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**PROFILING OF FUNCTIONAL AND DISABILITY STATUS IN LOCKED-IN SYNDROME (LIS) PATIENTS USING INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF) BRIEF CORE SET FOR STROKE IN HOSPITAL REHABILITASI CHERAS (HRC)**

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**ABSTRACT**

**Introduction:** Locked-In Syndrome (LIS) is a catastrophic, disabling state with tetraplegia and anarthria commonly due to brainstem stroke. Rehabilitation in LIS is a tremendous challenge due to multiple impairments and disabilities involved. International Classification of Functioning, Disability and Health (ICF) is an internationally accepted framework for describing function, disability and health which can be used to describe multiple impairments and disabilities that are present in LIS.

**Method:** There are a total of three LIS due to stroke which were referred to HRC for post-stroke rehabilitation between 2018 and May 2020. The diagnoses were confirmed via CT scan. After interdisciplinary team assessment, the patients' functional and disability status were profiled using ICF Brief Core Set for Stroke, which has six items for Body Function component (i.e. functions of consciousness, orientation, attention, memory, muscle power and mental functions of language) and seven items for Activities and Participation component (i.e. communicating with receiving spoken message, speaking, walking, washing oneself, toileting, dressing and eating). A Likert scale of 0 to 5 was used to determine the severity of the problem for each item (0 = no problem, 1= very mild, 2= mild, 3= moderate, 4=severe, 5= complete problem).

A score of 3 and above was considered significant for an item that a patient has problem with. All patients have significant impairment in muscle power (for Body Function component). It is in speaking, walking, washing oneself, toileting, dressing and eating (for Activities and Participation component). Score in other items are not significant.

**Conclusion:** The ICF Brief Core Set for Stroke can be used to describe functional problems and impairments to guide a holistic, interdisciplinary rehabilitation approach in managing LIS.

# LONG TERM CARE JOURNEY OF STROKE SURVIVORS WITH MILD IMPAIRMENT LIVING IN THE COMMUNITY : A MIXED METHOD RESEARCH

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## ABSTRACT

**Introduction:** Lack of continuity of care and disparity in access to services is still a problem in long term stroke care. The aim of the study is to describe the journey of care from the perspective of stroke survivors living in the community.

**Methods:** This study was a mixed method research that analysed integrated data from quantitative measurement, an audit of the participant's medical records with quantising data from semi structured interview of each participant. Enrolled participants were stroke survivors admitted to a tertiary medical centre with the clinical diagnosis of acute stroke or transient ischaemic attack (TIA) in Jan 2016-Jan 2017. Participant were local resident, aged at least 18 years old, spoke Malay or English with low disability Modified Rankin Scale equal or less than 4. Participants who were affected by stroke secondary from other medical comorbidities and have cognitive impairment were excluded. Potential participants were screened from emergency department's attendees. This study obtained approval from the relevant medical ethic committees.

**Results:** There were 89 participants consented to the study. The mean age of participants were 64 years old ( SD 12). The study found 93.3% of the stroke survivors attended follow up post discharge but the number dropped to 83.1% after the second year. At present, only 38% of these participants have regular primary care follow up whilst 45% have at least 1 to 3 follow up in the past year with the neurology clinic. Lack of communication in terms of risk education is also a problem with discrepancies between reported compared to recorded information on education and counselling in stroke education ( 37% vs 60%), stroke risk education ( 35% vs 72%), diet education ( 47.2% vs 42.7%) and medication education ( 69% vs 54%).

**Conclusion:** The transition of care from neurology clinic to long term care in the community is fragmented with less than 40% of stroke survivors accessing services provided by the primary care. There was missed opportunity in delivering risk and preventive education to reduce the risk of recurrent stroke and cardiovascular events.

# HEMIPLEGIC MIGRAINE, A RARE STROKE MIMIC: A CASE REPORT

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## ABSTRACT

**Introduction:** Hemiparesis is the commonest acute stroke presentation. However, not all hemiparesis is stroke. Stroke mimics account up to 30% of initial stroke presentation, of which approximately 1% is hemiplegic migraine.

**Case report:** A 33 year old female with childhood bronchial asthma and no vascular risk factors presented with right sided hemiparesis and right upper motor neuron facial palsy. Her initial upper and lower limb power was 4/5. NIHSS 4. This started insidiously 1 week prior to presentation and was preceded by severe left sided headache, with nausea, vomiting, foggy vision, photophobia and phonophobia. She experienced similar headaches for 3 months, in episodic manner but was not associated with any aura. Computed tomography (CT) of the brain showed ill-defined hypodensity at temporal region. Subsequent magnetic resonance imaging (MRI) done on the same day was normal. During the second day of admission, her power was 5/5 with residual right facial palsy. She was started on NSAIDS and Flunarizine. Headache started to subside and she was discharged home well with an appointment to review her symptoms.

