**September 2012 Journal Club Summary**

Stroke is the leading cause of long-term disability in the United States and is the fourth leading cause of death, affecting nearly 800,000 patients each year. At the forefront of acute stroke care, emergency clinicians are positioned to have a major impact on the quality of care that stroke patients receive. Recent years have seen an explosion of advancements in the care of acute ischemic stroke patients. Our September JC reviewed four of the major evolving key elements that are changing the emergent management of acute ischemic stroke and are forming the basis of emergent stroke care for the future.

1. The extended window for intravenous t-PA use
2. The use of multimodal computed tomography in acute stroke imaging
3. Endovascular therapies for acute ischemic stroke
4. Stroke systems of care

The new extended fibrinolytic window represents a major advance in the treatment of patients with acute ischemic stroke. It offers critical reperfusion therapy to those who were previously not eligible. Ongoing studies will continue to refine which patients are most likely to benefit from fibrinolytic therapy in this extended 4.5-hour window. It is important to re-emphasize that protocol violations are associated with increased rates of hemorrhage and the earlier the patient is administered IV t-PA, the better the clinical outcome.

Recent years have seen the increased utilization of multimodal CT scanning in the emergent diagnostic workup of acute ischemic stroke. For emergency clinicians, this may be employed as a powerful tool to help rapidly identify acute stroke patients who may benefit from emergent IV thrombolytic therapy as well as those who may be better served with referral for immediate endovascular interventions.

Endovascular stroke therapies have evolved over the past decade and are available more routinely at MMC today. Emergency clinicians at MMC may decide to employ endovascular therapies for those patients who are outside of the IV t-PA window or who have large vessel strokes identified on CT-A (and are unlikely to recannalize with only IV-tPA). The data on clinical outcomes from endovascular therapies is still limited.

Reducing the door to needle time for IV t-PA is perhaps the most important strategy for maximizing the stroke patient’s clinical outcome. At this JC we reviewed our stroke system and emphasized important points where we can decrease the door to needle time. Our stroke packet can be found on [www.emguidelines.org](http://www.emguidelines.org).

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