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WCN17-1688

SHIFT 7 - STROKE

**Feedforward neural network based classification cans possibly a novel tool to evaluate the neuronal condition in rat model**

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**Background:** Ischemic stroke is one of the enigmatic neurological disorders with least understood injuries. EEG has been traditionally used to detect residual neural dysfunctions after cerebral ischemia but have several shortcomings yielding controversial and inconsistent results.

**Objective:** The aim of the neural network was that it should be possible to train the network on a sample dataset and then identify a dataset from the training sample when its dataset is fed to the network. The neural network was set up in MATLAB 2010a. This study involves neural network basis analysis of electroencephalographic signals that can provide clear information regarding the long lasting neural impairment in the subjects suffered from ischemic injury.

**Patients and Methods/Material and Methods:** We have collected the EEG time series data of the fronto-parietal, occipital and temporal regions of three rat groups i.e. control, induced stroke and drug treated the rat brain. A feedforward neural network is a biologically inspired classification algorithm. It consists of a (possibly large) number of simple neuron-like processing units, organized in layers.

**Results:** An input consisting of 4 neurons was followed by a hidden layer of 20, 000 neurons and then an output layer consisting of one neuron. Every unit in a layer is connected with all the units in the previous layer.

**Conclusion:** This is the first ever finding which advocates the role of Piroxicam in neuronal firing apart from its other neuroprotective roles. Thus, the possibility of modulation of neuronal firing can act as a therapeutic strategy to prevent neuronal dysfunctions in ischemia.

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WCN17-2376

SHIFT 7 - STROKE

**The relationship between the cardiac enzymes elevation and stroke**

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**Background:** Stroke is one of the causes of CK, CK-MB and troponin elevation except ischemic heart disease which creates a conflict for clinicians in emergency services.

**Objective:** This study aims to help solving this dilemma by investigating the relationship between CK, CK-MB, troponin values in patients with acute stroke and control group.

**Patients and Methods/Material and Methods:** Total 89 cases were prospectively examined in which there was 62 patients admitted with acute stroke diagnosis and 27 patients hospitalized with non-stroke reasons as control group. In all cases; systemic and neurological examination, routine laboratory tests, computed tomography (CT) or diffusion magnetic resonance imaging (MRI), a standard 12-channel ECG and transthoracic echocardiography (TTE), bilateral carotid and vertebral artery doppler ultrasonography (RDUSG) were made. For each case, in the first 24 hours, 3rd day and 5th day of stroke attack; CK, CK-MB and Troponin-I levels were investigated.

**Results:** In all patients; 1st, 3rd, 5th days cardiac enzymes (CK, CK-MB and Troponin-I) values were significantly higher than that of control group ( $p < 0.001$ ). For the patients with hemorrhagic stroke 1st day CK values and peak CK values were significantly higher than that of patients with ischemic stroke ( $p = 0,013$   $p = 0,027$ ).

**Conclusion:** The conclusion of this study showed that patients with stroke can have high values of CK, CK-MB and troponin-I in the acute phase. We think that high levels of CK, CK-MB and troponin in acute stroke might be a marker of cardiac damage, due to stroke. New studies with a larger group of patient series can be supportive for clarifying this issue.

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SHIFT 7 - STROKE

**Unusual presentation of basilar artery thrombosis**

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**Background:** 51 year old man presented to emergency department with headache, neck pain, confusion, vomiting and a week history of viral illness. His past medical history included hypertension, type 2 diabetes. He was a chronic smoker.

**Objective:** Initial differential diagnosis included meningitis, encephalitis and seizures secondary to it.

**Patients and Methods/Material and Methods:** On examination he had a temperature of 39.5 degrees, capillary blood glucose 17.1, blood pressure 109/45mmHg, Glasgow coma scale was 8, noted to be in status epilepticus. He was commenced on antibiotics, antivirals, antiepileptics, intubated and transferred to intensive care unit (ITU) for further management.

**Results:** Blood results showed raised white cell count, neutrophilia with a normal CRP. CT head scan revealed infarcts in right occipital lobe and left cerebellar infarct. On ITU he was noted to have fixed dilated right pupil. The following day his inflammatory markers normalised. A repeat CT head scan showed new infarct in the left occipital lobe. Stroke team was involved and scans reviewed again which showed possibility of basilar artery thrombus. A repeat CT head and CT angiogram revealed occlusion within the mid and distal basilar artery. It was evident at this point that the prognosis was poor.

**Conclusion:** We need to be aware of the atypical presentation of the basilar artery thrombosis. In this case the history on admission was thought to be due to meningo-encephalitis. Delay in making the diagnosis could be fatal.

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WCN17-0345

SHIFT 7 - STROKE

**Assessment of glutamate receptors antibodies in spinal cord ischemia**

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**Background:** The diagnosis of spinal cord (SC) ischemia remains suboptimal with neuroimaging as the major differential approach.

