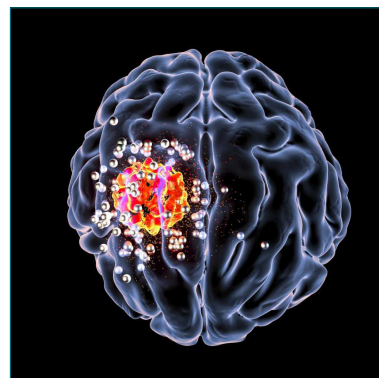
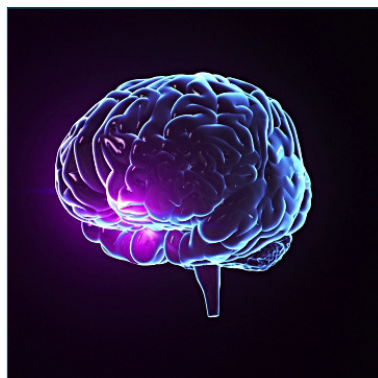
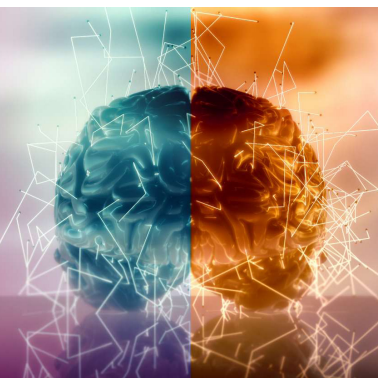
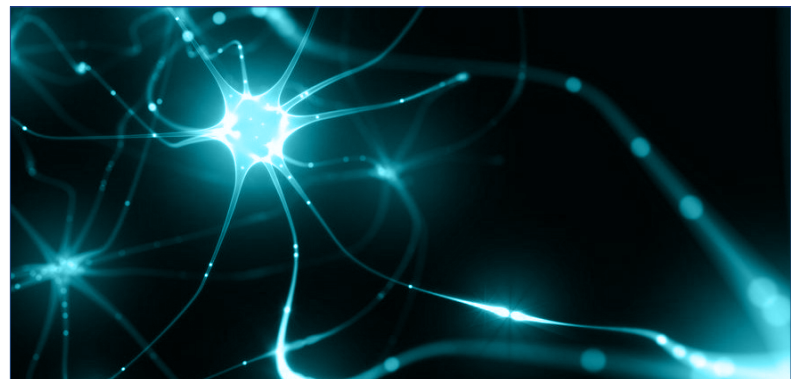
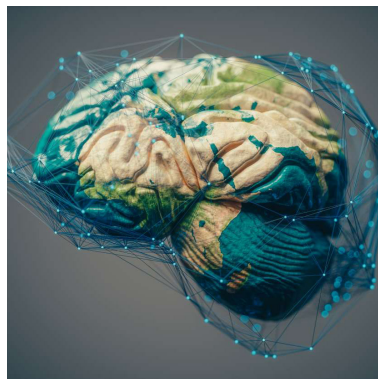

Poster Presentation

Neurology 2018



18th International Conference on
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August 23-24, 2018 | Paris, France

Parietal-thalamic dysconnectivity during sustained attention processing in young adults with Traumatic Brain Injury

Xiaobo Li and Ziyang Wu

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Traumatic brain injury (TBI) is a major public health problem with potentially serious long-term neurobehavioral sequelae. Attention deficits occur in approximately 15-20% of TBI survivors and are the most common persistent cognitive impairments post TBI. The consensus regarding appropriate evaluation of attention deficits in adults with TBI is rather limited due to lack of understanding of the neurobiological substrate associated with this syndrome.

