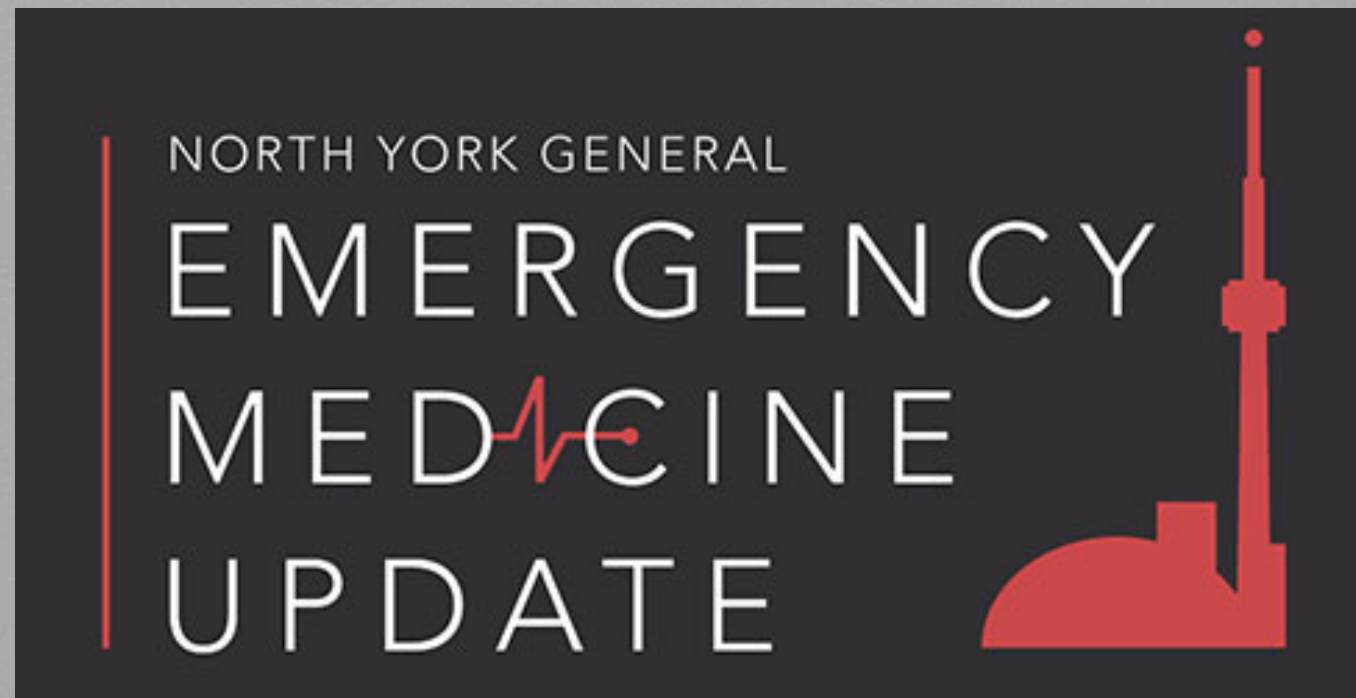

2018

STROKE WORKSHOP

PRE-WORKSHOP HANDOUT



With Walter Himmel, Meeta Patel & Anton Helman

Instructions for Getting the Most Out of The EMU Stroke Workshop Handout

This workshop has been designed around effective adult learning theories. The two most important things that you can do to maximize your learning of the course material are:

