

Case 001(May 28, 2021)

A 65 year old male with a history of hypertension, diabetes and dyslipidemia presents with weakness, dizziness and abnormal speech. While having breakfast the patient's wife noticed that he started to act strange after which he could not speak for few minutes. Upon standing up, he was dragging his right leg, and now able to slowly talk with speech sounds looking effortful. As symptoms were getting worse, he was rushed to the emergency department arriving in 2 hours from appearance of his first symptom. Upon examination, the patient appears confused but able to follow commands. He failed to reply correctly to questions asked. During the cardiac examination, a left carotid bruit was auscultated. On neurologic examination, mild facial asymmetry was noted on the right, with mild sensory and mild to moderate motor loss on the right leg . The patient did not have other cranial nerve abnormalities on examination. What is the patient's NIHSS score? (Reference:

https://www.stroke.nih.gov/documents/NIH_Stroke_Scale_508C.pdf)

- a. 7
- b. 9
- c. 11
- d. 13

ANSWER:

- A. Incorrect
- B. Correct. This patient has a NIHSS score of 9

Item 1A assess pts level of alertness. Normally we can assess this through patient's history, asking the patient 2 or 3 circumstances regarding the admission, stimulating the patient by patting or tapping the patient and applying noxious stimulation by pinching which occasionally maybe needed to know his level of consciousness. It is graded 0-3 , 0 is alert, 1 is not alert but roused with minor or verbal stimulation, 2 not alert; requires strong or painful stimulation and 3 reflex movements only or totally unresponsive. IB test the patient's ability to respond correctly to questions. It is graded 0-2, 0 answers both questions correctly, 1 answers one only , 2 both incorrect answers. IC Follows commands . It is graded 0-1 , 0 obeys both commands correctly, 1 obeys correctly and 2 both incorrect. This patient is confused giving a score of 0 for 1 A, following commands consistently with a score of 0, and incorrectly responds to questions giving a score of 2. So he will receive 2 for LOC. Patient did not have a gaze nor visual problem giving a score of 0. He had right mild facial asymmetry giving a score of 1 with right arm and right leg weakness, with some effort against gravity giving a score of 4 for both. He will receive a score of 1 for moderate sensory loss on the right arm and leg as well. His speech appeared effortful so he will get a score of 1 for mild to moderate aphasia and 0 for no dysarthria. There was no limb ataxia and inattention.

- C. Incorrect
- D. Incorrect

2. What is the next immediate plan for this patient to assist in the diagnosis?

- a. Get a plain brain CT scan
- b. Get a Plain MRI
- c. CTA or MRA
- d. Transcranial duplex scan

ANSWER:

- A. Correct. All patients suspected of having an acute ischemic stroke must receive at least a brain imaging study in the form of CT scan upon arrival to the hospital before initiating any specific treatment. A non-contrast CT scan is made to exclude the presence of hemorrhage should IV thrombolysis be needed. CT scan procedure is quick and readily available in most tertiary hospitals. Class Of Recommendation 1, Level of Evidence A. AIS Guidelines, AHA/ASA 2019 update
- B. Correct. Brain MRI especially with DWI and ADC sequences may also be done in special circumstances. Some hospitals are now equipped with MRI and can be performed quickly before IV thrombolysis or thrombectomy. It is also effective to exclude ICH before IV thrombolysis. Class Of Recommendation 1, Level of Evidence B. AIS Guidelines, AHA/ASA 2019 update
- C. Correct. CTA and MRA is recommended for certain patients. Some hospitals have the capacity to perform the procedure as quickly as possible before recanalization is done as definitive treatment. This is a new recommendation based on AIS guidelines. Class Of Recommendation 1, Level of Evidence A. AIS Guidelines, AHA/ASA 2019 update
- D. Incorrect. TCD is NOT an immediate plan for this case.

3. What is his risk factor that is least likely to cause a vascular disease?

- a. being a senior citizen
- b. hypertension
- c. gender
- d. diabetes

ANSWER:

- A. Incorrect. Age is a non-modifiable and independent risk factor for stroke.
- B. Incorrect. Hypertension is considered a definite risk factor to develop heart disease as well as stroke.
- C. Correct. The risk of stroke is higher in women than men. Estrogen decreases the stress induced gene expression in the ventricular myocardium and due to the absence of this protective effect of estrogen especially after menopause, the risk of induced myocardial damage and stroke is potentially increased. Women are believed to have a higher incidence of aneurysms, and atrial fibrillation especially as they age. The use of birth control pills as well as hormonal replacement therapy increases the risk of stroke in women due to its hypercoagulability
- D. Incorrect. Diabetes is definitely an independent risk factor for vascular disease be it affecting the brain, heart or other systems.