Stroke Assessment for EMS

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Objectives

• FAST exam

• Stroke checklist

• Assess for LVO (large vessel occlusion)
FAST Exam

• F = Facial weakness or asymmetry
• A = Arm weakness
• S = Speech disturbance
• T = Time of onset (TIME IS BRAIN)
FAST positive = STROKE!!

- Positive predictive value = ~80%
  - Some risk of missing posterior circulation strokes
  - High likelihood of capturing LVO (large vessel occlusion)

- Diagnosis is made pre-hospital

- Now what??

Stroke Checklist

- [ ] Stroke symptoms identified and recorded
- [ ] Onset time or last known well time obtained and recorded
- [ ] Antithrombotic medications listed
- [ ] BP done and recorded
- [ ] Accucheck done and recorded
- [ ] IV Gauge (18 gauge IV x2 in antecubital recommended)
- [ ] Stated or actual weight obtained and recorded
- [ ] Call in STROKE alert if symptoms are less than 6 hours or unknown at the time of evaluation
Identifying Large Vessel Occlusion

- ICA or MCA occlusion
  - Symptoms depend on which hemisphere
    - Left = aphasia
    - Right = neglect
  - MCA syndrome
    - contralateral weakness/numbness
    - aphasia/neglect
    - gaze palsy

- Basilar occlusion
  - More complicated
  - 6 D's
    - Dizziness
    - Drowsiness
    - Dysarthria
    - Diplopia
    - Dysphagia
    - Dead

Simplifying LVO detection

- The rationale
  - Large cerebral vessels supply more than one brain territory
  - Different brain territories control different functions
  - LVO causes loss of multiple brain functions

- In reverse
  - Look for loss of different brain functions
  - If different functions are lost/abnormal, then different brain territories are injured
  - Combination of symptoms = large vessel occlusion
Menu of Stroke Symptoms

- Any one of the following symptoms
  - **D’s** = Drowsy, Dizzy, Double vision, Dysarthria
  - **Aphasia** = difficulty finding the right words, word salad, or mute (not just slurred speech alone)
  - **Gaze palsy** = eyes deviated to one side, or eyes unable to cross midline
  - **Neglect** = not able to pay attention to one side

- PLUS, any one of the following symptoms
  - **Weakness** of the face, arm, or leg
  - **Loss of sensation** of the face, arm, or leg
  - **Loss of vision** in one or both eyes

The D’s

- **Drowsy**
  - Is patient alert?
  - Require stimulation to stay awake?

- **Dizzy**
  - Spinning sensation
  - Nystagmus (beating eyes)

- **Double vision**
  - Patient reported
  - Googly eyes

- **Dysarthria**
  - Slurred/drunk speech
  - Language content can be normal
Aphasia

- Inability to produce or understand language (spoken, written, signed)
- Ask patient to follow commands
  - Close your eyes
  - Stick out your tongue
- Have patient name common objects (watch, ring, pen, etc)
- Have patient repeat a short sentence
  - “The dog wants to go outside.”

Gaze deviation/palsy
Neglect

- Inattention to one side
- Visual neglect
  - Have patient stare at your nose
  - Hold up both hands to check their peripheral vision
  - Ask how many hands they see
- Tactile neglect
  - Touch each arm and then both arms simultaneously
  - Each time, ask patient which side you are touching

Other focal deficits

- Weakness
  - Drift of arm or leg
  - Droop of face
- Numbness (loss of sensation, not just tingling)
- Vision loss
  - One eye = partial or total vision loss
  - Both eyes = not able to see to one side (from either eye)
  - Tested the same as visual neglect
TIME IS BRAIN... (and life)

- Earlier detection & treatment of stroke leads to better outcomes
- Large vessel occlusion (LVO) is associated with mortality of >80%
- Timely treatment of LVO can improve chance of recovery to independence in up to 80%
- Number needed to treat = 2
  - for measurable improvement in functional outcome

Questions?