**Objective:** To measure antibodies (Abs) to glutamate receptors (kainate [KAR], propionic acid [AMPA], and NR2 subtype of N-methyl-D-aspartate [NMDAR]) in conjunction with magnetic resonance imaging (MRI) to determine if SC ischemia could be detected using a blood test.

**Patients and Methods/Material and Methods:** We enrolled 125 patients (median age 55 y.o.) during 2015-2017. All patients underwent neurological examinations, MRI, and blood withdrawals, and were subdivided into 2 groups: controls (healthy volunteers, n=20, radiculopathy, n=32) and those with ischemia (n=73). The latter included patients who suffered from acute ischemic stroke (IS, n=30) and SC ischemia due to SC infarction (n=27) and SC injury (n=16). Abs to glutamate receptors measured by ELISA technique.

**Results:** The Abs values were within the normal range ( $p < 0.05$ ) in control groups for KAR, AMPAR (1.5 ng/ml), and NR2 (2.0 ng/ml). KAR Abs in patients with SC ischemia were increased compared to controls ( $p < 0.02$ ) and IS ( $p < 0.003$ ). KAR Abs were higher both in SC injury (1.5-3.05 ng/ml) and in SC infarction (1.5-3.2 ng/ml).

NR2 Abs were found to be elevated in patients with IS ( $p = 0.02$ ) and SC ischemia ( $p = 0.002$ ), confirming the primary vascular cause of the disease, while AMPAR Abs levels were elevated principally in patients with SC injury ( $p = 0.02$ ).

**Conclusion:** According to functional and MRI assessment patients with elevated NR2 Abs had mild neurological symptoms and gray matter lesions while white matter impairments associated with more severe neurological outcomes accompanied with abnormal levels of AMPAR and/or KAR Abs.

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WCN17-0910

SHIFT 7 - STROKE

**A study on the clinical profile, risk factor, management, and outcome of ischemic stroke in tertiary hospital**

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**Background:** Stroke is the leading cause of death in Indonesia.

**Objective:** We performed a study based on clinical analysis at tertiary hospital, to determine stroke profile.

**Patients and Methods/Material and Methods**

**Methods:** A retrospective study, data was collected from medical record stroke patients who were admitted in Department of Neurology of Sardjito Hospital Yogyakarta, between 2014-2015. We examined demographic data, risk factor, length of hospital stay, management and outcome at discharge. Patients with intracerebral hemorrhage and subarachnoid were excluded

**Results:** There were a total of 493 patients, by mean age of 62 years and 60.4% male, only 8.1% under 45 years. Hypertension were the most common risk factors for 79.3%, followed by dyslipidemia (35%), diabetes (32%), congestive heart failure (12%) and atrial fibrillation (8%) of all patients. The mean length of stay was  $\pm 7.03$  days. Patients taking aspirin (43.6%), clopidogrel (49%), double antiplatelet (3.2%), and anticoagulant (4.2%). The mortality 10.1% during the treatment.

**Conclusion:** This study indicates the condition in tertiary hospital both clinical profile and risk factor are similar to the condition

worldwide. However the increasing mortality were due to complication during treatment.

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WCN17-2029

SHIFT 7 - STROKE

**Bilateral precentral gyrus infarction in a patient with patent foramen ovale: A case report**

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**Background:** We report the case of a 57-year-old woman who developed severe tetraparesis, without any associated encephalic sign consistent with the diagnosis of spinal cord injury. Brain CT scans were first performed and showed no abnormality. However, the cerebral MRI revealed bilateral infarction in the precentral gyrus. In addition, patent foramen ovale was later diagnosed using transesophageal echocardiography. Doppler ultrasound of the Carotid and Vertebral arteries, cerebral angiography and cerebrospinal fluid exam were all normal.

**Objective:** To describe a case of acute tetraparesis due bilateral precentral gyrus infarction.

To emphasize the importance of the diagnosis of patent foramen ovale, reinforcing a probable cardioembolic etiology in this patient.

To review the medical literature on patent foramen ovale and bilateral strokes.

**Patients and Methods/Material and Methods:** We obtained the patient's written consent to consult her medical charts.

We performed a systematic literature search in BIREME, UP TO DATE and PUBMED, identifying studies and case reports on "Bilateral precentral gyrus infarcts in patients with patent foramen ovale" using the keywords: bilateral cerebral ischemia, acute tetraparesis and patent foramen ovale, up to April 2017.

**Results:** There were two articles describing bilateral cerebral infarction causing acute tetraparesis, both refer to cardioembolism as the cause. Patent foramen ovale is an important risk factor for cryptogenic stroke according to most of the authors in our research.

**Conclusion:** Bilateral precentral gyrus infarction is an unusual presentation of acute tetraparesis; Once it is properly diagnosed a further evaluation to define its cause and a multidisciplinary team are necessary; To our knowledge, this is the first written report about this condition.

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SHIFT 7 - STROKE

**A low IL-6/IL-10 blood level ratio is identified as a predictor of infection in acute ischemic stroke patients**

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**Background:** Infection after stroke is an increasingly common problem, with almost several patients acquire the infection as an