

EMS Triage and ED Stroke Patient Transfer: What Strategies Optimize the Diagnosis, Treatment, and Outcomes of Ischemic Stroke Patients?

J. Stephen Huff, MD, FACEP

Learning Objectives

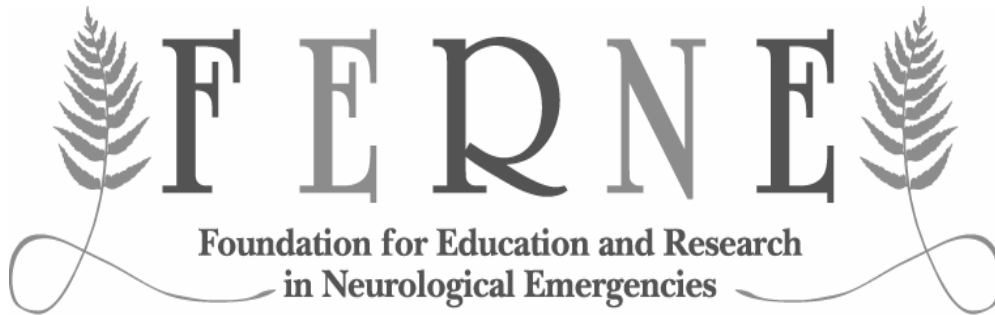
- Establish the key concepts that guide the decision making in the diagnosis and treatment of acute ischemic stroke patients.
- Evaluate stroke care systems, the role of tertiary and stroke centers, prehospital triage, and ED patient transfer in the management of acute ischemic stroke patients.
- Determine what data must be provided to practitioners in order to better understand which patients will benefit most from EMS triage or ED transfer to specialty centers for advanced diagnostics and therapeutics.

Background

Although IV tPA can be provided to acute ischemic stroke patients in most comprehensive EDs, advanced diagnostic and therapeutic modalities are most often available only in specialty centers. Which patients are triaged or transferred to these centers depends on a better understanding of what capabilities exist in these centers and how they can be accessed in order to improve stroke patient outcomes.

Key Clinical Questions

- What EMS triage protocols exist for prehospital stroke patients?
- What patients are selected for selective EMS triage, to where are they transferred, and why?
- What is the outcome enhancement of these EMS triage protocols?
- Should EMS direct triage to stroke specialty centers be done because of advanced stroke care capabilities at specialty centers?
- Which stroke patients should be transferred between hospitals for advanced stroke diagnostics and therapies that are not universally available?
- Have the demographics and outcomes of stroke patients who are transferred between hospitals for advanced diagnostics and therapeutics been published, and what does the data suggest?



Stroke Patient Systems of Care: What Systems and Methodologies Exist Nationally that Optimize the Care of Stroke Patients?

E. Bradshaw Bunney, MD, FACEP

Learning Objectives

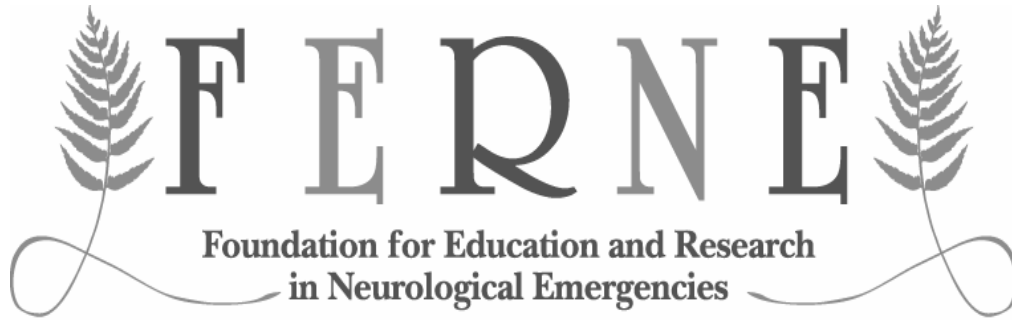
- Establish the key concepts that guide the decision making in the diagnosis and treatment of acute ischemic stroke patients.
- Evaluate stroke care systems, the role of tertiary and stroke centers, prehospital triage, and ED patient transfer in the management of acute ischemic stroke patients.
- Discuss which attributes of successful stroke care systems enhance outcome, such that they can be replicated in other systems and institutions for stroke patient benefit.

Background

Advanced stroke diagnostics and therapeutics are available both in JCAHO designated stroke centers and tertiary centers. Stroke care systems utilize triage and transfer protocols and cutting edge technologies in order to optimize the initial evaluation and subsequent management of acute ischemic stroke patients. How stroke center designation, management protocols, and technologies such as robotics and telemedicine enhance patient outcome in 2007 needs to be fully understood.

