Stroke Network
Southwestern Ontario
Serving Erie St. Clair and South West LHINs

ACUTE STROKE UNIT ORIENTATION

2018

MODULE 5: NATIONAL INSTITUTES OF HEALTH STROKE SCALE (NIHSS)

Learning Objectives

Upon completion of this module, nurses will be able to:

- Explain why the NIHSS is a useful tool
- Understand how to perform NIHSS
- Demonstrate the proper method to perform a Visual Field Assessment
- Understand NIHSS scoring methods
- Describe how and where to document the scores in the chart
- Describe when to communicate results of NIHSS
- Relate NIHSS scores to patient outcomes
- Access the online NIHSS training program
- Understand the Modified NIHSS (mNIHSS)

The Powerpoint content for this module, Use of the NIH Stroke Scale, can be accessed here. Please note, a copy may be printed for personal use only.

The Modified National Institutes of Health Stroke Scale (mNIHSS) – Supplemental Material

A common complaint of the NIHSS is the length of time required to complete the examination. Shafqat et al (1999) found that completion of NIHSS takes about 9.7 minutes via telemedicine compared with 6.5 min via direct-in-person completion. Once a full baseline score is obtained, another alternative would be to use the modified version that focuses solely on the abnormal elements detected with the full NIHSS, or the use of the slim version 8-item which provided the best results in a study by Nye et al, 2012. However, whether or not a patient is a candidate for reperfusion therapy, **all patients with ischemic stroke should have the full NIHSS** when they are admitted to obtain baseline measure throughout their hospital stay (Nye et al, 2012). Nye et al (2012) also **caution that "slim" versions of the NIHSS may lose valuable information**.

The modified NIHSS (mNIHSS) reduces redundancy and excludes less reliable items. In the modified NIHSS, items that were removed were:

Level of Consciousness (item 1a)
Facial palsy (Item 4)
Limb Ataxia (Item 7)
Dysarthria (item 10)
The sensory item (item 8) was collapsed from 3 to 2 choices to improve reliability.

Kasner et al, 2002); Lyden, Lu, Levine, Brott & Broderick, 2001.

StrokeEngine also describes a 5-item NIHSS:

"For pre-hospital assessment of stroke severity, an 8 –item and a 5 –item NIHSS have undergone preliminary evaluation. The 8 items that were most predictive of good outcome three months after stroke were: right leg, left leg, gaze, visual fields, language, LOC, facial palsy and dysarthria. The shortened NIHSS-8 (sNIHSS-8) comprises all 8 of these items and the shortened NIHSS-5 (sNIHSS-5) contains only the first 5. In the validation models, receiver operator characteristic's (ROC) for the sNIHSS-8 and sNIHSS-5 were adequate (ROC = 0.77 and 0.76, respectively). Furthermore, no significant difference between the sNIHSS-8 and the sNIHSS-5 was observed. The sNIHSS-5 retained much of the predictive performance of the full NIHSS (Tirschwell et al., 2002)."

Nye et al. (2012) recommend:

1. Full NIHSS be completed prior to reperfusion in order to have a baseline score.
2. Complete entire NIHSS at least every 2 hours for the 1st 24 hours in patients who received thrombolysis, and then at least every 4 hours, increasing the time between assessments based on the patient's status.
3. When neurological assessments are carried out at 15 to 90 minute intervals, NIHSS can be customized to focus on the patient's disabilities.
4. If patient's neurological status improves or deteriorates, the full NIHSS should be completed and documented.

NIHSS Training and Certification Information

Training Options

These will be determined by your organization

- Read the PowerPoint, “Use of the NIH Stroke Scale” (Heart and Stroke Foundation) in Module 5 of the SWO Stroke Network’s Acute Stroke Unit Orientation Program.
- Engage in Apex/Hemispheres Training; total of eight modules one of which is NIHSS training. Visit www.swostroke.ca to find a contact in your area.

Practice the NIHSS on stroke patients

- NIHSS pocket cards can assist you in administering each item of the scale. They are available to order from the Heart and Stroke Foundation.

References

Heart and Stroke Foundation of Ontario (2008). NIHSS Workshop: Using the NIH Stroke Scale. (2008). Retrieved from http://www.heartandstroke.on.ca/site/c.pvI3IeNWJwE/b.5385175/k.C9B7/HCP__National_Institutes_of_Health_Stroke_Scale_Workshop_2008.htm.

Nye B.R., Hyde, C.E. Tsivgoulis, G., Albright, K. C., Alexandrov, A. V. and Alexandrov, A. W. 2012. 21(6), American Journal of Critical Care, 442-447.

Shafqat S., Kvedar J.C., Guanci M.M., Chang Y., Schwamm LH. Role for telemedicine in acute stroke: feasibility and reliability of remote administration of the NIH stroke scale. 1999. Stroke. 30:2141-2145.

The Modified National Institutes of Health Stroke Scale (mNIHSS): Its Time Has Come. Brett C. Meyer, M.D. and Department of Neurosciences, UCSD School of Medicine, Stroke Center (8466) 3rd Floor, OPC, Suite #3, 200 West Arbor Drive. San Diego, CA. 92103-8466, Patrick D. Lyden, M.D., FAAN Department of Neurosciences, UCSD School of Medicine, and Research Division, Department of Veteran's Affairs, Stroke Center (8466) 3rd Floor, OPC, Suite #3, 200 West Arbor Drive. San Diego, CA. 92103-8466.