CHALLENGES OF POST-ACUTE STROKE REHABILITATION IN OBESE PATIENTS: A CASE SERIES

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ABSTRACT

Introduction: The prevalence of obesity worldwide is increasing, as are the associated co-morbidities including stroke. In post-acute stroke rehabilitation, obesity gives an impact in the rehabilitation efficiency, length of stay and cost of treatment.

Methods: Here we discuss two cases of patient with obesity undergoing post-acute stroke inpatient rehabilitation in our centre and the challenges encountered. Improvement in functional outcome was measured by the Modified Barthel Index (MBI).

Case 1:

35 years old male with BMI of $46kg/m^2$ diagnosed with acute left basal ganglia bleed secondary to hypertensive emergency. Despite good motor recovery, the progress of his rehabilitation program was delayed with difficulty in obtaining the proper sized equipment to facilitate in his mobility. Furthermore, management of his co-morbidities which are severe obstructive sleep apnoea and chronic right foot cellulitis had to be optimised before proceeding with his stroke rehabilitation.

Case 2:

43 years old morbidly obese (BMI $44kg/m^2$) male was diagnosed with acute left thalamic bleed which was conservatively treated. The admission was complicated with acute attack of gouty arthritis and acute kidney injury which impeded his rehabilitation. The slow rehabilitation progress was further hampered by the lack of suitable equipment for his mobility training.

Results: We highlight how obesity can affect rehabilitation by the length of stay and expenditures incurred. However, improvement in functional outcome for both cases can be seen with MBI score from 45% to 55% and 42% to 82% for Case 1 and Case 2 respectively. Methods taken to overcome the obstacles presented are also discussed.

Conclusion: Despite several challenges in rehabilitation of obese patients, targeted interdisciplinary interventions can still be done with team effort to optimize post-acute stroke rehabilitation care delivery which will improve the functional outcome.

OVERVIEW OF ISCHEMIC STROKE AMONG END STAGE RENAL FAILURE PATIENTS ON HEMODIALYSIS

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ABSTRACT

Introduction: Ischemic stroke among end stage renal failure (ESRF) patients on hemodialysis (HD) are not previously study in Malaysia. This study investigated the clinical spectrum and outcome of ischemic stroke in ESRF patients on HD.

Methodology: Case control study from May 2019 till May 2021 at Department of General Medicine Hospital Bukit Mertajam, Penang. Inclusion criteria include ESRF patient on HD aged more than 18 with stroke symptoms, wake up stroke and plan CT brain either shown ischemic cerebral infarction or normal finding. Stroke mimic symptoms and non contrasted CT brain shown hemorrhage or mass, chronic kidney disease or ESRF not on HD were excluded.

Results: A total of 57 patients were recruited with mean age of 73 year old SD (13), male 40 patients (70%), female 17 patients (30%). Only 18 patients, 32% presented early following stroke symptoms with 88% of lacunar stroke. Baseline NIHSS 4, SD (1). Mean hemodialysis vintage was 6 years, SD (3). Pre HD mean systolic blood pressure was 184 mmhg, SD (14), Pre HD mean diastolic blood pressure was 107 mmhg, SD (6). Pre HD blood parameters revealed potassium 3.9, SD (0.8), Urea 20.6, SD (4.8), corrected calcium 1.9, SD (0.2), phosphate 2.3, SD (0.3) and hemoglobin 8.6, SD (0.8). Mean BMI 27, SD (2.1). Mean Modified Rankin Score was 3 upon discharge. Case fatality in 1 year was 16%. The risk factors for fatality were recurrent stroke (HR 49; 95% CI 7-340), smoking (HR 25; 95% CI 6-97), atrial fibrillation (HR 25; 95% CI 6-97), diabetes mellitus (HR 17; 95% CI 6-51), ischemic heart disease (HR 13; 95% CI 5-33) and hypertension (HR 11; 95% CI 5-24).

Conclusion: Preventive measures in the risk factors contributed to the case fatality among ischemic stroke patients with ESRF on HD should be emphasized for better outcome.

DRIVING ADVICE DOCUMENTATION ON DISCHARGE LETTERS FOR CARDIAC AND OTHER PATIENTS.

