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ACTIVATION OF STROKE PROTOCOL AND THROMBOLYSIS IN NON CT HOSPITAL

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ABSTRACT

Introduction: Stroke is a medical emergency which is a leading cause of morbidity and mortality nationwide. In order to improve the outcome of stroke patients, Stroke Protocol was initiated in the Emergency Department, Hospital Bukit Mertajam, although without advance imaging facilities. Stroke Protocol was coordinated via activation of yellow and red alert, primary team doctors in Hospital Bukit Mertajam and Hospital Seberang Jaya, escort team and radiology staff in Hospital Seberang Jaya.

Methods: A departmental level study on the effectiveness of Stroke Protocol was conducted from 1st March 2020 - 31st May 2020. This prospective study is to compare the time taken to thrombolyse acute ischemic stroke in 2019 and post implementation of Stroke Protocol in 2020. Duration of time from registration, consultation, CT brain, and thrombolysis therapy were recorded and compared. The inclusion criteria are acute presentation within 4.5 hours of onset and National Institute of Health Stroke Scale Score of 6-25.

Results: The Stroke Protocol implemented from March 2020 till May 2020, had a total number of 25 patients with 2 patients undergoing thrombolysis. The mean time from registration to CT brain was 1 hour 42 minutes. While registration to thrombolysis was 2 hours 16 minutes. In comparison to 2019, mean time from registration to CT brain was 4 hours 36 minutes with no thrombolysis done.

Conclusion: The implementation of Stroke Protocol shortened the arrival time to CT scan and arrival time to thrombolytic therapy, thus reducing morbidity and mortality and increasing the quality of service in Emergency Department.

OUTCOME OF STROKE THROMBOLYSIS IN LACUNAR STROKE AT HSNZ

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ABSTRACT

Objective: To investigate the outcome of stroke thrombolysis in patients diagnosed with lacunar stroke (LACI) in Hospital Sultanah Nur Zahirah.

Introduction: Intravenous thrombolysis has proven to be a beneficial treatment in acute ischemic stroke. Lacunar stroke is associated with an unfavourable long term prognosis with an increased risk of recurrent stroke, cognitive dysfunction and death. The role of thrombolysis in lacunar stroke has been uncertain given the absence of a clear demonstration of thrombolysis.

Methods: We analysed the data from the stroke thrombolysis registry of Hospital Sultanah Nur Zahirah, collected from January 2014- January 2020. Diagnosis of LACI was assigned by neurologists using the Oxfordshire Community Stroke Project (OCSP) classification. Patients were categorized according to the National Institute of Health Stroke Scale (NIHSS) severity in mild NIHSS (≤ 8), moderate NIHSS (9-15) and severe stroke (NIHSS ≥ 16). Patient outcome is defined by the Modified Rankin Score (mRS) at 3-months follow up, where mRS 0-1 = full recovery, mRS 2 = minor disability, mRS 3=moderate disability, mRS 4-5 = major disability, and mRS 6= death.

Results: 94 patients were thrombolysed from January 2014 to January 2020. The frequency of LACI was 27.7% (26/94). Overall, 53.8% had mild and 46.2% had moderate stroke pre thrombolysis. The mean baseline NIHSS score was 7.96, and the mean NIHSS score 24hours post thrombolysis was 4.83. At 24hour, 73% had mild, 19.2% had mod while 7.6% had severe stroke. At 3 months, 19.2% made full recovery, 30.8% had mild disability, 11.5% had moderate disability, 7.6% had major disability; death 15.3%, and 11.5% was lost to follow up.

Conclusion: Patients with lacunar stroke in our study had improvement in NIHSS scores at 24hours and has better outcome at 3 months. Further studies with a larger sample size should be performed to determine the risk versus benefits of thrombolysis in lacunar stroke.

THE USE OF INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF) TO IDENTIFY BARRIERS IN REHABILITATING PATIENTS WITH RIGHT HEMISPHERIC STROKE

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ABSTRACT

Background: Stroke is a vascular insult to the brain that results in neurological deficits, which last for more than 24 hours. Patients with right hemispheric stroke present with dense hemiplegia, left sensory neglect, apathy and poor functional outcome. The ICF is a useful conceptual framework that can be used to identify barriers in stroke rehabilitation.

