

Stroke

Isolated weakness of the index finger flexion in subcortical infarction

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The efferent projections from the cortical area of the hand have not been fully defined. Moreover isolated finger weakness in association with cerebral infarction is rare. A 60- year- old man suddenly developed weakness in his left index finger. MRI clearly demonstrated that a discrete infarction was the cause of weakness of isolated index finger flexion in this patient. The lesion was located in the medial margin of an inverted omega- shaped precentral knob on axial MRI and in the subcortex of right frontal lobe on coronal MRI. Currently, there has been a controversial debate in the neuroscience community as to whether or not finger somatotopy in the primary motor cortex exists. Several studies on stroke patients supported the existence of alleged topography for fingers in the human motor cortex: ulnar fingers—medial and radial fingers—lateral. Other investigators demonstrated multiple representation or spatially overlapping patterns of the cortical motor hand area. Unexpectedly, the MRI lesion does not agree with a previous report that predominant weakness of radial- sided fingers is usually caused by laterally located infarcts whereas weakness of ulnar fingers is related to medial lesions in the precentral knob, topography, which also was observed in the previous report. Despite this, observations in my patient may be of value because this is the rare report of isolated index finger flexion weakness caused by a small subcortical infarction. At the least, this findings strongly suggest that a discrete area for index finger flexion may exist.

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ABCG2 Gene Polymorphisms May Affect the Bleeding Risk in Patients on Apixaban and Rivaroxaban

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Direct oral anticoagulants (DOACs) are widely used for stroke prevention in atrial fibrillation. However, they have a bleeding complication. Breast cancer resistance protein, encoded by ABCG2, is known to be an efflux transporter of apixaban and rivaroxaban among DOACs. This study investigated the association between gene variants and bleeding complications during treatment with ABCG2 substrates (apixaban and rivaroxaban). Patients treated with apixaban and rivaroxaban were enrolled from June 2018 to December 2021. Five single nucleotide polymorphisms (SNPs) of ABCG2 were selected. Previously studied genes (ABCB1, CYP3A4, and CYP3A5) were further analyzed as possible confounders. Finally, a total of 16 SNPs were examined in this case–control study. The outcome was defined as major bleeding and clinically relevant non-major bleeding. Among 293 patients, 64 were cases. The mean age of the patients was 68.8 years, and males were 62.5%. Multivariable Model I revealed that a history of bleeding, concurrent use of proton pump inhibitor (PPI), ABCG2 rs3114018, and ABCB1 rs1045642 were significantly associated with bleeding complications; the AORs (95% CI) were 6.209 (2.210–17.442), 2.385 (1.064–5.349), 2.188 (1.156–4.142), and 3.243 (1.371–7.671), respectively. Model II showed that modified HAS-BLED score, concurrent use of PPI, ABCG2 rs3114018, and ABCB1 rs1045642 were significantly associated with bleeding complications. In conclusion, the modified HAS-BLED score, a history of bleeding, concurrent use of PPI, ABCG2 rs3114018, and ABCB1 rs1045642 were significantly associated with the risk of bleeding complications in patients on apixaban and rivaroxaban, after adjusting for other confounders.

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Acute multifocal cerebral microhemorrhages in patient with chronic pancytopenia

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Cerebral microhemorrhages are small sized, focal, perivascular hemosiderin depositions and known to occur well when there are risk factors such as chronic hypertension and brain amyloid vasculopathy. These lesions are well detected by Gradient echo MRI and susceptibility weighted imaging sequences. We report a case of sudden onset multifocal cerebral microhemorrhages in patient with chronic pancytopenia.

A 77-year-old man visited due to general weakness and fever. Blood tests confirmed platelets 21,000/ μ L, fibrinogen 582 mg/dl, D-dimer 3.70 mg/L, prothrombin time 31.0 seconds. *Klebsiella pneumoniae* was identified in blood culture tests and IV ceftriaxone was started. After that, petechia occurred throughout the body. On neurological examinations, mental status was drowsy and brainstem reflexes were normal. The muscle strength represented MRC motor grade 4. Sensory tests and cerebellar function tests were not performed due to poor cooperation. Deep tendon reflexes reduced without asymmetry in all extremities. Babinski reflex showed negative responses. Multiple microhemorrhages were found in the entire brain on imaging.