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ABSTRACT

Introduction: Patients with relevant cardiac conditions should be given driving advice prior to hospital discharge. This is in accordance to the National Driving and Vehicle Licensing Agency (DVLA) guidelines in UK. The purpose of this quality improvement project is to increase the awareness among doctors on the importance for driving advice for patients as a holistic approach in patient care and to contribute to public safety.

Method: Posters to promote driving advice documentation were put in place at doctors office in cardiology and acute medicine ward in Queen Hospital, Burton. Collection of data was done prospectively over a month. Discharge letters was screened for presenting complain, diagnosis, driving status and driving advice. The conditions included in this audit was acute coronary syndrome, pacemaker insertion, heart failure, stroke, epilepsy, seizure and syncope for investigation. Data was then compared to the initial first cycle of audit. Statistical analysis was calculated using Fisher's exact test.

Conclusion: This is the first cycle of the QIP. In the initial audit, only 8 % of cardiology patients was found to have driving advice documented. Following the intervention with posters, the first cycle of data suggested a positive impact of the intervention with an increase of documentation of driving advice by 24 % (from 8 % to 32 %). Significance of intervention was calculated and given a value of 0.028. It was also noted that 10 % of the patients was neurology and had 100 % driving advice documentation. The QIP is now expanding to focus on for patients with stroke.

PREPAREDNESS IN STROKE CAREGIVING AMONG FAMILY CAREGIVERS

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ABSTRACT

Background and Purpose: Stroke or brain attack is the sudden loss of neurological function caused by interruption of the blood flow to the brain. The term cerebrovascular accident (CVA) is used to interchangeably with stroke to refer to the vascular condition of the brain. This scenario also has put the immediate family members to become the family caregivers without knowing whether they are well prepared or not. Moreover, it is important to ensure that family caregivers are ready to take care of stroke patients in order to increase their contribution to the rehabilitation of stroke patients. Therefore, this study is intended to highlight the preparedness in stroke caregiving among family caregivers. Objective: To determine the preparedness in stroke caregiving among family caregivers. Methods: A cross-sectional study was carried out with a convenience sample among 85 family caregivers of stroke patients using self-administered questionnaires, demographic data and preparedness for caregiving scale (PCS) at Rehabilitation Medicine Department of Hospital Sungai Buloh, Selangor. Statistical Package for the Social Sciences (SPSS) software version 21.0 was used to analyze the data collected. Results: (response rate). There are significant associations between age and gender and preparedness for caregiving scale (PCS) score and no significant association between income and PCS score. The younger and female caregivers are more prepared than older and male family caregivers in stroke caregiving. PCS score are greater in higher income caregivers. Conclusions: Findings of study are beneficial to demonstrate the statistical data for preparedness among family caregivers in stroke caregiving at Rehabilitation Medicine Department of Hospital Sungai Buloh which can develop future educational and motivational support particularly for family caregivers.

ACUTE STROKE UNIT OF SEBERANG JAYA HOSPITAL – ONE YEAR EXPERIENCE

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ABSTRACT

Introduction: Acute stroke unit (ASU) has been proven to improve clinical outcome of stroke patients compared to general medical wards via its comprehensive and coordinated care delivered by multi-disciplinary team. Ever since Seberang Jaya Hospital started ASU service in 11 November 2019 to become a Primary Stroke Centre for northern region of Malaysia, we would like to evaluate our service and share our experience.

Methods: This is a retrospective cross-sectional study. Data were extracted from ASU Admission Bundle of all patients whom were admitted to the ASU of Seberang Jaya Hospital, from 1 January 2020 until 31 December 2020.

Results: A total of 462 patients were admitted to ASU during the study period. Two-thirds (66%) of them were males and 34% were females. Majority were Malays (49%), followed by Chinese (31%), foreigners (17.0%) and Indians (16.0%). The mean age was 59 years old (SD 14.3 years) and the mean NIHSS was 3 (SD 2.9). Almost all the patients (90%) received stroke education from the ASU nurse, 84% had swallowing test performed by occupational therapists and 92% were seen by physiotherapist before discharged. Average length of stay was 1.60 days.

Conclusion: As one of the 4 centres in Malaysia having ASU service, we aspire to inspire more centres to establish this service to benefit our stroke patients and improve patient care.