Key Clinical Questions

- What is the current status of primary stroke center designation?
- What is the current status of tertiary stroke center designation?
- What regional or national stroke systems currently exist?
- What networks for evaluation, consultation, and transfer exist?
- How are telemedicine systems utilized in these stroke systems?
- What research protocols are utilized by these stroke care systems?
- How do these stroke care systems relate to the newly formed NETT?
- Do these systems treat ischemic and hemorrhagic stroke patients?
- What are the documented benefits and outcome enhancements for stroke patients who are treated in these systems?



Advanced ED Stroke Patient Diagnostics: Can the Use of CTA, MRI, MRA, & Perfusion Studies Be Utilized to Improve Patient Care?

Andrew Asimos, MD, FACEP

Learning Objectives

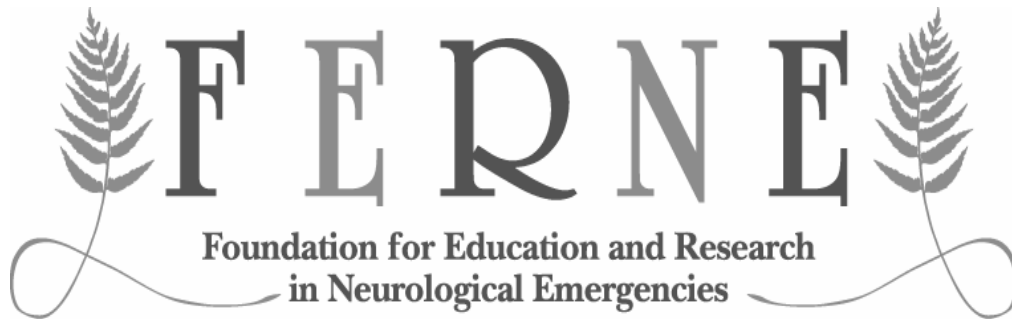
- Establish the key concepts that guide the decision making in the diagnosis and treatment of acute ischemic stroke patients.
- Consider how CT, CTA, MRI, MRA, transcranial Doppler, and perfusion studies can be used by emergency physicians in order to optimize IV tPA use, interventional radiology referral, and ED transfer to stroke specialty centers.
- Discuss which patient characteristics and study results available to ED physicians correlate with the greatest chance for revascularization and improved stroke patient outcome.

Background

Diagnostics such as CTA and transcranial Doppler detect the site of CNS vascular occlusion, and CT and MR perfusion the physiologic state of the infarct core and ischemic penumbra. How these tests should be utilized by emergency physicians to determine the use of IV tPA, disposition for interventional radiology, and transfer for specialty care must be understood in order to maximize stroke patient outcomes.

Key Clinical Questions

- What is the role of CT and MR neuroimaging in the initial diagnosis of ED stroke patients?
- How can advanced diagnostics be utilized to detect the site of the vascular occlusion, the size of the ischemic penumbra and infarct core, the use of IV tPA, and the triage of ED stroke patients for advanced IR therapeutics?
- What softwares, technologies and protocols are necessary in order to allow these diagnostics to be used by emergency physicians when deciding the use of IV tPA and other stroke therapeutics in their Emergency Departments?
- What advanced diagnostics are the standard of care in 2007, and why?



Advanced Stroke Patient Therapeutics: How Can These Modalities be Accessed and Utilized by Emergency Physicians in Order to Improve Patient Care?

David A. Miller, MD, FACR

Learning Objectives

- Establish the key concepts that guide the decision making in the diagnosis and treatment of acute ischemic stroke patients.
- Explore the role of interventional radiology (IR) diagnostic modalities, IA thrombolysis, and mechanical clot removal devices in the treatment of ED acute ischemic stroke patients.

Background

Many questions exist as to how and why IR modalities are accessed, and with what outcome. Once answered, it may be possible for emergency physicians to interact directly with these interventionalists in order to improve stroke patient outcomes.

Key Clinical Questions

- Which ischemic stroke patients (type, location, severity) should be sent to the interventional radiology (IR) suite for advanced diagnostics and therapeutics?
- Does the ED use of advanced diagnostics facilitate this decision making?
- Should interventional radiology techniques be considered in all ischemic stroke patients, even for patients who have received IV tPA in the ED?
- Should patients who are sent to the IR suite all receive IV tPA, perhaps at a decreased dosage, in anticipation of the IR interventions?
- Do all IR patients initially get studied with carotid and cerebral angiography?
- Are the carotids studied in all of these IR ischemic stroke patients?
- What IA clot thrombolysis and mechanical clot therapies are available and most often used and why
- What outcomes are seen with these advanced IR interventions?
- What advanced therapeutics are the standard of care in 2007, and do they justify stroke patient transfer to specialty centers that have this capability?