UConn Health Stroke Center Sets New Standard for Stroke Treatment With New Imaging: RAPID Technology Extends Stroke Window to 24 Hours

UConn Health is offering a new standard of care for stroke patients. New software, called “RAPID,” makes radiologic interpretation of perfusion data simpler, helping physicians determine which patients are good candidates for mechanical thrombectomy. For stroke patients it means the narrow window for intervention potentially quadruples, to 24 hours from the onset of symptoms.

“‘It enables us to easily check how large an area of the brain is deprived of blood flow,’” says Dr. Leo Wolansky, chair of the UConn Department of Radiology. “We can distinguish between the part of the brain that’s already dead (cerebral infarction) and the part of the brain that is in danger of dying but can be saved.” That’s important because mechanical thrombectomy (which UConn now offers) is only an option for blood vessels around brain tissue that is still alive. Historically when a cerebral infarction, the most common type of stroke, happens, the race is on to administer the clot-dissolving medication known as a tissue plasminogen activator (TPA). Mechanical thrombectomy traditionally has also been an option with a very limited timespan. With the introduction of advanced imaging such as RAPID, patients now can be treated safely for up to 24 hours of their stroke if the CT perfusion scan is favorable.

“We can tell if there is brain that can be saved, even beyond the previously accepted window of time for thrombectomy,” Wolansky says. “This creates the possibility of treating many ‘wake-up’ strokes, people who went to sleep well, but woke up eight hours later with a stroke.”

The message for EMS: Call in a Stroke Alert for any patient suspected of an acute stroke (up to 24 Hours).

(Abridged from article by Chris Defrancesco in UConn Today)
Stroke Destination Determination
Suspected stroke patients should be brought to the closest certified stroke center or stroke-ready hospital.*

*Stroke ready hospital shall have:
1) Access to 24 hour CT scan
2) Access to a neurologist either in person or through telemedicine
3) Ability to conduct emergency lab testing
4) Ability to give TPA
5) Policies in place to transfer patients to a primary or comprehensive stroke center

Consider patient preference/history if multiple stroke centers are in similar proximity.

In all instances, those patients requiring immediate hemodynamic or airway stabilization should be transported to the closest appropriate facility.

Stroke Severity Scales
Stroke experts are hard on work on developing an effective assessment tool to help EMS be able to identify candidates for endovascular therapy in the field. To date, no severity scale has demonstrated sufficient sensitivity and specificity to merit hospital bypass. Stay tuned.

EMS Stroke Checklist
Key Questions/Interventions/Documentation
Please include the following in your radio patches and documentation:

1. Last Known Time Without Symptoms
2. Cincinnati Stroke Scale
3. Blood Glucose Tested
4. Acute Stroke Alert Called to Hospital*

*Remember: Early Notification Saves Lives!

If you are not certain, it is okay to say: “Possible” Stroke Alert

“The Biology of stroke is clear and immutable: patients must be treated with extraordinary speed....Delayed treatment is the same as no treatment.”
Comment
Volume 384, Issue 9958,
December 2014, Pages 1904-1906

Cincinnati Pre-hospital Stroke Scale

1. FACIAL DROOP: Have patient show teeth or smile.
   Normal: both sides of the face move equally
   Abnormal: one side of face does not move as well as the other side

2. ARM DRIFT: Patient closes eyes & holds both arms out for 10 sec.
   Normal: both arms move the same or both arms do not move at all
   Abnormal: one arm does not move or drifts down compared to the other

3. ABNORMAL SPEECH: Have the patient say “you can’t teach an old dog new tricks.”
   Normal: patient uses correct words with no slurring
   Abnormal: patient slurs words, uses the wrong words, or is unable to speak
**40 Minute Door-to-tPA Median Time**

**UConn Health** is proud to publicize our door to tPA times. This represents the time from when the stroke patient enters the emergency department to the moment tPA is bolused into the patient’s IV line (and includes time to CT scan and the time involved in weighing the pros and cons of each case and time obtaining consent). Through the use of prehospital Stroke Alert and direct to CT scan procedures, we have some of the best door-to-tPA times in the nation. The national benchmark is 60 minutes. Our 2017 EMS average is 48 minutes, our median time is 40 minutes, and we have had many cases under 30 minutes with a 2017 record of 25 minutes. We would like to publicly thank our EMS partners for their key contribution to our success and patient outcomes.