In addition to the various conditions mentioned earlier, as a secondary result of hypoxia accompanied by severe diseases or bacterial or viral infections, vascular endothelial dysfunction may occur, and ultimately red blood cells may leak out of the blood vessels inside the brain, resulting in microhemorrhages in the brain. In this case, it is estimated that a wide range of acute cerebral microhemorrhages occurred due to microthrombosis in blood vessels and hemoglobin deposits around small blood vessels after the occurrence of disseminated intravascular coagulation due to severe infection with chronic pancytopenia.

Stroke

The global trends of neuronal autophagy in ischemic stroke from 2005 to 2022 by bibliometric analysis

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Objective: Autophagy, one of the mechanisms that determine the ultimate fate of different cell types. The balance between the burden of intracellular substrate targeted for autophagy and the capability of the cellular autophagic machinery regulates whether autophagy is useful or harmful in ischemic stroke (IS). Neuronal autophagy plays a double-edged sword role in IS. **Method:** This retrospective observational bibliometric study was collected from 2006, through March, 2022. We visually analyzed the research hotspots of neuronal autophagy related to IS, and generated various visual maps to display publications, authors, sources, countries, organizations, and keywords. **Result:** A systematic search was conducted and yielded 242 articles. Since 2006, the role of neuronal autophagy in IS has received widespread attention and gradually become a hot topic in this context. Many institutions and authors made outstanding contributions to this field. The majority of institutions were from China and the United States. We discovered that investigations of autophagy in IS have focused on both brain injury and neuroprotection. Neuronal autophagy after IS is widely related to a variety of signaling pathways and inflammatory factors. Autophagy plays an important role in all phases of IS. **Conclusions:** The effect of neuronal autophagy on IS will continue to become a hot topic, which is of great significance in guiding the development of new therapy for IS. Autophagy-related pathways will become the focus of future research. Regulation of neuronal autophagy at different stages after IS may reduce neuronal injury and promote nerve repair and even regeneration.

Keywords: Neuron; Autophagy; Ischemic Stroke; Bibliometric analysis; Web of Science

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Stroke

The CT collateral map: Assessment of baseline lesion and penumbra after Acute Ischemic Stroke.

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Background and purpose: The MR collateral has demonstrated prognostic value in functional and tissue outcomes of patients with acute ischemic stroke (AIS). We investigate whether the CT collateral map can assess the baseline lesion and penumbra.

Materials and Methods: We generated CT collateral maps derived from CT perfusion, which comprised images of arterial, capillary (CMC), early venous (CMEV), late venous, and delay phases. Volumes of DWI lesions, CBF 30%, Tmax 6 s, and hypoperfused lesions on CMC and CMEV in baseline imaging and follow-up DWI lesions were measured. The concordance correlation coefficients of the volumes of CBF 30% and hypoperfused lesions on CMEV for the volumes of baseline DWI lesions were analyzed. In patients with unchanged arterial lesions on follow-up angiography, the concordance correlation coefficients of the volumes of Tmax 6 s and hypoperfused lesions on CMC for the volumes of follow-up DWI lesions were analyzed.

Results: One-hundred eleven patients (mean age \pm standard deviation, 71.6 ± 13.7 ; 60 women) were included. The concordance correlation coefficients the volumes of CBF 30% and hypoperfused lesions on CMEV for the volumes of baseline DWI lesions were 0.76 (95% CI, 0.60-0.91) and 0.97 (95% CI, 0.95-0.98), respectively. The concordance correlation coefficients of the volumes of Tmax 6 s and hypoperfused lesions on CMC for the volumes of follow-up DWI lesions were 0.12 (95%CI, -0.03-0.56) and 0.97 (95% CI, 0.93-0.99), respectively.

Conclusions: Precise prediction of the baseline lesion and penumbra can be possible using the CT collateral map.

Stroke

Isolated weakness of middle, ring, and little fingers due to a small cortical infarction in the medial precentral gyrus

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Background: Small cortical strokes can produce predominant isolated weakness in a particular group of fingers: radial or ulnar. The traditional views are of point-to-point representations of each finger to neurons located in the precentral gyrus of the motor cortex such that the neurons of the radial fingers are located laterally and those of the ulnar fingers are located medially. We present a case of isolated weakness of middle, ring, little fingers due to small cortical infarction in lateral precentral gyrus with functional MRI. **Case:** A 58-year-old man suddenly developed weakness in his right middle, ring, little fingers. On examination, motor examination revealed mild weakness (IV) of his right middle, ring, little fingers. The weakness was most severe at the distal interphalangeal joint. The power of finger flexion and extension are equally affected. **Conclusion:** In spite of our patient had predominant ulnar-sided finger weakness, the location of the lesion was more lateral side in precentral gyrus. We found the correlation between diffusion weighted MRI lesion and functional MRI lesion in our patient.

