KANSAS INITIATIVE FOR STROKE SURVIVAL

A PROJECT BY AND FOR KANSANS

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Strategies to Improve Door In/Door Out During Acute Stroke Transfer

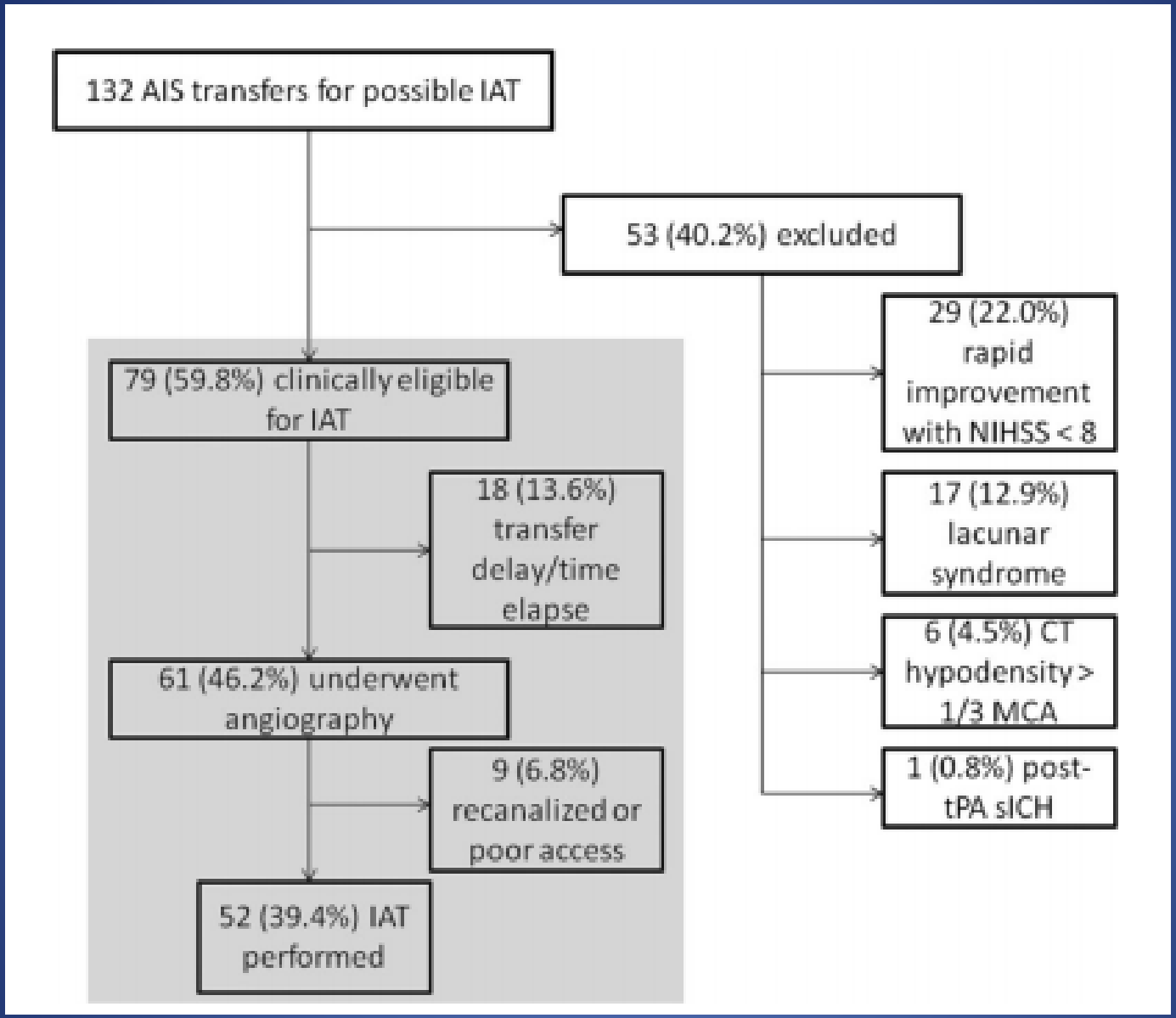
"First Tuesdays" Lecture Series

Introduction and Goal of “First Tuesdays”