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**Large MCA Stroke**

In October 15, Simsbury EMS paramedic Greg Shovak and his partner Michael Strumpf alerted **UConn John Dempsey Hospital** at 8:00 AM of their patient with slurred speech, right gaze and left mobility deficit/weakness with a last known well time of 2:00 AM. His CT scan showed a large right MCA stroke, involving most of the right MCA. The subsequent CTA of the head/neck showed a thrombus within the proximal to mid portion of the M1 segment of the right MCA with absent to diminished flow within the M2, M3 & M4 of the right MCA. CT Perfusion with RAPID technology, which can determine the amount of ischemic damage outside normal treatment windows, extending the possible window up to 24 hours, showed the patient only met two of the three criteria for intervention and therefore was treated conservatively.

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**Hemorrhage with Aneurysm Clipping**

Upon waking this patient presented with a gradual onset of the “worst headache of my life” with photophobia, nausea, vomiting & dizziness. **West Hartford Fire Department** Paramedic Jeff D’Albero and his crew from Station 2 responded along with **American Medical Response** paramedic Angel Rodriguez and EMT Christopher Sneed. The patient was taken to **UConn John Dempsey Hospital** where a subarachnoid hemorrhage with PCA aneurysm was found via CT imaging. Neurosurgeon & Neuro-interventionalist Dr. Ketan Bulsara brought the patient to the OR for a right fronto-temporal craniotomy & a microsurgical clip ligation of the aneurysm. The procedure was a success! The patient was discharged home 11 days later, alert and fully oriented, eating a regular diet and ambulating independently. Great job EMS and UCONN Health Stroke team!

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**Lifestar Transfer to UConn—Coiling**

Charlotte Hungerford Hospital (CHH) called a stroke alert on a patient who presented with the “worst headache of her life” and became unresponsive. A massive subarachnoid hemorrhage was found on the initial head CT. The patient was intubated and CHH requested an acute care transfer to **UConn Health John Dempsey Hospital**. Neurosurgeon and Neuro-interventionalist Dr. Ketan Bulsara instantly accepted care and the patient arrived to UConn via Lifestar. Dr. Bulsara brought the patient to the EP lab to complete cerebral coiling & embolization of the aneurysm. The procedure went flawlessly. The patient is doing very well,. She is awake, alert, eating a regular diet and getting out of bed with assistance from our Intensive Care Unit RN staff.
The Future is Now: Up to 24 Hour Stroke Window at UConn Health

Call in a Stroke Alert for any patient suspected of an acute stroke (up to 24 Hours).

UConn EMS CONTINUING EDUCATION
EMS Monthly CME (3 Hours)

October 18, 2017
November 15, 2017
December 20, 2017
8:30-11:30 A.M.

Cell and Genome Building
400 Farmington Avenue
Farmington, CT

ALL EMS RESPONDERS WELCOME

EMS STROKE FEEDBACK
We endeavor to provide our EMS responders with full follow-up on all stroke calls where the patient receives tPA, endovascular treatment or other major procedures. If you would like more information on stroke patients you transported to UConn John Dempsey Hospital, please contact: EMS Coordinator Peter Canning at canning@uchc.edu or (860) 679-3485 or Jennifer Sposito, Stroke Coordinator at jsposito@uchc.edu (860-480-2523). Our stroke team is also available to come out to your training center and do case reviews and stroke education. We recognize that EMS and the great care you provide is essential to our success as a stroke center.

UConn Health EMS Website
For news, educational information, CME schedule and past copies of our newsletter Partners, check out our website at: health.uconn.edu/ems