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The protective effect of hydroxysafflower yellow A on neurons after OGD/R based on autophagy and pyroptosis

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Objective: To investigate the protective effect of hydroxysafflower Yellow A (HSYA) on neurons after Oxygen-glucose deprivation/reoxygenation (OGD/R) injury by regulating autophagy and pyroptosis. **Methods:** HT22 cells at the logarithmic growth stage were randomly divided into 4 groups: normal group, model group, HSYA group, and rapamycin group. Except normal group, the cells in other groups were treated with hypoxia and glucose deprivation for 2h and reoxygenation and glucose restoration for 24h. Cell activity was detected by the CCK-8 method, cell damage was detected by the LDH method, protein expression of LC3 and NLRP3 were observed by immunofluorescence staining, and protein expression of LC3, p62, NLRP3, Cleaved Caspase-1, GSDMD, and IL-1 β were detected by Western blot method. **Results:** Compared with the normal group, the cell viability and LDH leakage rate in the model group were significantly decreased. Immunofluorescence results showed that the protein expressions of LC3 and NLRP3 were increased. Western blot results showed that the intracellular expressions of LC3- II/LC3- I were increased, the expression of p62 was decreased, and the protein expressions of NLRP3, Cleaved Caspase-1, GSDMD, and IL-1 β were significantly increased. After the intervention of HSYA and rapamycin, the ratio of LC3- II/LC3- I increased, and the expression of p62 and pyrodeath-related proteins decreased compared with the model group. **Conclusion:** HSYA can improve the neuronal survival rate after OGD/R, which may be related to promoting autophagy and inhibiting pyroptosis induced by NLRP3 inflammasome.

Keywords: Pyroptosis; Autophagy; Hydroxysafflor yellow A; Neurons; Oxygen-glucose deprivation/reoxygenation (OGD/R)

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Stroke

Clinical and Neurovisual correlation in Patients with post Stroke depression

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Post Stroke depression is an interesting and common occurrence. Depression is one of the major impediments to full physical and mental recovery from stroke

We observed 40 patients during the last year (after post pandemic period) period with post stroke depression. In 75% (30 cases) stroke was ischemic and in 25% (10 cases) -hemorrhagic. In 50% (24 cases) post stroke depression was developed within the first one to two months after the stroke ,in 25% (10 cases) post stroke depression was developed during the first 6 months after the stroke ,in 13.3% (5 cases) with hemorrhagic stroke, depression was developed after years, 10% (4 cases) after month and in one case (1.7 %) after two days .All cases of stroke ,were established by CT and MRI investigations and pathological processes mainly observed in Frontal and Frontal-Occipital area . All patients were reviewed according Hospital Anxiety and Depression Scale(HADS) .

Post stroke depression is most often treated with antidepressant medications. We used antidepressants in a group of patients aged 60 to 80 years: Alprazolam, Citalopram and Alprazolam at the same time and Sertraline .

Although Alprazolam showed the best results our study did not revealed relative effectiveness of one of the drugs used in the patients and also no difference was found due to the type of the disease (ischemic or hemorrhagic)

Stroke

Case report: A patient with ischemic stroke and epileptic status

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Symptoms in ischemic stroke and those during and after an epileptic seizure can be a differential diagnosis problem. These two conditions, though rarely, can manifest at the same time in the same patient. It is important that they are quickly demarcated in order to treat the different etiological and pathogenetical mechanisms accordingly.

Here we present the case of a 56 year old male with history of epilepsy, which during a routine EEG develops acute left side limb weakness. CT of the brain showed no signs of acute ischemic stroke or hemorrhage, so treatment with Actilyse was started. The immediate reaction of the medical team in assessing the condition and the treatment that followed are the reasons the patient managed to overcome the neurologic deficit.

