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FACTORS INFLUENCING THE UPTAKE OF STROKE THROMBOLYSIS IN MALAYSIA: A CASE STUDY FROM THE HEALTHCARE PROVIDERS' PERSPECTIVE

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ABSTRACT

Introduction: Translation of evidence into clinical practice for use of stroke thrombolysis has been slow, especially across low- and middle-income countries. This study aims to explore factors influencing the uptake of intravenous thrombolysis among ischemic stroke patients in Malaysia, from the perspective of healthcare providers.

Methods: Data for this single case study from a large tertiary hospital was sourced from a larger multiple case design study. A mixed method approach was used for data collection: 1) semi-structured in-depth interviews and focus group discussions, 2) surveys, and 3) review of medical records. Interview guides were mapped according to the Tailored Implementation of Chronic Diseases (TICD) framework. Forty-six participants comprising of healthcare providers involved in providing the service were included. Thematic analyses were conducted inductively before triangulated with quantitative analyses.

Results: Six contributing factors found include: 1) patient-related which were delayed presentation and patient comorbidities, 2) work process factors comprised of challenges in identifying stroke cases during triage and different thresholds in decision making, 3) team dynamics factors were communication and differences among team members' perspective, 4) constraints of resources including facilities and human resources, 5) leadership which included availability of stroke champions and institutional support, and 6) initiatives for continuous improvement to deliver the service. Quantitatively, pre-hospital delay was the main reason for missed opportunities of intravenous thrombolysis (58.5%). Less than 5% potentially had in-hospital delays. Survey among triage staff reported that 70% had little difficulties in identifying stroke cases.

Conclusion: Factors related to patients and constraints of resources were commonly reported. Nevertheless, optimal triage, team dynamics and availability of local champions were other pertinent factors contributing to the uptake of stroke thrombolysis. Understanding factors which affect the implementation of this evidence-based therapy allows targeted actions to enhance its adoption to be carried out.

GROWTH HORMONE AND ISCHEMIC STROKE: FOCUS ON GROWTH HORMONE DEFICIENCY AND THERAPEUTIC EFFECTS OF GROWTH HORMONE ON BRAIN RECOVERY

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ABSTRACT

Introduction: Stroke, with ischemic stroke being more common than haemorrhagic stroke, is a leading cause of acquired disability worldwide with a long recovery journey. In the context of ischemic stroke, studies have reported increased prevalence of growth hormone (GH) deficiency in this population. Further, GH is shown to enhance neurorestoration. With it being readily available in the market, its therapeutic potential in ischemic stroke recovery has been considered in both pre-clinical and human studies. Hence, this review aims to critically appraise whether GH is a potential therapeutic target for stroke recovery.

Methods: Relevant articles were identified through a systematic review conducted via PubMed, OvidMedline, Ovid Embase, Web of Science and Scopus plus hand-searching of reference lists of retrieved publications. Title, abstract and full text screening along with data extraction of included articles were done based on pre-determined inclusion and exclusion criteria.

Results: The search yielded a total of 1348 articles in which 15 were included. 8 studies reported post-stroke GH deficiency, 4 reported pre-clinical evidence of GH therapeutic effects on stroke recovery and 3 reported clinical studies of recombinant human GH (rhGH) treatment post-ischemic stroke. Studies reported that post-stroke GH deficiency is common during the subacute phase and is persistent to the chronic phase of ischemic stroke with 44.5% of participants from 5 studies experiencing it. For preclinical studies, it is reported that GH is a potential treatment for stroke recovery. Clinical studies also show that GH is safe and beneficial for improving cognition, motor, cellular and molecular outcomes post-stroke.

Conclusion: This systematic review suggests that GH deficiency is common after ischemic stroke and that GH treatment is a promising therapy for post-ischemic stroke recovery. However, future research should comprise a larger number of study participants of both genders and of a longer follow-up duration.

PREDICTORS OF POST-THROMBOLYSIS INTRACEREBRAL HAEMORRHAGE IN PATIENTS WITH ACUTE ISCHEMIC STROKE

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ABSTRACT

Introduction: Intracerebral haemorrhage (ICH) following intravenous thrombolytic therapy (IVT) for acute ischemic stroke is associated with a high rate of morbidity and mortality. It is crucial to understand the associated risk factors of ICH post-IVT in order to reduce the ICH risk.

Objective: To study the risk factors associated with ICH in acute ischemic stroke patients treated with IVT.

Methods: This is a retrospective cross-sectional study of all ischemic stroke patients who had received IVT from year 2012 to January 2021. Data was collected via review of medical notes and National Neurology Registry.

Results: A total of 97 stroke patients received IVT from 2012 to January 2021. Twenty-one patients (21.6%) experienced ICH post-IVT. The mean age of patients developed ICH was 66 (SD=8.9). Fourteen were male (66.7%) and 7 were female (33.3%). Older age group (P=0.014), hypertension (P=0.034), atrial fibrillation (P=0.022), and NIHSS score (P=0.031) were significantly associated with the prevalence of ICH in post-IVT stroke patients. Prevalence of ICH was significantly higher among those with severe stroke with NIHSS score ≥16 (52.4%), compared with those with moderate (38.1%) and mild stroke (9.5%). Other variables such as gender, diabetes mellitus, smoking, dyslipidaemia, previous stroke, stroke subtypes, onset-to-treatment time, and door-to-needle time were not found to have significant association with prevalence of ICH.

Conclusion: Older age group, hypertension, atrial fibrillation and NIHSS score on admission ≥16 are risk factors for ICH in patients with acute ischemic stroke treated with IVT in our hospital. These findings are useful to help in prognosticate risk of ICH post IVT.

