Protocolizing the stroke transfer process

E-QUAL Stroke Webinar
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Objectives

- Review biological rationale for rapid transfer
- Organization of stroke care
- Consider methods for reducing door in door out time
- Describe current research
Association of Time From Symptom Onset to Expected Time of Endovascular Thrombectomy Procedure Start (Arterial Puncture) With Disability Levels at 3 Months in Endovascular (n = 633) vs Medical Therapy (n = 645) Groups. mRS indicates modified Rankin Scale. Time was analyzed as a continuous variable. Data were adjusted for age, sex, baseline stroke severity (National Institutes of Health Stroke Scale), target occlusion location, and concomitant intravenous tissue plasminogen activator. A, The 6-level mRS combined ranks 5 and 6 into a single worst outcome rank. The solid curve indicates the best linear fit between the common odds ratio for improved outcome over the 6-level mRS. The dashed curves indicate 95% CIs. The P value for interaction was .07. The lower bound of the 95% CI crosses 1.0 at 438 minutes (vertical blue dashed line). When the 7-level mRS was analyzed, with rank 5 considered a better outcome than rank 6, the lower bound of the 95% CI crossed 1.0 at 418 minutes. B, Upper solid line of each colored band indicates outcome rate in the endovascular thrombectomy group; lower dashed line of each band indicates outcome rate in the medical therapy alone group. Categories are cumulative, so that mRS 0-3 includes all patients with outcomes of mRS 0-3. For example, at the symptom onset to expected arterial puncture time of 300 minutes, the x intercepts indicate outcome rates (mRS 0: 8.3% for the endovascular thrombectomy group vs 4.3% for the medical therapy group; mRS 0-1: 22.9% for the endovascular thrombectomy group vs 12.9% for the medical therapy group; mRS 0-2: 43.1% for the endovascular thrombectomy group vs 28.2% for the medical therapy group; mRS 0-3: 62.7% for the endovascular thrombectomy group vs 47.3% for the medical therapy group; mRS 0-4: 82.4% for the endovascular thrombectomy group vs 72.0% for the medical therapy group; mRS 0-5: 90.0% for the endovascular thrombectomy group vs 83.3% for the medical therapy group).
Choice of thrombolytic

- EXTEND IA – TNK – is TNK 0.25 mg/kg better than standard alteplase?
- EXTEND IA – TNK part 2 it TNK 0.4 mg/kg better than TNK 0.25 mg/kg?
- Large vessel stroke, with intent to go to thrombectomy
- Results
  - TNK 0.25 mg better (median mRS 2 versus 3) in about 200 patients
  - TNK 0.4 mg NOT better than 0.25 mg

Key Points
- TNK is simpler to infuse (single bolus dose)
- TNK has better outcomes (clinical and recanalization)
**QUESTION** Does a tenecteplase dose of 0.40 mg/kg vs 0.25 mg/kg improve cerebral reperfusion prior to endovascular thrombectomy in patients with large vessel occlusion ischemic stroke?

**CONCLUSION** This randomized trial found that the 0.40-mg/kg dose of tenecteplase does not confer an advantage over the 0.25-mg/kg dose in patients with large vessel occlusion ischemic stroke.

**POULATION**
- 159 Males
- 141 Females
- Adults with occlusion of the intracranial internal carotid, basilar, or middle cerebral artery and <4.5 hours after symptom onset
- Mean age: 73 years

**INTERVENTION**
- **300 Patients randomized**
- **150**
  - **0.40 mg/kg Tenecteplase**
  - Intravenous tenecteplase at 0.40 mg/kg (maximum, 40 mg) as bolus before thrombectomy
- **150**
  - **0.25 mg/kg Tenecteplase**
  - Intravenous tenecteplase at 0.25 mg/kg (maximum, 25 mg) as bolus before thrombectomy

**FINDINGS**
- **Reperfusion of >50%**
- **0.40 mg/kg Tenecteplase**
  - 29 of 150 patients
  - 19.3%
- **0.25 mg/kg Tenecteplase**
  - 29 of 150 patients
  - 19.3%
- No significant difference between the doses: unadjusted difference, 0% (95% CI, −8.9% to 8.9%)

Stroke Systems of Care

- Balance patients across hospitals
- Prehospital triage
- Differing capabilities
- Population density (rural versus suburban versus urban)

Key Points

- 37% of stroke centers are endovascular capable
- About 20% of the US population is within 15 minutes of an endovascular capable stroke center
Key Points

- A policy change in Chicago led to EMS triage of stroke to primary stroke centers
- Intravenous thrombolysis increased substantially
- JAMA Neurol. 2013;70(9):1126-1132
Key Points

- Preliminary data from E-SPEED project (PI: S. Prabhakaran) presented at International Stroke Conference in 2020
- Identifies major opportunities (up front CTA)
- Future – severity thresholds?
Questions?
Thank You