A multidisciplinary team was formed during the patient's stay in order to assess the different complications that arose, such as pneumonia and pleural effusion, difficulty breathing and consciousness disturbances.

Along with all the medications administered, repetitive transcranial magnetic stimulation was performed in order to activate the brain's neuroplasticity mechanisms that help speed up the recovery process.

Stroke

Efficacy and Safety of Injection Tenecteplase in 4.5 to 24 hours imaging eligible window patients with Acute Ischemic Stroke (EAST-AIS) – An Interim analysis.

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Background and Aims:

Current practice of intravenous thrombolysis for Acute Ischemic Stroke (AIS) patients approved within window period of 0-4.5 hours. This study evaluates the efficacy and safety of injection Tenecteplase in AIS patients within extended window period of 4.5-24 hours from onset.

Methodology:

This randomized controlled trial is being conducted at a tertiary care hospital after Institute Ethics Committee approval with CTRI registration- CTRI/2022/03/040718. A total of 100 patients shall be randomized in our trial. Injection Tenecteplase (0.25 mg/kg bodyweight; maximum 25 mg) will be administered to 50 patients and 50 patients will be administered similar looking placebo. A total of 24 patients have been randomized; first patient was enrolled on 1st August, 2022.

Results:

Interim analysis of adverse events was carried out with ten included patients. 70% (7/10) were males, 51.1 years was the mean age of presentation and 431 minutes (7 hours 18 minutes) was the average time of onset. Symptomatic intracerebral-hemorrhage was observed in two patients in active trial drug group and in one patient in placebo group. Out of 10 patients, decompressive hemicraniectomy was observed in three patients in active trial drug group and two in placebo group. One patient of active trial drug group and in two patients of placebo group observed infarct growth. Out of 10 cases; three deaths were observed.

Conclusion:

This is an ongoing trial, with 76 eligible patients yet to be enrolled. The results of this trial may give us information regarding future management of ischemic stroke in extended window-period.

Stroke

PREDICTING CONTRAST INDUCED ACUTE KIDNEY INJURY RISK IN ACUTE BASILAR ARTERY OCCLUSION: COMBINATION OF PRE-PROCEDURAL SYSTEMIC INFLAMMATION RESPONSE INDEX AND D-DIMER TO FIBRINOGEN RATIO.

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Background: Discussing the predictive value of pre-procedural Systemic Inflammatory Response Index (SIRI) combine with D-dimer to fibrinogen ratio (DFR) for Contrast Induced Acute Kidney Injury (CI-AKI) in patients with Acute Basilar Artery Occlusion (ABAO) underwent thrombectomy.

Methods: Clinical data were collected from January 2019 to March 2023. Patients were divided into CI-AKI group (23) and Non-CI-AKI group (90), based on the occurrence of CI-AKI after thrombectomy. Logistic regression was used to analyze the risk factors for the occurrence of CI-AKI. The Restricted Cubic Spline (RCS) was used to model the correlation between SIRI, DFR, and CI-AKI. The Receiver Operating Characteristic (ROC) curve was drawn to evaluate the predictive value of SIRI, DFR and their combined indicators for CI AKI.

Results: The incidence of CI-AKI was 20.4% (23/113). Multivariate logistic regression analysis demonstrated that ln (SIRI) (OR=2.020, 95% CI: 1.076-3.791; P=0.029) and ln (DFR) (OR=1.549, 95% CI: 1.043-2.301; P=0.030) were independent influencing factors for CI-AKI in ABAO patients post-thrombectomy. RCS analysis showed that when SIRI 2.67 and DFR 0.18, there was a significant positive correlation with the occurrence of CI-AKI. In receiver operating characteristic analysis, the area under the curve for SIRI combined DFR was 0.729 (95% CI: 0.610-0.848; P = 0.001).

Conclusion: An increase in SIRI and DFR within certain ranges can effectively predict the risk of CI-AKI occurrence in ABAO patients underwent thrombectomy, and the combined prediction of the two has greater significance.

Stroke

Clinical profile and outcomes of Cerebral Venous Sinus Thrombosis in a Tertiary Care Setting in Sri Lanka

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Background and Aims

Cerebral venous sinus thrombosis (CVST) is rare form of stroke. Etiology of CVST is broad. This study aims to analyze clinical and radiological profile of CVST in Sri Lanka.