Objective: The aim of this paper is identify barriers in rehabilitating right hemispheric stroke patients using the ICF conceptual framework.

Methods: Three female and four male patients with right middle cerebral infarcts were admitted into the neurorehabilitation ward in Hospital Rehabilitasi Cheras in May 2020. Rehabilitation goals, medical and functional information were categorised into five ICF domains. Outcome measures such as Mini Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA), Modified Barthel's Index (MBI), National Institute of Health Stroke Study (NIHSS) and Berg's Balance Scale (BBS) scores were charted on admission and before discharge. Common issues were identified and summarised.

Results: The most common neurological deficits after right cerebral infarcts were left hemiplegia (100%), left tactile neglect (100%), left visual neglect (71.4%), poor truncal balance (85.7%), severe cognitive deficits (85.7%) and apathy (57.4%). Five out of seven patients were wheelchair dependent and required assistance with their transfers and personal care. Barriers to progress in rehabilitation were cardiovascular issues (57.1%), severe left sensory neglect (100%), severe cognitive deficits (85.7%), poor truncal balance (85.7%), poor social support or family discord (57.1%), MBI scores of 87% or less (71.4%) and frailty (57.1%). All patients could not resume their previous roles in the community despite improvements in their MBI and BBS scores at the end of their rehabilitation program.

Conclusions: The ICF may be a useful tool to guide clinicians in identifying barriers to stroke rehabilitation. Barriers to progress are cardiovascular issues, left sensory neglect, poor balance, severe cognitive deficits, frailty and poor social support.

CEREBRAL VENOUS SINUS THROMBOSIS: CLINICAL FEATURES AND REHABILITATION OUTCOME

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ABSTRACT

Introduction: Cerebral venous sinus thrombosis (CVST) is rare and accounts for <1% of all strokes. In CVST, thrombosis occurs in venous side of the brain circulation, leading to occlusion of one or more cerebral veins and dural venous sinus. Prognosis for functional recovery is favourable with early therapeutic and rehabilitation intervention.

Objective: To report the presenting clinical features of CVST, sequelae and outcome of individuals diagnosed with CVST and referred for neurorehabilitation.

Method: Single-centre of four case-series of CVST cases referred for neurorehabilitation.

Results: Case 1: 54 y.o lady presented with right hemiparesis and focal seizures. Diagnosed as superior sagittal sinus thrombosis with bilateral haemorrhagic parietal venous infarct. Developed bilateral paresis and fully dependent. With intensive rehabilitation, achieved full functional status within 6 months.

Case 2: 36 y.o lady presented with headache, vomiting and altered behaviour. History of taking oral contraceptive. Investigation demonstrated internal cerebral vein, inferior sagittal sinus and straight sinus thrombosis causing bilateral basal ganglia, thalamus, corona radiata and corpus callosum infarction. She developed amnesic features with no focal motor impairment. Memory issues gradually resolved and successfully returned to work within 6 months.

Case 3: 42 y.o man presented with significant headache. Diagnosed as left transverse and sigmoid sinus thrombosis with temporal venous infarct. Developed significant memory and attentional cognitive issues, requiring cognitive training. Resultant cognitive sequelae gradually improved at 1-year follow-up.

Case 4: 39 y.o lady presented with headache, altered behaviour and generalized seizures. Diagnosed as sagittal sinus thrombosis with bifrontal haemorrhagic venous infarct with cerebral edema necessitating decompressive hemicraniectomy. She has left hemiparesis, isolated cranial nerve paralysis with impaired executive function and memory. Neurorehabilitation resulted in good outcome and achieved full independence within 3 months.

Conclusion: Clinical features in CVST are variable. Despite extensive brain involvement, favourable recovery is possible with early treatment and neurorehabilitation.

UNLOCKING THE LOCKED-IN SYNDROME (LIS)’: INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF) AS A CLINICAL TOOL IN FORMULATING REHABILITATION PLANS AND OVERCOMING CHALLENGES IN LIS PATIENTS

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ABSTRACT

Introduction: Locked-In Syndrome (LIS), a disabling medical condition leading to tetraplegia and anarthria in a state of wakefulness commonly due to brainstem stroke. Due to the severity of impairment and complexity of care, individuals with LIS pose tremendous rehabilitation challenges and require interdisciplinary rehabilitation approach.

