**NIHSS MADE EASY BY HPUPM (26/7/2022)**

**DISEDAKAN OLEH : DR SUHYNA**

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|  | 1)In Malaysia -There was a 4.9% increase in stroke incidence between 2008 and 2011among men but a 3.8%  fall among women -36.2% were discharged independent while 53.1% had functional dependence -Substantial increase in stroke incidence among those below 65 years old -The largest increase of 53.3% in men aged between 35-39 years and 50.4% in women of  similar age group2)The higher trend of stroke in this age group might be related to -Increase in the burden of cardiovascular risk factors especially hypertension among young  at aged 18-39 years -The prevalence of undiagnosed dyslipidemia among these age groups ranged from  40.0 to 48 hypertension (18.1-27.9%) and diabetes mellitus (9.5-12 4%)**ACUTE STROKE IS A MEDICAL EMERGENCY**Neurons Lost:Per Stroke-1.2 billionPer Hour-120 millionPer Minute-19 millionPer Second-32 000**SPOT A STROKE-how????**LEARN THE WARNING SIGNS AND **BE FAST****BE FAST****B**-BALANCE(loss of balance/headache/                           dizziness)**E**-EYES (blurred vision)**F**-FACE (one side of the face is drooping)**A**-ARMS (arm of leg weakness)**S**-SPEECH (speech difficulty)**T**-TIME (time to call ambulance immediately)**Lacunar infarct** - are small (<20 mm) infarcts in the distal distribution of deep penetrating vessels result from occlusion of one of the small penetrating end arteries result primarily from in situ microatheroma formation or liponyalinosis.**Watershed infarct** - are ischemic lesions which are situated along the border zones between the territories of two major arteries usually caused by hypoperfusion or decreased blood       **CLINICAL FEATURES & CLASSIFICATION**In Malaysia widely used classification are:**OXFORD classification** - clinical findings **TOAST classification** - Based on aetiology**OXFORD CLASSIFICATIONS:**

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| **TERM** | **CLINICAL FEATURES** | **VASCULAR BASIS** |
| Total Anterior Circulation Syndrome **(TACS)** | \*Hemiparesis AND\* Higher cortical dysfunction(dysphasia or visuospatial neglect) AND\*Homonymous hemlanopia | Usually proximal middle cerebral artery(MCA) or ISA occlusion |
| Partial Anterior Circulation Syndrome **(PACS)** | \*Isolated higher corticol dysfunction OR\*Any two of hemiparesis,higher cortical dysfunction,hemianopia | Usually branch MCA occlusion |
| Posterior Circulation Syndrome **(POCS)** | \*Isolated hemianopia(posterior cerebral artery (PCA)) brainstem or cerebellar syndromes | Occlusion of vertebral, basilar, cerebellar or PCA vessels |
| Lacunar Syndrome **(LACS)** | \*Pure motor stroke OR\*Pure sensory stroke OR\*Sensorimotor stroke OR\*Ataxic hemiparesis OR\*Clumsy hand-dysarthria | Small penetrating artery occlusion,usually in tenticulostriate branches of MCA, or supply to brainstem or deep white matter |

**TOAST CLASSIFICATION**

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| **TERM** | **CLINICAL** | **RADIOLOGICAL FEATURES** |
| Large-artery Atherosclerosis | Signs of lesion in cortex (aphasia,apraxia,neglect),subcortex,cerebellum or brainstem | -CT/MRI shows lesion >1.5 cm in cortex,subcortex,cerebellum or brainstem compatible with the symptoms-CT scan negative when performed shortly after onset |
| Cardio-embolic | Signs of lesion in cortex (aphasia,apraxia,neglect),subcortex,cerebellum or brainstem | -CT/MRI shows lesion >1.5 cm in cortex,subcortex,cerebellum or brainstem compatible with the symptoms-CT scan negative when performed shortly after onset |
| Small-vessel disease | Clinical signs of a lacunar syndrome (pure motor,pure sensory,sensorimotor,atactic hemiparesis or dysarthria-clumsy hand syndrome) | -CT/MRI shows lacunar infarction (lesion <1.5cm) compatible with the symptoms-CT scan negative when performed shortly after onset |

**STROKE MIMICS**Non-stroke condition presenting with stroke-like symptoms1)Seizure/Post-Ictal Todd Paralysis2)Complicated migraine3)Functional Neurological or Conversion     Disorders4)Hypoglycaemia/Hyperglycaemia     SevereHyponatremia/Metabolic.      Encephalopathy5)Hypertensive Encephalopathy/PRES6)Peripheral Vertigo: BPPV, Labyrinthitis,     Vestibular Neuronitis7)Bell's Palsy8)Other: Guillain Barre, Myasthenia Gravis,                 MS, Brain Tumour/Abscess,                  Encephalitis,Sepsis,Syncope Sent from my iPhone**NHISS SCORE**NIH Stroke Scale (NIHSS) + modified NIHSS (mNIHSS) – Peripheral BrainMILD : <4 – NOT INDICATED FOR THROMBOLYSIS**MODERATE : 5-24 – FOR THROMBOLYSIS**SEVERE :Above 25 – NOT FOR THROMBOLYSIS(risk of bleed)**WHEN ELSE FOR THROMBOLYSIS??**1. Base on the code:

 1. Code RED – stroke < 4-6 hrs (hyperacute) -**THROMBOLYSIS**
2. Code YELLOW – stroke 6-24 hrs -**THROMBOLYSIS**  AND

 ELIGIBLE FOR THROMBECTOMY ALSO1. Code GREEN – stroke > 24 hrs – Rehabilitation
2. ≤ 9hours wake up stroke (midpoint)
3. Severe Aphasia
4. Within window( <6 hrs)

DWI-ADL-FLAIR (from imaging)WHEN ELSE ELIGIBLE FOR THROMBECTOMY??When **cortical signs** appear – Aphasia* Hemiparesis
* Neglect
* Homonymous hemianopia

**HOW SOON FOR THROMBECTOMY?*** Within 24 hrs (walaupun > 9hrs midpoint stroke)
* Large vessel occlusion
* **\*MCA/ICA occlusion**/yellow code
* Mild to moderate NHISS

**\***selalunya akan ada **cortical signs (aphasia/hemiparesis/homonymous hemianopia/neglect)**\*thrombolysis might work as wellOnce arrived at rescue, when is the best for thrombolysed stroke patient?-within window- DWI-ADL-FLAIR (imaging results)GOLDEN TIME and state all these in referral letter when you want to refer stroke patient to Res-q1. Time/onset of stroke
2. Quality of live before stroke
3. NHISS score

\*9 hours wake up stroke – GOLDEN hrsWake up stroke-midpoint sleep + 9hrs (mesti within 24 hrs)Lepas 9 jam dari midpoint sleep – dah infarct,tissue not viable anymore, so no need for thrombolysis or thrombectomy When to start anti platelet therapy?1. Bleeding risk 6% from thrombolysis-rpt CT scan after 24 hrs thrombolysis-if no bleeding

 To start anti platelet1. TIA - double antiply x 1/12.After 1/12, then reduced to single anti platelet only
2. NHISS score <6 – double antiply x 1/12.After 1/12, then reduced to single anti platelet only
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