Methodology

An observational prospective study included 28 adult participants with symptomatic CVST. They were assessed at diagnosis, 6 months and 1 year.

Results

Median age of the population was 35 years with female majority (82.1%, n=23). Commonest symptoms were headache at 89.3% (n=25), seizures and focal neurological deficits (42.9%, n=12 each). Commonest risk factors were oral contraceptive use in 25% (n= 7), local infections in 14.7 and APLS in 10.7%. Radiological features consist of Sinus hyperdensitiy in 28.6% (n=8), cerebral edema and empty delta sign at 14.3% each (n=4). 42.9% (n=12) had single venous sinus involved. Commonest sinuses to be involved were superior sagittal and Transverse sinuses in 53.6% (n=15) each. Venous infarcts and hemorrhages accounted for 78.6 % (n=14). Isolated intracranial hypertension was detected in 32.1% (n=9), Visual loss in 10.7 (n =3), recurrent CVST and arterio-venous fistulas in 7.1% (n=2) each. All patients received anticoagulation. Majority (96.4%,n=27) recovered. During follow up magnetic resonance scanning, partial recanalization of sinuses was evident on 21.4%(n=6).

Discussion

Sri Lankan Profile of CVST is mostly similar to regional and international studies, although had high-rate local infections and hypercoagulable state. Pregnancy was less in number. Increased frequency of Isolated intracranial hypertension was detected. Comparatively, long-term visual complications were high. Majority had good outcome from CVST.

Stroke

Baicalin prevents cerebral ischemia-induced neurobehavioral disorders and brain damage

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Cerebral ischemia is known that causes neurological disorder, neuronal cell death, and permanent disability. Baicalin has antioxidant and anti-apoptotic properties. The aim of this study was to investigate the neuroprotective effect of baicalin in animal models of stroke. Middle cerebral artery occlusion (MCAO) was performed to induce focal cerebral ischemia and baicalin (30 mg/kg) or vehicle was injected intraperitoneally just before MCAO surgery. Neurological behavior tests including neurobehavioral scores, corner test, adhesive removal test, and vibrissae- evoked forelimb placing test were performed 24 h after MCAO. Brain edema and infarct volume were measured. To investigate the antioxidant effect of baicalin, reactive oxygen species (ROS) and lipid peroxidation (LPO) levels were measured. Hematoxylin and eosin staining and terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL) histochemical staining were performed. There were significant neurobehavioral defects in MCAO-treated animals. However, in the presence of baicalin, neurobehavioral defects due to MCAO surgery were significantly attenuated. MCAO damage causes severe cerebral edema and increases infarct volume, and baicalin treatment alleviates these changes caused by MCAO. The cerebral cortex of MCAO animals showed histopathological changes with condensed nuclei and expanded cytoplasm and increased TUNEL positive responses. However, administration of baicalin attenuated histological lesions caused by MCAO. In addition, baicalin treatment alleviated MCAO-induced increases in ROS and LPO levels. We showed that MCAO damage caused severe neurobehavioral impairment and brain tissue damage, and baicalin exerted neuroprotective effects by regulating apoptosis and oxidative stress. Therefore, these results suggest that baicalin acts as a neuroprotective agent in stroke animal models.

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FUNCTIONAL OUTCOMES OF ISCHEMIC STROKE IN PATIENTS TREATED WITH MECHANICAL THROMBECTOMY IN GRODNO, BELARUS

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Background: Mechanical thrombectomy (MTE) for large vessel occlusion in ischemic stroke has proven to be effective in large clinical trials.

Objective: To establish the functional outcomes of ischemic stroke in patients treated with MTE in the clinical routine.

Methods: The subjects of the study were 30 ischemic stroke patients treated with MTE in 2021–2022 at the Grodno University Hospital. The primary endpoint was the modified Rankin Scale (mRS) score 3 months after stroke onset.

Results: The median age of patients was 64 years (interquartile range (IQR) 59–69) and the median NIHSS score at admission was 16 (IQR 12–19). 17 patients (57%) had occlusion of the M1 segment of the middle cerebral artery, 6 patients (20%) had occlusion of the M2 segment, and 7 patients (23%) had occlusion of the internal carotid artery. In 14 patients (47%), thrombolysis was performed before thrombectomy. After MTE, 20 patients (67%) had level 2b/3 on the mTICI scale. The median NIH score at 24 hours decreased to 14 (IQR 10–18). Within 7 days from the onset of stroke, the median NIH score decreased to 12.5 (IQR 6–18). 27% of patients (8/30) 3 months after the onset of stroke were functionally independent in daily life (mRS 0–2), 43% (13/30) had signs of disability (mRS 3–5). The 90-day mortality rate was 30% (9/30).