In this study, functional magnetic resonance imaging data during a visual sustained attention task were obtained from 14 young adults who had history of one or multiple diffuse axonal TBIs which were clinically confirmed at least 6 months prior the study and 15 demographically matched normal controls. Task responsive brain activation map was constructed for each participant using FEAT/FSL (www.fmrib.ox.ac.uk/fsl). Between-group comparisons of whole brain voxel-based functional activations were conducted using unpaired two-sample t-test. Relative to controls, subjects with TBI showed decreased activations in frontal and parietal cortices and increased activations in bilateral thalami (Figure 1A). Based on these results, four regions of interest (ROIs) from the right middle frontal cortex, left inferior parietal cortex and bilateral thalami were located. The average time series inside each ROI was calculated. Functional connectivity between each pair of the ROIs was examined by calculating the Pearson's correlation coefficient of the average time series of the two ROIs. Between-

group comparisons of the functional connectivity measures were carried out using unpaired two-sample t-test. Multiple comparisons were corrected using the FDR at $\alpha = 0.05$. Relative to controls, subjects with TBI showed significantly decreased functional connectivity between the left inferior parietal cortex and right thalamus.

Parietal cortex and thalamus are key components in attention and cognitive processing pathways. The results of decreased functional activations in parietal region, increased functional activations in thalamic area and reduced interactions between these two areas during visual attention processing in patients with TBI, thus suggest that functional alterations in parietal cortex and thalamus may significantly contribute to TBI induced attention deficits. Further study can focus on investigating associations between brain imaging and attention-related behavioral measures in TBI patients in a larger study sample.

Speaker Biography

Xiaobo Li is an Associate Professor and Director of the Computational Neuroanatomy and Neuroinformatics lab (CNN lab) in the Department of Biomedical Engineering at New Jersey Institute of Technology (NJIT). Dr. Li received her Ph.D. in 2004 from the University of Birmingham, UK, on geometrical modeling in digitized data. She has extensive research experience in developing and translating mathematical techniques to quantitatively evaluate the structural and functional organization in the human brain using structural MRI/fMRI/DTI data, and extensive clinical application experience in brain development and disorders such as Attention Deficit/Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), schizophrenia, etc.

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Notes:

Chronic stress and moderate exercise prompt widespread common activation and limited differential activation in specific brain regions

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Chronic stress in rodents produces depressive behaviors, whereas moderate exercise counteracts stress-induced depressive behaviors. Stress and exercise appear to produce such opposing effects by changing the neural activity of specific brain regions. However, the detailed mechanisms through which the two different types of stimuli regulate brain function in opposite directions are not clearly understood. In the present study, we attempted to explore the neuroanatomical substrates mediating stress-induced depressive behavioral changes and anti-depressant effects of exercise by examining stimulus-dependent c-Fos induction in the brains of mice that were exposed to repeated stress or exercise in a scheduled manner. Systematic and integrated analyses of c-Fos expression profiles indicated that various brain areas, including the prelimbic cortex (PrL), parietal cortex (PaC), lateral septal nucleus (LS), and paraventricular nuclei of hypothalamus (PVN) were commonly and strongly activated by both stress and exercise, while the habenula (HB) and hippocampus (HP) were identified as being

preferentially activated by stress and exercise, respectively. Exercise-dependent c-Fos expression in all regions examined in the brain occurred in both glutamatergic and GABAergic neurons. These results suggest that chronic stress and moderate exercise produce counteractive effects on mood behaviors, along with prompting widespread common activation and limited differential activation in specific brain regions.

Speaker Biography

Tae-Kyung Kim graduated from Korea University in South Korea with a bachelor's degree in biology. During graduate study at Rutgers University (Robert Wood Johnson Medical School), he studied the molecular mechanisms and regulation of eukaryotic gene expression under the supervision of Dr. Danny Reinberg (HHMI, currently at NYU). After obtaining a PhD degree in Biochemistry, he continued his research career in the laboratory of Dr. Michael Greenberg (Harvard Medical School) as a postdoctoral fellow, studying how neuronal activity controls gene expression in neurons to mediate synapse remodeling and plasticity. He joined the faculty in the Department of Neuroscience at UT Southwestern in 2010.