**Conclusion:** Absence of vascular risk factors in a young person should trigger a clinician to look hard for alternate diagnosis to stroke. Although rare, timely diagnosis and treatment is important as hemiplegic migraine is a debilitating illness that negatively impacts on quality of life.

# **MORE THAN JUST SLEEPINESS’: A CASE REPORT ON SIGNIFICANT HYPERSOMNOLENCE AS A ‘NOT-TO-MISS’ SIGN OF TOP OF BASILAR SYNDROME**

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## **ABSTRACT**

**Introduction:** Sleep-disordered breathing (SDB) is common post stroke which includes Obstructive Sleep Apnoea (OSA) or Central Sleep Apnoea (CSA). Top of the Basilar Syndrome (TOBS), is a rare subtype of posterior circulation stroke (POCS) which manifest as abnormalities of alertness, hypersomnolence, with abnormal oculomotor functions.

**Method:** A case report of a patient with evolving posterior circulation infarct who demonstrated worsening hypersomnolence correlating with clinical features of TOBS.

**Case Report:** Mr. FAB, 48-year-old gentleman, presented with dizziness and right hemiparesis with full GCS, left eye ptosis with ophthalmoplegia correlating with Weber Syndrome. CT brain shows multifocal infarcts at left subcortical region, left thalamus and left cerebral peduncle. Day 7 post stroke, he developed right eye nystagmus with CT brain showed basilar artery dense sign, suggestive of acute basilar artery thrombosis. He was then referred for intensive stroke rehabilitation. Day 21 post stroke, he developed new left hemiparesis, aphasia and dysphagia with interrupted sleep and excessive daytime sleepiness. However, repeated CT brain did not show significant progression. STOPBANG score was 4 (high risk of OSA). Within that week he had deterioration in function with regression in outcome measures. On Day 27 post initial stroke, patient had worsening hypersomnolence, grunting and altered consciousness. GCS dropped to E4V1M5 requiring airway management thus transferred to acute setting. CTA showed V4 segment of left vertebral artery thrombosis with proximal V3 segment left vertebral artery stenosis confirms provisional diagnosis of TOBS. Patient succumbed 10 days later due to evolving stroke.

**Conclusion:** Hypersomnolence due to TOBS can mimic SDB manifestation in the post-acute stroke period. High suspicion of stroke progression is vital. Vigilance in recognizing basilar artery dense sign is crucial to detect basilar artery thrombosis, potentially leading to TOBS which has high mortality.

# CASE STUDY: REHABILITATION CHALLENGES OF A PATIENT WITH LEFT HEMINEGLECT AFTER A RIGHT MIDDLE CEREBRAL ARTERY TERRITORY INFARCT

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## ABSTRACT

**Introduction:** Neglect is a disorder of attention where a patient doesn't respond to stimuli contralateral to the brain lesion site, which isn't attributed to a primary sensory or motor cause. The case highlights the rehabilitation interventions and challenges for a patient with severe neglect.

**Methods:** A case report of a patient with severe neglect after stroke.

**Results:** A 61-year old Malay lady was admitted for stroke rehabilitation following a right parietal lobe infarct two weeks after the stroke onset. She presented with severe personal, peripersonal and extrapersonal neglect. Goal setting prior to admission highlighted the neglect severity which may impede functional recovery.

She underwent a rehabilitation program over four weeks which included several neglect interventions, encompassing a top-down and bottom-up approaches. Interventions included providing auditory and tactile stimulus on the left, promoting visual scanning, transcutaneous electrical nerve stimulation and use of visually contrasting distractors on the left side and visual biofeedback using full-length mirror

Outcome measures were recorded on admission and on discharge.

Modified Barthel Index scoring improved from 8% to 21%. Berg Balance Score remained the same at 0/56. Repeat paper and pencil testing showed a slight improvement in her neglect. Catherine Bergego Scale improved from 22/30 to 16/30. Ecological assessment noted a slight improvement in her daily activities, especially for feeding.

Despite minimal objective gains in functional outcome scores, both the patient and the carer were satisfied with the rehabilitation outcomes.

**Conclusion:** The presence of neglect is a challenge in rehabilitation and benefits from early detection. Unilateral neglect is a negative prognostic factor after stroke and a cautious approach should be adopted when counselling patients and caregivers during rehabilitation goal setting. Specialized neglect interventions should be included as part of the rehabilitation program to ensure the best outcomes and improved quality of life for the patient.

# **NURSE-LED ACTIVITIES TO INCREASE ACTIVITY AND FACILITATE RECOVERY AMONGST INDIVIDUALS WITH STROKE IN AN INPATIENT REHABILITATION SETTING**

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## **ABSTRACT**

**Introduction:** Florence Nightingale's Environmental Theory defined Nursing as "the act of utilizing the environment of the patient to assist him in his recovery." In a rehabilitation ward, nurses have a central role in the interprofessional team and in all care activities, specifically to encourage patients' activity levels. Creative use of the environment is a contributing factor to encourage activities and facilitate recovery.