Conclusions: Functional outcome was less favorable and higher mortality rates were observed than reported by authors of large randomized trials, likely due to less stringent inclusion criteria.

Stroke

PROSPECTIVE AND RETROSPECTIVE STUDY OF TENECTEPLASE AT SINGLE TERTIARY CENTER IN WESTERN INDIA

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Ischemic stroke is a brain attack caused by a sudden interruption in the blood supply of the brain.

Approximately two million brain cells destroy every minute during a stroke. This increases the risk of brain damage, disability and death.

In India there are 145-154 strokes per 100,000 population yearly. About 185,000 strokes occur every year. One stroke occurs every 40 seconds. Stroke is the fourth leading cause of death and one stroke death occurs every 4 minutes.

Thrombolytic treatment is the most promising treatment for acute ischemic stroke. Initiation of treatment within the window period 4.5 hrs. with a clot dissolving drug restores the normal blood flow. The drug works by splitting plasminogen into plasmin leading to fibrin degradation.

Tenecteplase has more fibrin specificity and a longer half-life. It is much cheaper than Alteplase and very easy to administer. This study shows the efficacy, safety and cost effectiveness in a country like India. There are very few studies conducted in India showing the safety and efficacy of Tenecteplase (TNK).

We prospectively and retrospectively studied the efficacy, symptom resolution and safety outcomes of TNK in 100 adult patients with acute ischemic stroke. Patients coming in the window period (4.5 hours) or wake up stroke with Flair Diffusion Mismatch on MRI were studied. The efficacy outcome measures included improvement in NIHSS score, Modified Rankin score and GCS score at 24hr, on discharge and at 90 days. In our study we also analyzed post thrombolysis intracranial hemorrhage (ICH), symptomatic ICH, morbidity and mortality within 90-days.

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Stroke

Charles Bonnet Syndrome as Sequelae of Occipital Lobe Infarct With Hemorrhagic Conversion: A Case Report

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Charles Bonnet syndrome occurs in the setting of visual impairment with subsequent complex and repetitive visual hallucinations confined in the area of visual loss, with intact cognition and insight. It has been described as a sequelae of ischemic stroke affecting the visual pathway. We report a case of a male presenting with right homonymous hemianopsia secondary to acute left occipital lobe infarct of cardioembolic etiology. He then developed visual hallucinations on the side of the visual loss. MRI showed hemorrhagic conversion of the occipital lobe infarct. Electroencephalogram showed focal and intermittent slowing of the anterior temporal and frontal region. Charles Bonnet syndrome may signify the worsening or progression of a structural lesion affecting the visual pathway, such as hemorrhagic conversion, and warrants prompt and thorough evaluation. Understanding these conditions is crucial for healthcare professionals and caregivers to provide effective support and interventions for those affected.

Stroke

Muscle Measures of Acute Deconditioning after Stroke

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Background and aims: Stroke-related sarcopaenia is a recognised complication of stroke that contributes to poor prognosis. Estimates suggest over a third of stroke survivors are sarcopaenic at 6 months, however, little existing data inform us how quickly such changes to muscle occur.

Methods: This single-centre, longitudinal observational study recruited individuals admitted within the first week of stroke (Sheffield, UK). Socio-demographic and clinical details were recorded, alongside weekly assessment of mid-femoral circumference (MFC), mid-humeral circumference (MHC), and bioelectrical impedance analysis (BIA). Appendicular skeletal muscle mass (ASM) was estimated from validated formulae (European Working Group on Sarcopaenia in Older People) and muscle strength using unaffected handgrip strength (HGS, Kg). Weekly assessments continued until discharge from hospital. Wilcoxon Signed Rank tests and one-way ANOVA were then used to investigate timings and significance of these changes accordingly.