PREDICTORS OF MORTALITY IN THROMBOLYSED ACUTE ISCHEMIC STROKE PATIENTS OF SEBERANG JAYA HOSPITAL

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ABSTRACT

Introduction: Third leading cause of death in Malaysia, stroke is a debilitating disease which incidence is continue to rise. To improve stroke care and prognosis of patient, it is important to identify potential predictors of mortality in stroke patient who have undergone reperfusion therapy.

Objective: To determine the predictors of 90 days mortality in acute ischemic stroke patients who underwent intravenous thrombolysis (IVT) in Seberang Jaya Hospital.

Methods: This is a retrospective cross-sectional study involves stroke patients who were thrombolysed in Seberang Jaya Hospital from year 2013 to January 2021. Data was extracted from the medical records and National Stroke Registry.

Results: Out of 97 acute ischemic stroke patient who were given IVT, 19 patients (19.59%) have died within 90 days. The mean age of the fatalities was 64.6 (SD = 12.6). Ten were male (52.6%) and 9 were female (47.4%). Mortality rate was significantly higher in NIHSS score of severe stroke (63.2%) compared to moderate (31.6%) and mild stroke (5.3%) (P = 0.001). Stroke sub types was significantly associated with mortality whereby total anterior circulation infarct (TACI) had highest mortality rate (52.6%) followed by partial anterior circulation infarct (PACI) (36.8%), lacunar infarct (LACI) and posterior circulation infarct (POCI) (5.3% each) (P = 0.002). The other variables such as age, gender, presence of hypertension, diabetes mellitus, atrial fibrillation, dyslipidaemia, smoking, onset to treatment time, door to needle time were not found to have any significant association with mortality.

Discussion and Conclusion: NIHSS scores and stroke subtype were the 2 potential predictors of mortality in acute ischemic stroke patients in our centre.

BILATERAL DEJERINE SYNDROME: A CASE REPORT WITH DIAGNOSTIC DILEMMA

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ABSTRACT

Introduction: Bilateral Dejerine syndrome (medial medullary infarct) is a very rare type of stroke with catastrophic consequences, therefore early diagnosis is crucial. Herein, we report a rare case of bilateral Dejerine syndrome presented with quadriparesis and multidirectional nystagmus.

Case Presentation: A 52-year-old woman presented with blurring of vision, dizziness and vomiting for one day, associated with quadriparesis. She had a history of hypertension and diabetes mellitus with poor glycemic control. On examination, she was fully conscious with dysarthria. Her bilateral upper limbs and lower limbs power were 4/5 with intact sensation. Her ophthalmology examination revealed multidirectional nystagmus. However, there was no dysmetria and dysdiadochokinesia. Subsequently, magnetic resonance imaging of brain showed characteristic “heart appearance” shape on diffusion weighted imaging (DWI) consistent with bilateral medial medullary stroke and presence of severe stenosis of right vertebral artery.

Discussion: Bilateral Dejerine syndrome is very rare, and clinical diagnosis without neuroimaging can be difficult. The most common clinical features are weakness, dysarthria, hypoglossal palsy, flaccid, or spastic quadriplegia. Multidirectional nystagmus is not a usual finding in a pure Dejerine syndrome. In acute bilateral medial medullary infarct, MRI shows a characteristic “heart-shaped appearance” in the ventral medulla. Overall outcome of bilateral medial medullary infarct without intervention in acute phase is poor with severe morbidity and mortality. Therefore, early diagnosis based on combination of clinical and radiological findings is critical.

Conclusion: Despite the rarity, bilateral Dejerine syndrome should be considered as a differential diagnosis in patient with acute onset of multidirectional nystagmus and quadriparesis.

OUTCOME OF ISCHEMIC STROKE THROMBOLYSIS TREATMENT IN SEBERANG JAYA HOSPITAL, A SINGLE CENTER 9 YEARS REVIEW: 2012- 2020

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ABSTRACT

Introduction: Stroke is the second leading cause of mortality and morbidity worldwide. Intravenous thrombolysis (IVT) with recombinant tissue plasminogen activator (rtPA) is the standard of care for patients with acute ischemic stroke.

Objective: To study the treatment outcome of ischemic stroke patients who had received IVT at Seberang Jaya Hospital.

Methods: This is an analysis of an ongoing stroke registry data that included acute ischemic stroke patients who had received IVT at Seberang Jaya Hospital from year 2012 to 2020.

Results: A total of 92 patients with ischemic stroke had received IVT from year 2012 to 2020. The mean (SD) NIHSS upon admission was 12.5(4.98). 43.48% were partial anterior circulation infarct (PACI), 27.17% were lacunar cerebral infarct (LACI), 22.83% were total anterior circulation infarct (TACI), and 6.52% were posterior circulation infarct (POCI). Modified Rankin Scale (MRS) score at three months were: MRS 0 (8 [8.70%]); MRS 1 (15 [16.30%]); MRS 2 (16 [17.39%]); MRS 3 (12 [13.04%]); MRS 4 (14 [15.22%]); MRS 5 (7 [7.61%]); and MRS 6 (17 [18.48%]), missing in follow up (3 [3.26%]). Twelve (13.04%) patients died in the same admission, and five (5.43%) patients died within 3 months. Twenty patients (21.73%) developed intracranial bleeding (ICB) post IVT: 10 were symptomatic and 10 were asymptomatic. Eight patients (8.70%) required decompressive craniectomy, in which three patients had MRS 3 and five patients died at 3 months.

Conclusion: Among acute ischemic stroke patients who had received IVT at our center, a smaller proportion of patients achieved favourable outcome (MRS score of 0 or 1) at three months compared to the ECASS III trial (25% vs 52.4%). However, our ICB complication rate was lower (21.73% vs 27%). Further studies are needed to look into the prognostic factors of stroke thrombolysis outcome at our center.