**Objective:** To illustrate the active role of rehabilitation nursing in increasing patients' activities in an inpatient stroke rehabilitation setting; complementing the concept of Environmental Enrichment embraced in the inpatient stroke rehabilitation setting.

**Method:** Illustrative report of the spectrum of Nurse-Led Activities (NLA) organized in an inpatient stroke rehabilitation setting.

**Results:** The Nurses-Led Activities (NLA) are systematically organized to provide motor, sensory, cognitive and social stimulation, and delivered via various approaches. Stimulating activities in a spacious and safe environment are part of essential element in conducting NLA. The NLA include multifaceted activities comprising of exercise-based activities (Taichi), recreational activities (gardening), leisure (karaoke, fish-feeding), art and craft (painting, flower arrangement) and game matches (Bingo, Jenga). Social interactions are encouraged by promoting the use of communal space in the ward lounge. Family participation is highly encouraged during the NLA sessions. Narrated benefits of the NLA include increase physical activity, elevate psychological outlook and improve family participation. After NLA sessions, patients are noted to perform more self-directed practices and demonstrate improved self-efficacy and autonomy.

**Conclusion:** Rehabilitation nursing role in the interdisciplinary stroke rehabilitation management is tremendous. In the absence of therapist-led intervention during afterhours and weekends, nurses play a big role to increase overall activity level. NLA is a feasible approach of delivering opportunities to increase meaningful activities amongst individuals with stroke in the inpatient rehabilitation setting. NLA has reframed nursing practices into a distinctive role in promoting overall recovery.

# NEUROLOGISTS VERSUS NON-NEUROLOGISTS THROMBOLYSIS (NNT) STROKE STUDY: INTRAVENOUS THROMBOLYTIC FOR ADULTS WITH ACUTE ISCHAEMIC STROKE IN MALAYSIAN PRIMARY STROKE CENTRES VERSUS ACUTE STROKE READY HOSPITALS: COMPARISON OF SERVICE EFFICIENCY AND PATIENTS' CLINICAL OUTCOMES

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## ABSTRACT

**Introduction:** Intravenous thrombolysis with recombinant tissue plasminogen activator (rt-PA) is beneficial in acute ischaemic stroke (AIS) even when administered by non-neurologists in non-stroke centres. We aim to compare the efficiency, effectiveness, and safety of such therapy in Malaysian primary stroke centres (PSCs) versus acute stroke ready hospitals (ASRHs) without in-house neurologists.

**Methods:** We conducted a hospital-based, multi-centre, periodic cross-sectional study in Malaysia. Through retrospective review of medical records, real world data was extracted/collected for analysis. Consecutive adults with AIS who received IV rt-PA therapy from 01 January 2013 to 31 March 2020 in the selected PSCs and ASRHs were included. Statistical significance was set at  $p < 0.05$ .

**Results:** A total of 299 adults, namely 225 (75%) from PSCs and 74 (25%) from ASRHs, were included. Both groups were matched in age ( $57.6 \pm 13.2$  vs  $56.6 \pm 12.9$  years,  $p = 0.569$ ) and male:female gender ratio (65%:35% vs 62%:38%,  $p = 0.621$ ). Their NIHSS upon presentation, namely  $12.8 \pm 6.1$  in PSCs and  $13.8 \pm 5.1$  in ASRHs, were fairly comparable with  $p = 0.182$ . Both PSCs and ASRHs recorded comparable door-to-needle time ( $91.6 \pm 45.6$  vs  $96.8 \pm 40.7$  minutes,  $p = 0.376$ ). Similar proportion of patients recorded  $mRS \leq 1$  within 3 months post-rt-PA, namely 45.4% in PSCs and 48.6% in ASRHs with  $p = 0.630$ . The rates of intracranial haemorrhage (ICH) in PSCs versus ASRHs groups, specifically (i) any ICH (18.2% vs 20.3%,  $p = 0.695$ ), (ii) symptomatic ICH (10.7% vs 8.1%,  $p = 0.525$ ), and (iii) fatal ICH (4.0% vs 5.4%,  $p = 0.742$ ) were comparable. Similar 90-day overall mortality rates (15.6% vs 16.2%,  $p = 0.892$ ) were recorded.

**Conclusion:** Our study may provide translational real-world evidence which suggests that IV rt-PA therapy in AIS can be equally safe, effective, and efficiently delivered in both Malaysian PSCs and ASRHs. This potentially practice-changing evidence may encourage the establishment of such service in more local hospitals without in-house neurologists, hence extending the benefits to a greater proportion of Malaysian populations.