Results: 30 participants were enrolled, mean (SD) age 72.7 (11.5) years, 59% female, mean (SD) NIHSS 9.5 (6.0), average length of inpatient stay 28.2 days. Statistically significant reductions in affected and non-affected limb MFC (-1.03 cm, $p=0.039$; -1.14cm, $p=0.003$ respectively), affected limb MHC (-0.81cm, $p=0.021$) and ASM (-0.7kg, $p=0.028$) were observed, while non-affected MHC and HGS were unaffected. Within the first 2 weeks non-affected MFC reduced by 2.1% ($p=0.012$) and ASM 6.0% ($p=0.277$).

Conclusions: Significant changes to muscle mass can be detected within the first 2 weeks of stroke, suggesting physiological muscle changes occur before this time. Potential interventions mitigating muscle loss may need to be initiated in the hyper-acute period after stroke in order to be effective.

Stroke

ELEVATED NR2AB NMDA RECEPTOR LEVELS IN PATIENTS WITH CHRONIC CEREBRAL ISCHEMIA MAY BE A PREDICTOR OF CEREBRAL VASCULAR ACCIDENT

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Introduction: It is known that the detection of NMDA receptor NR2-antibodies (NR2ab) in the blood of stroke patients is highly sensitive to ischemic damage than to hemorrhagic. Arterial hypertension (HP) is a major risk factor for stroke and also leads to cerebral white matter damage long before cerebral infarction. In this study, we aimed to evaluate the level of NR2ab in patients with chronic cerebral ischemia (CCI) and HP.

Materials and Methods: The study included 52 patients with CCI and HP who had never previously suffered an acute ischemic stroke (AIS) in their lives. Exclusion criteria: no history of ischemic or hemorrhagic stroke, any neurodegenerative, neuroinflammatory, and psychiatric diseases. The study participants were observed by a neurologist, underwent baseline examinations according to the protocol and brain MRI (1.5 Tesla), where brain matter lesions were verified on the Fazekas scale of grade 2. Patients underwent routine venous blood sampling and serum NR2ab levels were determined using the NR2AT-ELISA Human Kit (DRD Biotech).

Results: The mean NR2Ab values show 1.42ng/ml (range, 0.51-3.64, 95% CI: 1.2-1.6), a mean age of 55.71±1,642 years (95% CI: 52.41-59.01). Patients, who suffered more severe CCI symptoms and their combinations, had the higher level of NR2Ab. Neurological examinations revealed memory problems, imbalance while walking, difficulties performing two or more tasks simultaneously, mood swings, and depression in such patients (the HADS and the MOCA scales were used). Three patients showed the highest NR2ab levels: 2.9, 2.98, and 3.64 ng/ml, and during 1-2 days they developed a transient ischemic attack.

Conclusion: Elevated NR2ab levels in patients with CCI (Fazekas grade 2) + HP may be considered as a biomarker predicting vascular catastrophe, further studies are required.

Stroke

Cilastazole in secondary prevention of recurrent stroke

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Introduction

Recurrent stroke has major clinical and social morbidities. Search for a better treatment option to mitigate the risk of stroke recurrence with least possible adverse effects has encouraged many studies to assess the benefits of various anti-platelet therapies either alone or in combination. Aspirin and clopidogrel or ticagrelor dual therapy has been proven to be beneficial in preventing stroke recurrence but increases the risk of major bleeding complications beyond a month. Cilastazole a phosphodiesterase (PDE 3) inhibitor showed promising effects in peripheral arterial diseases, with minimal adverse events. This is a case series of recurrent non-cardioembolic strokes, who were initiated on Cilastazole based dual antiplatelet therapy, to compare the long-term stroke outcome and tolerance.

Methodology:

Data of patients visiting neurology OPD for regular follow up with prior history of recurrent non-cardioembolic stroke was collected. Those with recurrence due to medication non-compliance and uncontrolled vascular risk factors or concurrent cardiac events were excluded. Those patients who were treated with a dual anti-platelet therapy with Cilastazole and either aspirin or clopidogrel were analyzed. These patients were followed up for at least one year.

Results:

12 patients with mean age of 63.3years (50-72yrs) were started on Cilastazole after recurrence on initial antiplatelet therapy. They were followed up over a mean of 3.9years (1-3 yrs). One had recurrence while on CLZ(8%). None reported any events of major bleeding or systemic complications requiring to stop or alter the medication.

Conclusion:

Cilastazole appears promising in prevention of recurrent stroke , with least risk of intracranial bleed . Further studies are needed to confirm the results.