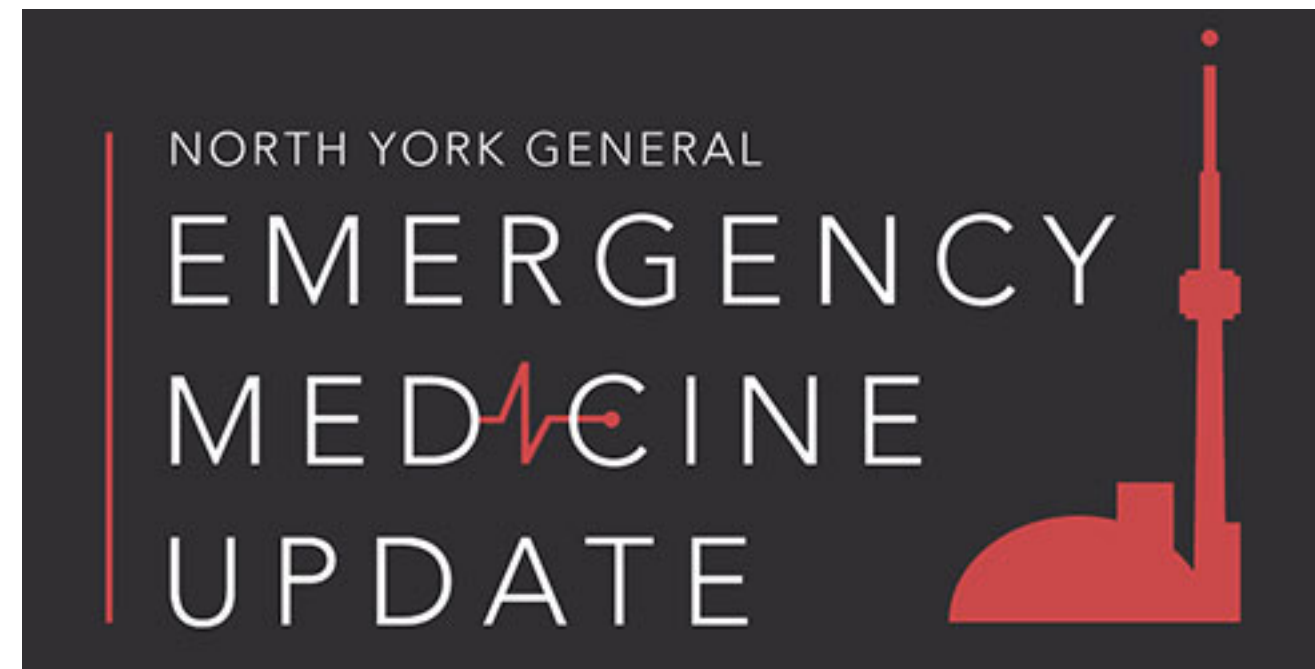
1. Reviewing the pre-workshop material in this handout
2. Participating in discussions during the workshop

If you have NO TIME TO PREPARE prior to the workshop - At a minimum please read the handout for this workshop. (10 minutes)

If you want to get MORE out of the workshop – Read the handout AND read Dr. Himmel's notes on stroke. (25 minutes)

Stroke Workshop

1. TIA
2. Code Stroke
3. ICH
4. Vertigo



Stroke

With Walter Himmel, Meeta Patel & Anton Helman

We can be easily misled to do the wrong thing with devastating sequelae for our patients when it comes to acute neurologic events in the ED. In this workshop we will discuss the importance of rapid identification and meticulous management of stroke and TIA patients as well as commonly mismanaged and commonly missed strokes.

Dr. Himmel's detailed notes on stroke can be found here:

<https://emergencymedicinecases.com/wp-content/uploads/2018/04/STROKE-ICH-TIA.pdf>

Case 1: TIA

A normotensive 56 year-old male 20 pack-year smoker presents to your ED after a 10-minute episode of slurred speech. He describes no visual disturbance, no weakness, no paresthesias, no headache, no neck or face pain, no nausea and is feeling well in the ED. His ECG shows atrial fibrillation at 86 bpm.

Q1: Is this patient at high risk for stroke? How useful is the ABCD₂ Score for predicting stroke after TIA? Why should we risk stratify patients with TIA?

The ABCD² Rule

Risk Factor	Points
Age > 60 years	1
Initial BP > 140/90	1
Unilateral Weakness	2
Speech Impairment without Weakness	1
Symptom Duration 10-59 minutes	1
Symptom Duration > 60 minutes	2
History of diabetes	1

Low risk = 0-3 | Moderate risk = 4-5 | High risk ≥ 6

Q2: How would you work-up this patient in the ED? As an outpatient? Inpatient? Which patients require an echo? Admission?

Case 2: Code Stroke?

