

# Treating CVA in the ED

AHEC "Time is Brain" 2014

1. Thrombolysis is time dependent. Outcomes are directly proportional to how quickly TPA can be given.

Table 2| Outcomes measured by score on modified Rankin scale (mRS) of treatment in patients with stroke after treatment with tissue plasminogen activator (tPA) in observational analysis compared with clinical trial data

Time from onset to treatment (mins)	Present observational analysis			Pooled analysis of clinical trials <sup>4</sup>			
	No (%) with mRS score 0-1 at discharge after intravenous tPA*	Adjusted OR† (95% CI)	NNT for mRS 0-1	No (%) with mRS score 0-1 at 90 days		Adjusted OR‡ (95% CI)	NNT for mRS 0-1
				Intravenous tPA	Placebo		
0-90	378/1245 (30.4)	2.49 (2.12 to 2.92)	4.5	67/161 (41.6)	44/151 (29.1)	2.55 (1.44 to 4.52)	4.5
91-180	1464/4838 (30.3)	1.86 (1.71 to 2.02)	6.4	127/303 (41.9)	91/315 (28.9)	1.64 (1.12 to 2.40)	9.0
181-270	370/1230 (30.1)	1.26 (1.08 to 1.46)	18.0	361/809 (44.6)	306/811 (37.7)	1.34 (1.06 to 1.68)	14.1
>270§	172/721 (23.9)	1.25 (1.01 to 1.55)	18.6	215/575 (37.4)	193/542 (35.6)	1.22 (0.92 to 1.61)	21.4

2. "Drip and Ship" - When you accept a TPA patient from an outside hospital, you accept all the responsibilities for caring for that patient from that point forward. Blood pressure management and TPA dosing are frequently not done well, and mobile transport should have protocols in place.

3. All members of the treatment team should have NIHSS (stroke scale training) to facilitate communication about the patient's decision.

4. Only head CT, glucose, and +/- coags needed prior to TPA.

5. TPA 3.0-4.5hr has benefit but there are multiple additional exclusions.

### **Guidance about IV Thrombolysis in AIS from the AHA/ASA 2013**

1. IV rtPA at a dose of 0.9 mg/kg, maximum dose 90 mg
  - Within 3 hours of AIS onset (Class I, LOE A)
1. Door to needle time for IV rtPA administration should be:
  - Within 60 minutes of arrival to hospital (Class I, LOE A)
2. IV rtPA is indicated at a dose of 0.9 mg/kg with the time window of 3.0 to 4.5 hours of AIS as long as there is no evidence of age >80 years, current use of oral anticoagulants, NIHSS >25, history of both diabetes mellitus and stroke, and ischemic injury >1/3 of the middle cerebral artery territory (Class I, LOE B)

Jauch EC, et al. *Stroke*. 2013;44(3):870-947

Ⓢ

6. BP in TPA must be < 185/110 and recommended agents are labetalol, hydralazine, and cardene.

7. Neurosurgery never cuts TPA bleeds so does TPA therapy actually need neurosurgery backup?

8. TPA bleeds are treated with cryo and platelets based on consensus recommendation.

9. Consider TPA in mild or improving symptoms if residuals symptoms would be very disabling. Speech, etc.

10. Do not use TPA in someone who is on a novel anticoagulant.

11. Treating mimics such as migraines and conversion d/o for some reason has very low rates of complications.

12. Last four trials of endovascular therapy vs IV TPA - no better than systemic TPA therapy

# Recent Endovascular Trials

"No Better Than IV tPA"

1. IMS III: *Broderick JP et al. NEJM 2013;368:893-903*
2. SYNTHESIS: *Cicccone A et al. NEJM 2013;368:2433-2434*
3. MR-RESCUE: *Kidwell CS et al. NEJM 2013;368:914-923*
4. SWIFT PRIME

**Endovascular Stroke: Small, Partial Stroke Event, High-Risk**

**Background** The SWIFT PRIME trial was a randomized, controlled trial comparing endovascular treatment with intravenous tPA in patients with acute ischemic stroke. The trial was designed to evaluate the efficacy and safety of endovascular treatment in patients with acute ischemic stroke who are at high risk for poor outcomes. The trial was conducted in a multicenter setting and included patients who were treated with either endovascular treatment or intravenous tPA. The primary outcome was the proportion of patients who achieved a functional outcome at 90 days. The trial was terminated early due to concerns about the safety of endovascular treatment in this patient population.

**Conclusions** The SWIFT PRIME trial demonstrated that endovascular treatment was not superior to intravenous tPA in patients with acute ischemic stroke who are at high risk for poor outcomes. The trial was terminated early due to concerns about the safety of endovascular treatment in this patient population. The results of the trial suggest that endovascular treatment may not be the best treatment option for these patients.