA clinical practice.**
- e. Why was the data reanalyzed, and what is a phase IV study?**

**8:45 – 9:10 pm      Stroke Care After the 3 Hour Window for tPA use:  
What are the options? What should we do?  
Thomas G. Brott, MD**

**Many diagnostic tests are available when attempting to intervene positively in acute stroke patients. If the initial CT is negative for hemorrhage, how do you utilize tests such as MRI, MRA, CTA, or cerebral angiography when treating stroke patients?**

- a. I do not know when these tests are indicated in acute ischemic stroke patients, and so do not order them in the ED.**
- b. I am aware that these tests may enhance the ability to diagnose the vascular lesion responsible for the stroke, but I rely on my neurology consultants to determine the need for these tests.**
- c. I know that these tests are most useful when considering advanced stroke therapies such as IA thrombolysis or clot retrieval, and only order them when the patient is due to have an interventional radiology procedure.**
- d. I order these tests often in order to expedite the diagnostic workup of my ED stroke patients, even if they do not receive an acute interventional radiology procedure.**
- e. Have any of these diagnostic tests been proven to be effective at improving outcome in stroke patients?**

**There are many options that exist after the three-hour IV tPA window, including IA thrombolysis, the Merci clot retrieval device, and devices that enhance cerebral blood flow. What is your clinical practice regarding these advanced stroke therapies?**

- a. I do not have a clear understanding of these advanced therapies, and do not access them for my stroke patients.**
- b. I know of these therapies, but my understanding is that they are experimental in nature and are not a part of the standard of care.**
- c. I have noted these therapies used by my neurology consultants on occasion, but I am not sure of the indications for their use.**
- d. I understand the utility of these interventions, and I aggressively pursue them for my stroke patients who do not meet the IV tPA criteria.**
- e. Have any of these therapies been proven to be effective in any published clinical trials?**

**9:10 – 9:35 pm      Stroke Patient Management in the ED:  
Clinical Guidelines and Neuroprotection Strategies  
Edward P. Sloan, MD**

**Regarding ischemic stroke patients, what is your understanding and use of clinical guidelines?**

- a. I am not aware of any clinical guidelines that direct my care of ischemic stroke patients.**
- b. I am sure that there are guidelines that exist from organizations such as the American Stroke Association, but I do not use them because primarily my neurology consultants utilize these guidelines.**
- c. I am familiar with guidelines that direct stroke patient care, and I refer to them on occasion in order to optimize my acute care.**
- d. I follow clinical guidelines and protocols in my ED because our hospital has integrated them into clinical policies for the institution.**
- e. I wish that there were guidelines that would direct my treatment of stroke complications such as elevated blood pressure.**

**Regarding neuroprotection in acute ischemic stroke patients, what is your understanding of current optimal therapies?**

- a. I am not aware of any specific neuroprotection therapies for ischemic stroke patients.**
- b. I believe that the only useful therapies involve blood pressure and glucose management in the majority of stroke patients.**
- c. Besides BP and glucose control, I consider optimal cerebral blood flow to be another critical neuroprotectant, and I pursue aggressive thrombolysis and clot retrieval of the target vessel in order to achieve it.**
- d. I am aware of the trials of specific neuroprotectants, and I utilize them in my clinical practice.**
- e. I do not believe that neuroprotection is possible. Once the initial damage is done, there is no way to protect the infarct zone or ischemic penumbra.**

**9:35 – 9:55 pm      Bonus Questions, FERNE Survey, Questions and Answers**

**Bonus Questions:**

**Consider if this patient had presented to the Emergency Department two weeks prior to this visit with numbness in his R hand and some dizziness. What would be your approach to this patient given a presumed TIA?**

- a. I admit all TIA patients regardless of the severity of the symptoms.**
- b. I only admit those patients who have clear motor weakness or visual symptoms (amaurosis fugax) because of a greater stroke risk.**
- c. I might consider sending this patient home, but only if I have completed a cranial CE and an evaluation of the carotids (Doppler, CTA, MRA).**
- d. I would send this patient home with aspirin therapy and arrange that a physician complete a TIA work-up as an outpatient.**
- e. I don't really have an opinion on what to do with this TIA patient, and so would depend on my neurologist for a disposition decision.**

**Consider if this patient had been on warfarin and had an intracerebral hemorrhage of the left temporal lobe of 3 cm diameter associated with moderate edema and mass effect. What might be your management of this ICH patient?**

- a. I would admit this patient to neurosurgery for further orders.**
- b. I would transfer this patient to another hospital because I don't have neurosurgery coverage and/or it is our institution's protocol.**
- c. I would be able to manage BP, ICP, the airway, and ICH complications in the ED prior to disposition to another service for admission.**
- d. Not only would I manage the patient as in (c.) above, I would also discuss the use of Factor VIIa with neurosurgery in this ICH patient's care.**
- e. I am aware of ICH management guidelines, including those that govern the care of patients with an elevated INR, and would follow these guidelines in managing this patient.**

**10:00 pm              Adjourn**