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Notes:

Neurology and Neurological Disorders

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Coenzyme Q10 supplementation reduces oxidative stress and decreases antioxidant enzyme activity in children with Autism Spectrum disorders

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Antioxidants and oxidative stress can participate in pathobiochemical mechanisms of autism spectrum disorders (ASDs). The aim was to identify the effects of early CoQ10 supplementation on oxidative stress in children with ASDs. Ninety children with ASDs were included in this study, based on DSM-IV criteria and using Childhood Autism Rating Scale (CARS) scores. Concentrations of CoQ10, MDA, total antioxidant status (TAS) assay, and antioxidant enzymes (superoxide dismutase or SOD and glutathione peroxidase or GPx) activity were determined in serum before and after 100 days of supportive therapy with CoQ10 at daily doses of 30 and 60 mg. Data on children's behavior were collected from parents and babysitters. CoQ10 supportive therapy was determined after three months with daily dose 2 × 30 mg improved oxidative stress in the children with ASDs. A relation was seen between

serum MDA ($r^2 = 0.668$) and TAS ($r^2 = 0.007$), and antioxidant enzymes (SOD [$r^2 = 0.01$] and GPx [$r^2 = 0.001$]) activity and CARS score. Based on the results, high doses of CoQ10 can improve gastrointestinal problems ($P = 0.004$) and sleep disorders ($P = 0.005$) in children with ASDs with an increase in the CoQ10 of the serum. We concluded that the serum concentration of CoQ10 and oxidative stress could be used as relevant biomarkers in helping the improvement of ASDs.

Speaker Biography

Elham Mousavinejad has completed her MSc in the Department of Biochemistry, School of Medical Sciences, Ahvaz Jundishapur University of Medical Sciences, in 2016, and BSc Degree in Community Nutrition, School of Nutritional Sciences and Dietetics, Jundishapur University of Medical Sciences, Ahvaz, Iran in 2006. Her research area involved Nutritional Neuroscience and various nutritional deficiencies described in children with ASDs.

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Notes:

Neurology and Neurological Disorders

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The role of Hypoxia in periventricular white matter degeneration

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The deep and periventricular white matter is preferentially affected in several neurological disorders, including cerebral small vessel disease (SVD) and multiple sclerosis (MS), suggesting that common pathogenic mechanisms may be involved in this injury. Here we consider the potential pathogenic role of tissue hypoxia in lesion development, arising partly from the vascular anatomy of the affected white matter. Specifically, these regions are supplied by a sparse vasculature fed by long, narrow end arteries/arterioles that are vulnerable to oxygen desaturation if perfusion is reduced (as in SVD, MS and diabetes) or if the surrounding tissue is hypoxic (as in MS, at least). The oxygen crisis is exacerbated by a local preponderance of veins, as these can become highly desaturated 'sinks' for oxygen that deplete it from surrounding tissues. Additional hemodynamic deficiencies, including sluggish flow and impaired vasomotor reactivity and vessel compliance, further exacerbate oxygen insufficiency. The cells most vulnerable to hypoxic damage, including oligodendrocytes, die first, resulting in demyelination. Indeed, in preclinical models, demyelination is prevented if

adequate oxygenation is maintained by raising inspired oxygen concentrations. In agreement with this interpretation, there is a predilection of lesions for the anterior and occipital horns of the lateral ventricles, namely regions located at arterial watersheds, or border zones, known to be especially susceptible to hypoperfusion and hypoxia. Finally, mitochondrial dysfunction due to genetic causes, as occurs in leukodystrophies or due to free radical damage, as occurs in MS, will compound any energy insufficiency resulting from hypoxia. Viewing lesion formation from the standpoint of tissue oxygenation not only reveals that lesion distribution is partly predictable but may also inform new therapeutic strategies.

Speaker Biography

Santiago Martinez Sosa is a medical student at University College London, from where he also received his bachelor's in Neuroscience (Hons). His interests include hippocampal physiology, neuroinflammation, and neurodegenerative disease. He is the UCL Medical Society coordinator for the Neurology society, which serves to facilitate student involvement in all branches of the specialty. This is his first publication.