Method: Case series in a single institution, highlighting the rehabilitation challenges encountered in two LIS patients during inpatient rehabilitation. WHO International Classification of Functioning, Disability and Health (ICF) is a universal framework used to delineate the rehabilitation issues and devise a structured rehabilitation plan.

Case Series: Two LIS patients admitted in neurorehabilitation ward. Mr. AR, 50-year old man developed classical LIS due to bilateral pontine and midbrain infarct secondary to basilar artery thrombosis. Mr. FB, 46-year old man developed incomplete LIS due to brainstem and cerebellar infarction secondary to basilar artery thrombosis. Based on ICF, both patients had similar impairments in body structure and body function which are tetraplegia (causing immobility), anarthria (communication problem), and dysphagia on enteral feeding. Mr. AR had tracheostomy for secretion management and had upper gastrointestinal bleeding episodes which prolonged his inpatient stay. Both patients had significant activity limitations (severe carer dependent) and participation restriction (role fulfilment as husband, father, employee). Other rehabilitation issues delineated were significant environmental barriers (inadequate home environment and carer burden). Individualized goal-setting and structured rehabilitation planning was performed for both patients using ICF and executed accordingly.

Conclusion: Formulation of goal setting and rehabilitation plans are more effective with the application of WHO-ICF in LIS patients. Personal and environmental factors can be facilitators or barriers, thus play a huge role in the rehabilitation of LIS patients. Interdisciplinary holistic approach (expert medical care, intensive therapy, customized equipment and latest technology) based on ICF is essential in providing best possible outcome and promote better quality of life.

VESTIBULAR MIGRAINE : A CASE REPORT

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ABSTRACT

Introduction: Vestibular migraine is a common medical diagnosis. It is a term used for patients with a past or current history of migraine, presenting with dizziness as the predominant symptom with or without headache. The management for vestibular migraine is not well known or available. However, vestibular rehabilitation therapy (VRT) has been shown to be an effective treatment option.

Methods: Here we report a case that fulfilled the criteria for diagnosis of vestibular migraine based on International Classification of Headache Disorder third edition (ICHD-3) whom benefited from VRT.

A 44-year old lady presented with complaint of persistent dizziness. She had a past history of long standing persistent headache described as unilateral, throbbing in nature and she was treated for migraine without aura. Later on, she was diagnosed with haemorrhagic stroke secondary to left parietal ruptured arteriovenous malformation (AVM) in 2018. The headaches were now associated with dizziness and imbalance. She was treated with betahistine for some time, but she still had continuous dizziness which varied in intensity. Vestibular assessment showed abnormal central vestibular-ocular reflex function. Vestibular rehabilitation therapy was started which include gaze stabilization exercise with total of eight therapy sessions.

Results: At the completion of the program, her dizziness and headache have improved with vestibular rehabilitation therapy and concurrent T.betahistine as well as her quality of life.

BURDEN OF STROKE IN HOSPITAL USM, KOTA BHARU, MALAYSIA.

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ABSTRACT

Introduction: Stroke is currently a major cause of disability in the world. The incidence and prevalence of stroke in Kota Bharu, where the ethnicity is mostly Malay and mostly from the underprivileged economy background might showed different set of data from the rest of Malaysia. This data might contribute to better prevention and awareness campaign in this particular area.

Method: Patients admitted to Hospital USM with CT scan finding suggestive of stroke from 1 January 2018 to 31 December 2019 were retrospectively enrolled in this study. Descriptive analyses were performed.

Results: 575 patients were admitted to Hospital USM with diagnoses of stroke. Interestingly, out of these patients, 98.4% (n=566) were ischemic stroke patients while only 1.6% (n=9) were haemorrhagic stroke patients. For ischemic stroke data, 58.5% were male patients and 41.5% were female, with the group mean age of 62.8 years. As for haemorrhagic stroke data, 88.8% were female patients and 11.2% were male, with the group mean age of 56.9 years.

Conclusion: The incidence and prevalence of stroke in Hospital USM showed an increasing trend with similar nearly age range with the Acute Stroke Registry Malaysia 2010-2014 data. The high prevalence of ischemic stroke might be a point to ponder and a proper planning to increase the stroke risk factors awareness aiming at reducing the stroke burden in Malaysia is important.