

Lest we forget: the other 97%

Prahlad K Sethi, MD, MBBS, FAAN and Nitin.K.Sethi MD, MBBS, FAAN

Sir Ganga Ram Hospital, New Delhi, India and New York Presbyterian Hospital– Weill Cornell Medical

Center, New York, NY, USA

RATIONALE:

The advent of recombinant tissue plasminogen activator (r-tPA) therapy has revolutionized the treatment of stroke for the lucky few who reach the hospital in time.

Thrombolytic therapy has changed the treatment of ischemic stroke from a ritualistic to an active aggressive one.

Terms like “time is brain”, “the golden hour”, “door-to-need time”, “stroke center”, “perfusion-diffusion mismatch” came into offing.

If data is reviewed for low income and middle income countries, only 1-3 % of patients arrive in time and benefit from r-tpa therapy.

Theory of utilitarianism-“greatest good for the greatest number of people”

We should not forget the other 97% of patients. How do we prevent and treat stroke in them?

REFERENCES:

1. The National Institute of Neurological Disorders and Stroke rt-PA Stroke Study Group. Tissue plasminogen activator for acute ischemic stroke. *N Engl J Med* 1995; **333**:1581–7.

2 Hacke W, Kaste M, Bluhmki E *et al*. Thrombolysis with alteplase 3 to 4.5 hours after Acute ischemic stroke. *N Engl J Med* 2008; **359**:1317–29.

3 Kwan J, Hand P, Sandercock P. A systematic review of barriers to delivery of thrombolysis for acute stroke. *Age Ageing* 2004; **33**:116–21.

DATA:

About 15 years ago, The National Institute of Neurological Disorders and Stroke (NINDS) trials involving tPA were performed (1) making thrombolytic therapy the standard of care for acute ischemic stroke patients presenting to the hospital within 3 h and, more recently, up to 4.5 h of symptom onset (2).

Time is brain and thus billions of dollars have been invested to help increase tPA usage.

However, therapeutic uptake has been modest with only about 3% of acute ischemic stroke patients in developed and 1% in developing countries able to derive the benefit of r-tPA.

A visit to the major stroke conferences (*including this one!!!*) makes one ponder whether this other 97% is getting ignored.

Conference time primarily devoted to studies attempting to increase the therapeutic window and therapeutic uptake of thrombolytic therapy, emerging mechanical clot extraction devices, and interventional procedures (IV and IA)

Minimal conference devoted to acute stroke patient who cannot derive the benefit of r-tpa on account of exclusion due to some reason with arrival outside the 4.5 h window being the most commonly cited reason (3).

Core issues of poor compliance rate with antiplatelet and anticoagulant therapy, urinary tract, and respiratory infections which increase morbidity and mortality are rarely the ‘hot’ topics.

Modification of stroke risk factors and timely placement of feeding and tracheostomy tubes is largely neglected.

Assessment for depression and other comorbidities that increase stroke morbidity and mortality are largely ignored.

Emphasis on acute post stroke rehab declining.

CONCLUSION:

The hype associated with tPA is not unjustified but the pendulum has swung to the other extreme.

In a resource-limited country such as India, this approach seems hard to justify.

We may or may not be able to improve tPA utilization rates further.

We can, however, certainly improve stroke outcomes in the vast majority of patients by aggressively addressing: in cardioembolic stroke-look for atrial fibrillation and congestive myopathy, making timely decisions about need for PEG and tracheostomy, keeping a close watch for infection (UTI and RTI) and aggressively treating it, preventing aspiration pneumonia, if on Warfarin-closely monitoring INR, emphasis on acute and early aggressive rehab, preventing recurrent strokes-addressing poor compliance with antihypertensive medications, antiplatelet drugs and addressing stroke risk factors at the community level.

More studies and conference time devoted to address the above issues.

For the other 97%, the time has come to stand up and be heard!!!