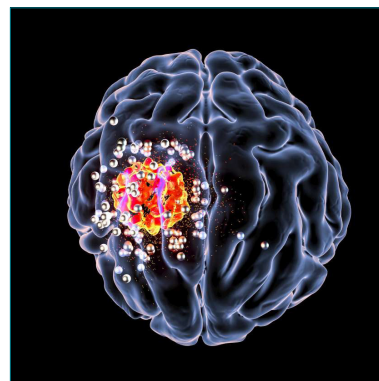
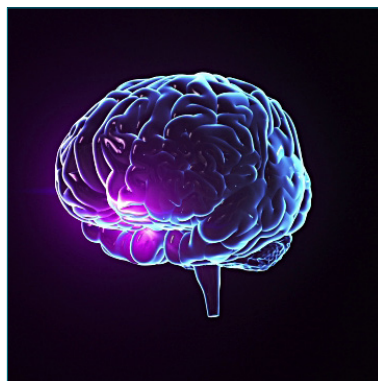
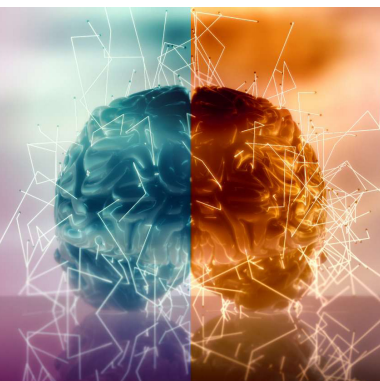
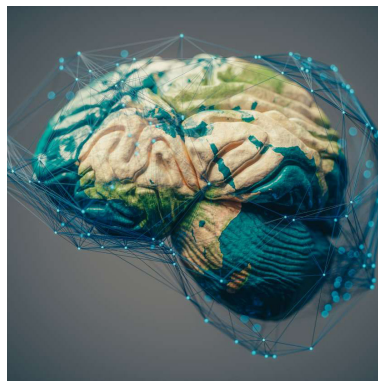
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Notes:

Accepted Abstracts

Neurology 2018



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An Iatrogenic Lhermitte's sign as a presenting feature of transverse myelitis: "A rare case of prolong full bloom disease course of NMO spectrum disorders (NMOSD) under PRF (Pulsed Radiofrequency) treatment

Chao-nan Yang

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A case of 53-year-old female patient with insidiously feet numbness initially, with progressive ascending numbness and mild to moderate weakness of lower limbs reaching maximum impairment for 2 months. Initial examination found decreased DTR on bilateral ankle reflex without weakness. It takes about 2 months to the nadir, very slow progressive ascending weakness and paresthesia.

She takes rehabilitation for 2 months. She received PRF (Pulsed Radiofrequency) therapy 1 month later after symptom onset. Under the impression of mild L4/L5 HIVD and radiculopathy by neurosurgery doctor. With 42°C electrode stimulation in bilateral L5 DRG (dorsal root ganglion). She developed sudden whole back area electric shock-like sensation with radiation to 4 limbs soon after PRF stimulation and lasting the symptom when movement the back or neck after that for 3-4 weeks. And slowly relieved later.

DTR was increased 2 months later when she came to our neurologic clinic and she walk by stick.

The spinal cord MRI revealed along, extended spinal cord lesion from T9-T11. The VEP (Visual evoked potential) showed prolonged latencies bilaterally without any eye symptom. Further Brain MRI showed lesion at right middle cerebellar peduncular. Lab data was no remarkable. CSF study showed no active inflammation or infection. IgG index: 0.54, blood test for AQP4 Ab showed positive.

Lhermitte's sign (LS) is one of the sensory symptoms of the spinal cord that is frequent seen in NMOSD. But was rare under Pulsed Radiofrequency situation. Physician should be aware the disease course and should always put spinal cord lesion into consideration before invasive procedure.

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Awake Craniotomy the future of Neurosurgery

Debabrata Mukhopadhyay, Anil Gurnani and Asha Bakshi
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Introduction: Surgical treatment of intrinsic brain tumour in the eloquent areas like speech or motor is always a risk factor for major deficit. Awake craniotomy is a useful surgical approach to identify and preserve functional areas in brain and maximizes tumour removal. The other advantages are very short hospital stay, bypassing general anaesthesia, therefore lesser risks and cost effective. These advantages of awake craniotomy is encouraging to operate on all intraxial supratentorial tumours irrespective of eloquent areas in the brain.