An 83 year-old woman from home presents to your community ED via EMS at 11pm with speech difficulty and right sided limb weakness. She was well until dinnertime when her husband observed her slump over in her chair at 5pm. Her PMHx includes a TIA 3 months prior for which she was started on ASA, diabetes and hypertension. Her carotid Doppler was considered non-surgical at the time of the TIA. She has no known cardioembolic risk factors. Vital signs are normal except for a BP = 175/100. She appears alert but unable to speak intelligibly, and has an obvious facial droop. She is unable to lift her right arm or leg off the stretcher. ECG shows normal sinus rhythm. It's now 11:15pm.

Q1: Would you call a 'code stroke' and have this patient transported to a stroke centre more than six hours from onset of symptoms? Or thrombolyse at your rural hospital? Would this be supported by the evidence on lytics alone? On endovascular therapy?

Q2: The patient is unable to provide consent. How do you explain the options to her husband?

Case 3: About to barf – The Golden Hour

A 75 year-old woman is brought to your ED via ambulance complaining of abrupt onset headache, nausea, right leg weakness and difficulty walking that started 6 hours ago. She has a history of HTN and diabetes and takes hydrochlorothiazide as well as Metformin. She also takes ECASA 325mg daily.

She has no neck pain or stiffness, visual or speech changes. Her GCS is 14, BP 185/100 and Temp is borderline at 38.2. The rest of her vitals are normal. Finger stick glucose = 13. She's lying flat on the stretcher asking for a barf bag.

Q1: What is your differential diagnosis? Based on this differential diagnosis how do you decide to call a 'code stroke' for transport to a stroke centre? Do you do a CT first and then decide or just send?

Q2: Would you treat her BP prior to transport or before she leaves the ED for CT?

Q3: You decide not to call a 'code stroke' and get a STAT CT head, which shows a large (35mL by volume) lobar hemorrhage. She returns from CT with a GCS of 9 and she is vomiting. How would you manage the airway at this point?

Q4: The radiologist calls you to tell you that there is intraventricular blood and maybe early signs of transtentorial herniation? How to do you manage the assumed elevated ICP in this patient?

Q5: Her platelet count comes back at 90,000. She last took her ECASA 325mg a few hours ago. Would you order a pool of platelets for transfusion?

Q6: What if she was taking Abixiban for stroke prevention for paroxysmal atrial fibrillation? Would you attempt to reverse the effects of Apixiban? How?

Q7: You speak to neurosurgery at your nearby tertiary care centre and decide to transfer the patient. How will you manage the glucose? The temperature? Seizure prophylaxis? BP? How will you ensure that transport is optimized for your patient?

The Big 6 considerations in medical management of ICH in the ED

1. BP
2. Coagulopathy
3. Glucose
4. Temperature
5. Seizure activity
6. ICP

Avoid hypoxemia at all costs!

Avoid hypotension at all costs!

Best article on ICH Management: De oliveira manael AL, Goffi A, Zampieri FG, et al. The critical care management of spontaneous intracranial hemorrhage: a contemporary review. Crit Care. 2016;20:272.

Case 4: About to barf AND the room is spinning!

A 46-year-old emergency physician and podcaster presents to your ED with an abrupt onset of vertigo and vomiting that came on while he was doing his daily yoga routine. On exam his vitals are normal but he looks pale and is holding on to the bed rail with both hands.

Q: What features on history would make you reassured that the diagnosis was benign one vs. a stroke? On physical?

VIDEO LINK for HINTS

exam: <http://emcrit.org/misc/posterior-stroke-video/>

Q: Which patients with vertigo require imaging in the ED?

Q: Which patients with vertigo require referral to a stroke clinic or neurologist? Admission?

Dr. Himmel's detailed handout on vertigo

<https://emergencymedicinecases.com/wp-content/uploads/2017/08/Himmel-Vertigo-Summary-2017.pdf>

Vertigo References

1. Clinical practice guideline: Benign paroxysmal positional vertigo. Bhattacharyya, n et al. Otolaryngology-Head and Neck Surgery 2008; 139: 47-81.
2. Does my dizzy patient have a stroke? A systematic review of bedside diagnosis in acute vestibular syndrome. Tarnutzer, MD et al. CMAJ 2011; 183(9):571-592.
3. HINTS to diagnose stroke in the Acute Vestibular Syndrome: Three-step bedside oculomotor examination more sensitive than early MRI diffusion-weighted imaging. Kattah, JC et al. Stroke 2009; 40: 3504-3510.