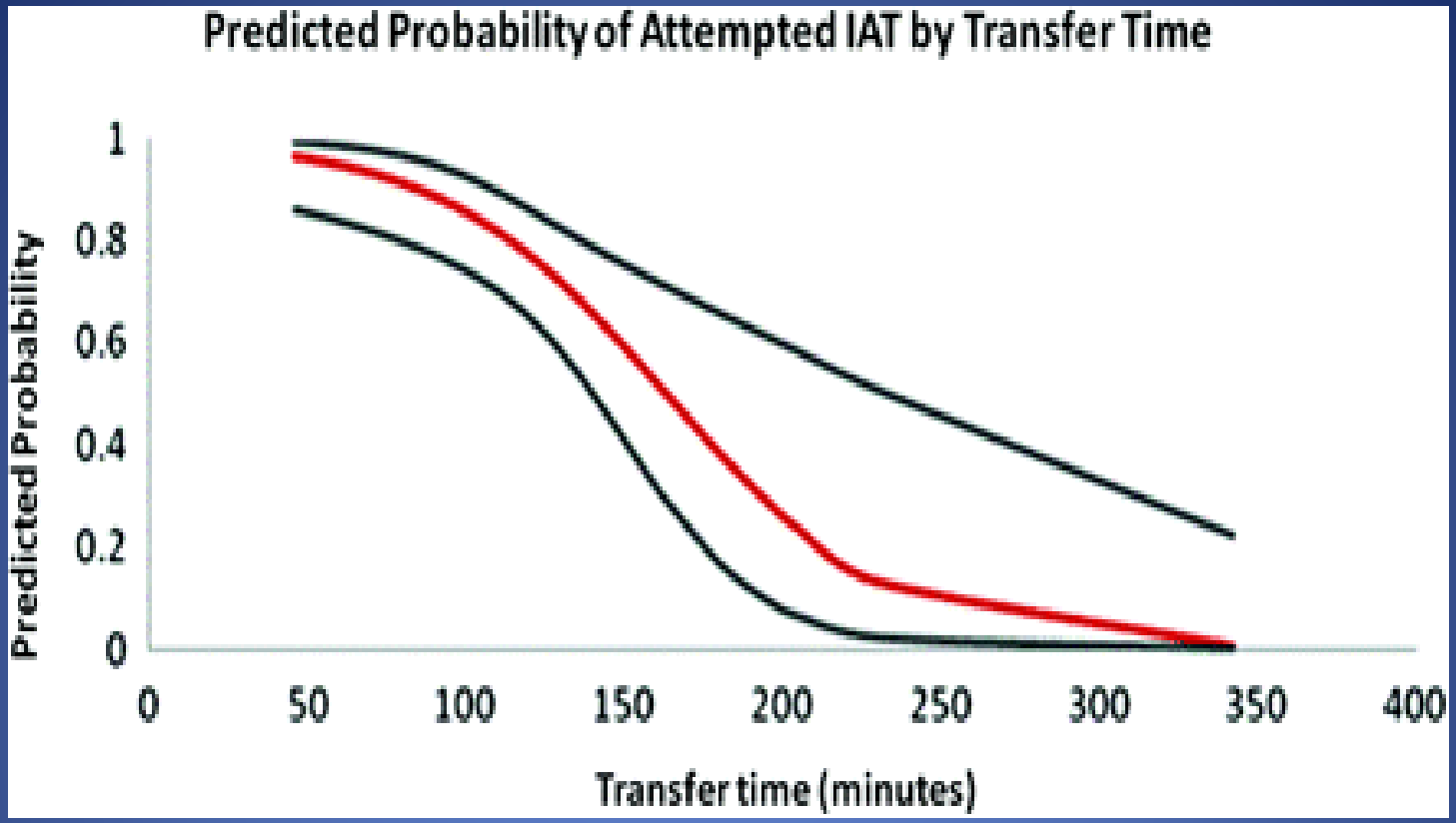
- Sabreena Slavin MD – Vascular Neurologist and Neurohospitalist at KU School of Medicine
- Didactic lecture series as part of the Kansas Initiative for Stroke Survival
- Updates in Practice and FAQ’s on Acute Stroke Care
- 20 minute didactic, 10 minutes for questions/discussion

