Advanced Comprehensive Stroke Center
Receiving Center

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Financial disclosures

No financial disclosures
Call to CSC

- BAT telephone 913-588-3727 or transfer center and ask for stroke neurology.
- Call for
  - Guidance on if Alteplase is appropriate
  - Potential transfer for endovascular therapy
  - Other emergent stroke questions (stroke in the young, dissection, complex patients etc.)
Key info

- Name of Patient
- Age
- Sex
- NIHSS and what deficits are
- Time of Onset
- Last known well
- Wake Up Stroke/Time indeterminate
- CT scan results
- Baseline function/mRs
- Meds/PMH/recent surgeries/allergies
- Phone number of family
American Heart and Stroke Association Guidelines

Patients should receive endovascular therapy with a stent retriever if they meet all the following criteria (*Class I; Level of Evidence A*). (New recommendation):

a. Prestroke mRS score 0 to 1,
b. Acute ischemic stroke receiving intravenous r-tPA within 4.5 hours of onset according to guidelines from professional medical societies,
c. Causative occlusion of the ICA or proximal MCA (M1),
d. Age ≥18 years,
e. NIHSS score of ≥6,
f. ASPECTS of ≥6, and
g. Treatment can be initiated (groin puncture) within 6 hours of symptom onset

*Stroke.* 2015.
The Alberta stroke programe early CT score (ASPECTS) is a 10-point quantitative topographic CT scan score used in patients with middle cerebral artery (MCA) stroke. Segmental assessment of the MCA vascular territory is made and 1 point is deducted from the initial score of 10 for every region involved:

- caudate
- putamen
- internal capsule
- insular cortex
- M1: "anterior MCA cortex," corresponding to frontal operculum
- M2: "MCA cortex lateral to insular ribbon" corresponding to anterior temporal lobe
- M3: "posterior MCA cortex" corresponding to posterior temporal lobe
- M4: "anterior MCA territory immediately superior to M1"
- M5: "lateral MCA territory immediately superior to M2"
- M6: "posterior MCA territory immediately superior to M3"
Key points for Primary Stroke Centers (PSC)/Stroke Ready Hospitals (SRH)

- Call CSC early. Call transport early.

- Advanced imaging (CTA/CTP) not necessary.
  - Do not delay transfer to get this.

- Can base need for transfer on CT scan and NIHSS.

- Don’t wait for bed assignment. We will have a bed.

- Don’t delay transfer with copy records or disc.
Important items for transfer

- Transfer order set if patient received Alteplase
- IVF
- 2 IV’s. One large bore in AC
After you get off the phone with CSC

- **We alert**: transfer center (they call back and get face sheet, help with bed assignment), interventional radiology team, neuro-icu/stroke team nurse, neurology resident, CT scanner with ETA (hold table), ED coordinator (page stroke team when ground or flight crew calls in)
- Stroke team meets patient at ambulance bay or on roof and takes them to CT scanner.
- CTA/CTP and immediate radiology read.
- IR or ICU.
Goal times

- Door-to-needle 45 minutes
- Door-to-departure (arrival at facility to transfer out)
  - With tpa: 90 minutes
  - Without tpa: 60 minutes
- Onset of symptoms to endovascular treatment:
  - AHA/ASA Guidelines: 6 hours
  - DAWN: onset to 24 hours
  - Off label: wake up and unknown time of onset based on imaging
Pitfalls

- Delay in recognition of stroke
- Not treating due to low NIHSS or resolving/fluctuating
- Delay in call to CSC
- Delay in call for transport
- Advanced imaging at PSC that takes too long
- Prolonged door-in-door-out
Partnership

- CSC provides education
- CSC should be helpful when people call
- CSC should provide timely feedback reports to sending hospitals
- Sending facility should give feedback to CSC
- Sending facility should optimize door-to-needle and door-to-departure
- CSC should optimize door-to-skin puncture
Partnership

• Partnership between PSC/SRH and CSC can ensure that patients can be treated appropriately for acute ischemic stroke from large vessel occlusion.

• Partnership can ensure that patients stay at PSC/SRH if they don’t need to be transferred.
Case

- Called by Dr. Trent at LMH.
  - Male with symptom LKN 8:40 am. Wife heard fall in bathroom at 8:47 am.
  - Brought to LMH by EMS.
  - Right sided hemiparesis, aphasia, right facial droop. NIHSS 20.
  - He received IV tpa at 9:30 am.
  - CTA that showed left ICA occlusion. CTP small area of core infarct but significant area of penumbra.
  - He was transferred to KU via helicopter.
Prior to patient arrival

- Transfer center (they call back and get face sheet, help with bed assignment)

- Interventional radiology team

- Neuro-icu/stroke team nurse and neurology resident

- CT scanner with ETA (hold table), ED coordinator (page stroke team when ground or flight crew calls in)
Pre notified by flight crew so stroke team met him on the roof.

NIHSS at KU was 12.

He went directly to IR and 15 minutes later had skin puncture.
Key points

- Key patient info was quickly relayed by LMH
- No delays in IV tpa or advanced imaging at LMH
- Called CSC early, called transport early
- CSC was prepared for patients arrival