UKM MEDICAL CENTER STROKE UNIT: TEAM RECRUITMENT OF PATIENTS TO THE AVERT DOSE TRIAL DURING THE COVID-19 PANDEMIC

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ABSTRACT

Introduction: Mobility training is a complex intervention and recovery post-stroke is multidimensional. Adaptive trial design is flexible and efficient. AVERT DOSE is the first trial to use this design in stroke rehabilitation.

Materials and Method: AVERT DOSE is a four-arm, two-stage, covariate-adjusted, response-adaptive, randomised trial. We will recruit >2,500 patients from Australia, New Zealand, Malaysia, Singapore, India, UK and Brazil. Randomisation to two groups according to stroke severity (Mild: NIHSS 0-7; Moderate: NIHSS 8-16). Covariates are age, geographic region and reperfusion interventions. Interventions: Patients are randomised to one of four mobility training regimens in each strata (including a pre-specified reference group), and the intervention is delivered for up to 14 days. UKM Medical Centre is recruiting to this trial. Primary Outcome: Identification of the intervention regimen that results in higher proportion of favourable outcome (mRS 0-2) at 3 months post-stroke. Blinded assessments will occur at 3 and 6 months. An adaptive sample size re-estimation provides 80% power to detect a 10% absolute treatment effect or larger compared to the pre-specified reference group, with a significance threshold of p=0.025 per stratum. Analyses: Intention-to-treat. Trial registration: ACTRN:12619000557134.

Results: Trial Status. Recruited: 101 participants, 24 from UKM. Online training packages and zoom meetings for all international sites (n=24) provided remote support, responses to COVID-19. Emergency department screen all admissions for COVID with two hours response time. Effective recruitment strategies use multiple staff to screen and recruit.

Conclusion: Undertaking rehabilitation research requires a flexible and dynamic problem-solving approach, especially during a pandemic.

SUCCESSFUL THROMBOLYSIS BEYOND GUIDELINES: A CASE SERIES

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ABSTRACT

Introduction: The therapeutic benefit of thrombolysis is not extended to more than 4.5 hours in many patients due to the protocol's time window restriction. However, everyone's penumbra differs, and delayed thrombolysis therapy may still be beneficial.

Case Presentation: We reported two acute stroke cases with moderate National Institutes of Health Stroke Scale (NIHSS) and onset beyond 4.5 hours that were successfully thrombolyzed with intravenous recombinant tissue plasminogen activator (tPA) - low-dose Tenecteplase (TNK). Case 1 Forty-year-old young gentleman with NIHSS 6/42 and disabling aphasia. The MRI showed hyper intense signal on diffusion weighted imaging (DWI) at right corona radiata with corresponding FLAIR signal mismatch. The T1-weighted black blood vessel wall imaging shows atherosclerotic plaque enhancement in keeping with underlying intracranial atherosclerotic disease. Case 2 Sixty-three-year-old gentleman with NIHSS 14/42 and cortical signs. The MRI showed hyper intense signal on DWI at left middle cerebral artery (MCA) region with corresponding FLAIR signal mismatch. The MRA revealed reduced opacification at M3 segment of left MCA indicating distal vessel occlusion.

Discussion: Both patients were thombolysed based on DWI/FLAIR mismatch – tissue basis rather than time window and resulted in good neurological recovery and significant improvement of MRS to zero at 90 days regardless of the stroke aetiology. DWI-FLAIR mismatch was defined as presence of parenchymal signal lesion on DWI but absence of corresponding hyperintense lesion on the FLAIR. It has a relatively high specificity (71–93%) and moderate sensitivity (48–62%) for identifying stroke lesions within 4.5 hours of onset (1-5). Interestingly, both patients received intravenous TNK 0.25mg/kg which resulted in a robust clinical recovery. Although TNK used as an off-label treatment for AIS, it has a higher fibrin specificity and a longer half-life, and many studies showed TNK - trends towards more early neurologic improvement at 24 hours and larger proportion of good neurologic outcome at 90 days (6-8)

Conclusion: In conclusion, thrombolysis in AIS with late time window using penumbra-based imaging is safe and effective in neurological recovery. Extensive research on penumbra-based thrombolysis should be conducted, including the benefit of using Tenecteplase as a thrombolytic agent in AIS patients.