Methods: Retrospective analysis was done with selected patients admitted from July 2011 to February 2018 for awake craniotomy. Patient presentations, co morbid conditions, tumour locations and the histopathological features were documented. The presentation was seizure and/ progressive neurological deficit. Long acting local anaesthesia was used for scalp block. Anaesthesia was performed in a state of sleep-awake-sleep pattern, keeping patients fully awake during tumour removal. The brain eloquent functions were closely monitored whenever tumours were in eloquent areas of brain clinically during surgery. However, unlike routine, brain mapping was not performed due to lack of resources.

Results: A total of 55 patients were included in the study of age between 24-55 years (mean 36). 31 (56.36 %) were females and 24(43.63 %) males.31(56.36%) patients presented with predominantly seizure disorders and rest with progressive neurological deficit. 47 (85.45%) patients were discharged on second post-operative day. Complications was encountered in 6 (10.90%) patients who developed brain swelling intraoperatively and 8(14.54 %) deteriorated neurologically in the immediate post-operative period however managed successfully. Patients with prior neurological deficit only deteriorated. No complications were encountered who was neurologically intact. 8(14.28%) patients require ICU/ HDU care for different reasons. There was no mortality during the hospital stay. Histopathology revealed 39 (70.90 %) patients low grade glioma, 13 (23.63%) high grade glioma and 3 (5.45%) metastases.

Conclusion: Awake Craniotomy is a safe surgical management for intrinsic brain tumours irrespective of eloquent area of brain although surgery and anaesthesia is a challenge. It offers great advantage towards disease outcome.

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Neurology and Neurological Disorders

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Effect of GAA expansion on Iron Copper metabolism and cell free nucleic acids (cfNA) levels in plasma of Friedreich's ataxia (FRDA) patients and its co relation with the FARS

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Friedreich's ataxia is characterized by the high iron and copper deposits in the brain and cardiac cells which triggers the cellular and axonal death causing increased plasma levels of the circulating nucleic acids in the patients. A quantitative study was done and the plasma levels of cell free Nucleic acids, and trace elements iron and copper were assessed and correlated with the GAA repeat numbers and frataxin levels in patients. 25 FRDA patients and 25 controls from Northern India were included. Iron and Copper level assessment were done by Nitro PAPS and Dibrom PAESA method, respectively. Fluorescent dye-based Qubit 3.0 Fluorometer was used for cfNAs quantifications. Iron (Fe²⁺) and Copper (Cu²⁺) levels were found to be significantly

decreased in patients (Cu; mean \pm SD(range) $8\pm 5(2-16)$; Fe mean \pm SD(range) $5\pm 3(15-13)$ compared to controls (Cu; mean \pm SD(range) $13\pm 8(12-29)$; Fe mean \pm SD(range) $16\pm 7(4-26)$ whereas free cfDNA levels were found to be higher in patients (mean \pm SD(range) $73\pm 35(2-16)$) compared to controls (mean \pm SD(range) $34\pm 0.3(9-6)$). There was a significant positive correlation between GAA repeat numbers and cfDNA & frataxin level and Fe and Cu levels. Significant inverse correlation was established between GAA repeat numbers and Fe and Cu levels & frataxin and cfNA.

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A systematic review of antiepileptic drug randomised control trials over 20 years

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Epilepsy is a neurological condition which manifests itself by causing alterations in the brain and this leads to seizures. Seizures can affect people in many ways and therefore anti-epileptic drug management is a key part to these people's lives. The guidelines on the use of antiepileptic drugs are derived from randomised control trials undertaken on these medications. The aim of the paper was to assess and evaluate antiepileptic drug RCTs over the past 20 years. A database search was conducted and from this, data was extracted via double data extraction. A total of 148 trials from the years 1995-2015 were analysed and included in our

systematic review. Papers were scrutinised by identifying types of patients included in trials, types of methods that trials conducted, and the outcomes measured from these. After interpreting results, from the majority of studies it was evident that documentation of clinical trials did not meet the CONSORT guidelines for what information to include in RCTs and therefore more care should be taken when writing trial reports in future as treatment decisions are based on these trials.