Review of Acute Stroke Interventions

- IV alteplase (tPA) for all patients who have **disabling symptoms** of acute stroke
- Mechanical thrombectomy: **only for large vessel occlusions (LVO).** Only hospitals with capabilities (eg: comprehensive stroke center) can perform thrombectomy.
  - A higher NIHSS (10 or more) can be indicative of a large vessel occlusion.
  - Diagnosed with CTA head/neck



Prabhakaran et al, Stroke, 2011



- In a hub-and-spoke system in Chicago, transfer delay between referring hospital and CSC excluded 18 (13.6%) of 79 patients initially eligible for interventional therapy.

Prabhakaran et al, Stroke, 2011

EMS Prenotification

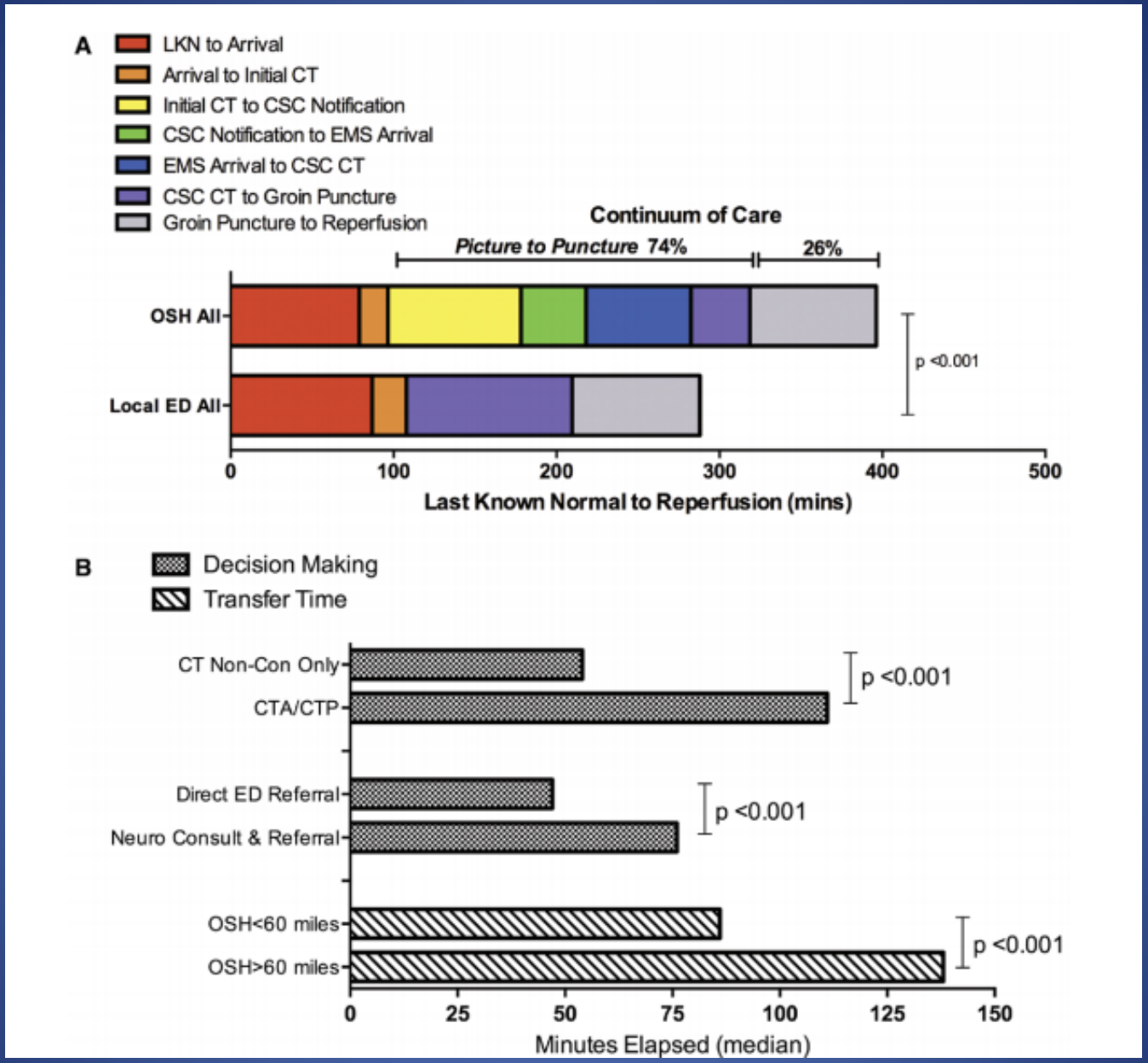
- Large retrospective study on over 370,000 patients from April 2003 – March 2011: EMS prenotification occurred in 67% of total cases.
- Prenotification was associated with better **door-to-imaging time (26 minutes vs 31 minutes)** and door-to-needle time (78 minutes vs 80 minutes).
- Will help **direct EMS to CT scanner**