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Notes:

Neurology and Neurological Disorders

August 23-24, 2018 | Paris, France

Prediction of progression in individuals with subjective cognitive decline using cortical thinning patterns

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We evaluated the differences of cortical thinning patterns in individuals with SCD those who progressed to mild cognitive impairment (MCI) or AD [pSCD], those who remained stable [sSCD], and healthy normal controls (NC). **Methods:** We retrospectively recruited SCD subjects (14 pSCD, 21 sSCD) and 29 normal controls. Structural 3D-T1 weighted MRI was performed on single 1.5 Tesla scanner. Free surfer software was used to obtain maps of cortical thickness for group comparisons. **Results:** Compared to NC group, the sSCD group showed diffuse cortical atrophy

through bilateral fronto-parieto-temporal area. The pSCD group showed more characteristic cortical atrophy in AD-vulnerable regions including the inferior parieto-temporal, middle temporal area. When the sSCD and pSCD subjects were compared, the former showed cortical thinning in bilateral medial frontal areas and the latter in right inferior temporal and left precentral areas. **Conclusion:** Our study showed that SCD subjects exhibit different cortical thinning patterns depending on their future prognosis.

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Neurology and Neurological Disorders

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Breath holding spells: Clinical history assessment

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Objective: Breath holding spells (BHS) is a common case in children aged 5 months to 6 years, and often misinterpreted with epileptic seizures. We made clinical and epidemiological assessment for BHS. We documented the relation between sex, age, familial history and the episodes nature blue, pale or mixed.

Materials & Methods: It was a cross-sectional study in which a total of 75 children (30 boys, 45 girls) with BHS, admitted to our center (Nour Institute of Pediatric neurology: NIPN), between 2014 and 2016. We took full medical history and did the investigations to eliminate the differential diagnosis.

Results: Most patients were 7-24 month, we noticed parental consanguinity in 87% of cases, and familial history in 56%. The spells were cyanotic 70%. Anger and pain were the more frequent risk factors (64%, 60%). Anemia found in 58% of patient. Half of the patients have socioeconomic problems. Most of them was with a family history (66%).

Conclusion: The study mentioned the types of spells, the risk factors and the important role of anemia.

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Notes:

Cognitive approach to Memristor which is able to associative learning

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Objective: We are at a time when electronic systems are structured in a manner similar to the human brain. The memristor, a neuromorphic circuit designed by Chua in 1971, is a modeling of synaptic learning and associative learning. Neuromorphic circuit elements and memristor can be used in artificial brain formation in the later periods and in the treatment of various lesions, psychiatric and neurological diseases. Scientific publications of memristor related neuroscientists, behavioral scientists, cognitive scientists and psychologists are scarce. The aim of this review is to examine the learning models built on the memristor by cognitive perspective.

Methods: In this study, the learning experiments on the memristor were investigated in the literature and the results were compared.

Results: In conditional learning experiments on the memristor, which is its own memory, the unconditional stimulus and the neutral stimulus represent different types of signals. Before the

learning, the signals which are denoted as neutral stimuli cannot give output from the electronic angle. But just like Pavlov's dog experiment, when the signal representing the unconditioned stimulus was presented before learning, the output is taken. When both stimuli were presented in the order of the Pavlov experiment, the output was taken from the neutral stimulus. And after learning, the output can be taken when the neutral stimulus given alone. In this way, the memristors were able to learn conditionally and to achieve synaptic modeling.

Conclusion: It has been found that learning procedures can be applied to hardware devices other than algorithmic devices. The learning experiments on the memristor successfully support the synaptic learning and Pavlov type conditional learning procedures. In some experiments, however, the conditional responses in the memristor do not decrease over time. This can be described as a pathological learning and may reduce the efficiency of the memristor.