Lin et al, *Circulation* 2012.

Item	FAST-ED Score	NIHSS Score Source
Facial palsy		
Normal or minor paralysis	0	0–1
Partial or complete paralysis	1	2–3
Arm weakness		
No drift	0	0
Drift or some effort against gravity	1	1–2
No effort against gravity or no movement	2	3–4
Speech changes		
Absent	0	0
Mild to moderate	1	1
Severe, global aphasia, or mute	2	2–3
Eye deviation		
Absent	0	0
Partial	1	1
Forced deviation	2	2
Denial/Neglect		
Absent	0	0
Extinction to bilateral simultaneous stimulation in only 1 sensory modality	1	1
Does not recognize own hand or orients only to one side of the body	2	2

FAST-ED indicates Field Assessment Stroke Triage for Emergency Destination; and NIHSS, National Institutes of Health Stroke Scale.

Cutoff Score for possible LVO: ≥4
Lima et al, Stroke, 2016



Sun et al, *Stroke* 2013

CT vs CTA vs CTP at non-CSC?

- Immediate door to CT scanner for suspected acute stroke.
- CT/CTA can often be obtained on initial arrival as long as IV tPA is not delayed.
- For patients with **severe acute stroke with last well within 24 hours, (NIHSS ≥ 10 or cortical signs such as weakness + aphasia/gaze/neglect)**, consider **not** obtaining CTA/P at your site and calling CSC for transfer immediately.

Wait for Creatinine before CTA?

- One study on acute stroke patients receiving CTA/P **without** waiting for serum Cr. All patients received IVF afterwards.
- Out of 623 cases, only 16 (2.6%) had contrast induced nephropathy (CIN), **however** with 15/16 cases also with dehydration, UTI, or medication induced-nephropathy
- **0 cases progressed to CKD or required dialysis!** There was no negative impact of CIN on 90-day mRS outcomes.

Ang et al, *Int J Stroke* 2015

Other strategies

- Have EMS stay nearby if suspecting LVO
- ED staff training to **call/notify CSC early** in process, do not wait for neurology consult/assessment.
- In vast majority of cases, MRI brain is **not needed** and only delays care.
- On CSC end, we will use air transport if faster and notify our interventional team early.
  - If patient being transferred for intervention, we will ask for 2 large bore IV's and Foley placed; but do not delay transfer to get these!

Questions?

- Call for help anytime!
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