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Basal Ganglionic Lesions in Egyptian children: Radiological findings in correlation with etiology and clinical manifestations

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Background: In childhood, the metabolic activity of the basal ganglia is greater, and they are particularly prone to injury. Damage to the basal ganglia cells may cause problems controlling speech, movement, consciousness, muscle tone, posture and cognition.

Aim of the study: To determine the etiology of basal ganglionic disorders in a sample of Egyptian children.

Methods: A cross sectional observational study was utilized on 34 patients attended at the Pediatric Neuro Outpatient Unit of Neurology department at f Al-Azhar University Hospitals during a period of one year from the beginning of November 2014 to the end of November 2015. A specialized pediatric neurological sheet, Cognitive assessment in children using Stanford-Binet Intelligence Scale and Laboratory investigations were performed. The included patients were classified according to MRI into two groups; ganglionic group that included patients with isolated basal ganglionic lesions (n=23) and para-ganglionic group that included patients with combined ganglionic as well as para-ganglionic lesions (n=11).

Results: The frequency of male patients was slightly higher than the female patients in both groups without significant difference (13 (56.5%) versus 6 (43.5%) and 10 (54.5%) versus 5 (45.5%), in ganglionic and para-ganglionic groups, respectively). acute ischemic stroke was the most frequent cause, which was found in 12 (35.3%) cases, followed by 10 (29.4%) had metabolic and infectious causes, and lastly 2 (5.9%) had toxic causes. The incidence of toxic causes (CO poisoning) was significantly higher among ganglionic group compared to para-ganglionic group (2(8.7%) versus 0(0.0%), respectively). According to brain MRI imaging, bilateral basal ganglion affection was the most frequent lesions among ganglionic group 16 (69.7%). while temporal affection (temporal were 2 (18.2%), temporo-parietal were 2 (18.2%) and temporo-occipital was 1 (9.1%) was the most frequent lesions among para-ganglionic group 5 (45.5%).

Conclusion: Acute ischemic stroke was the most frequent cause of basal ganglionic lesion in a sample of Egyptian children.

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Notes:

Neurology and Neurological Disorders

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Neuronal SphK1 acetylates COX2 and contributes to pathogenesis in a model of Alzheimer's Disease

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Although many reports have revealed the importance of defective microglia-mediated amyloid phagocytosis in Alzheimer's disease (AD), the underlying mechanism remains to be explored. Here we demonstrate that neurons in the brains of patients with AD and AD mice show reduction of sphingosine kinase1 (SphK1), leading to defective microglial phagocytosis and dysfunction of inflammation resolution due to decreased secretion of specialized pro resolving mediators (SPMs). Elevation of SphK1 increased SPMs secretion, especially 15-R-Lipoxin A4, by promoting acetylation of serine residue 565

(S565) of cyclooxygenase2 (COX2) using acetyl-CoA, resulting in improvement of AD-like pathology in APP/PS1 mice. In contrast, conditional SphK1 deficiency in neurons reduced SPMs secretion and abnormal phagocytosis similar to AD. Overall, these results reveal a novel mechanism of SphK1 pathogenesis in AD that leads to defective microglial phagocytosis due to impaired SPMs secretion, and suggests that SphK1 in neurons has acetyl-CoA dependent cytoplasmic acetyltransferase activity towards COX2.

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Neurology and Neurological Disorders

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DiGeorge syndrome presenting with seizures: A case report

Hoda Khatib Masjedi, Samane Noroozi Asl and Ali Rajabpour Sanati
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DiGeorge syndrome was described for the first time in 1968 as a defect affecting structures derived from the third and fourth embryonic pharyngeal arches along with absent parathyroid glands. According to the low incidence of this disease as well as a wide spectrum of symptoms, it is essential to report cases with less prevalent features. In this case report, a child has been introduced with a diagnosis of DiGeorge syndrome presenting with seizures.

The patient was a 27-day-old baby girl due to seizures admitted to hospital Imam Reza (AS), Mashhad, Iran. Hypocalcemia was observed in early clinical trials requested. The patient underwent echocardiography according to holosystolic murmur grade 3/6 auscultation, which showed a patent ductus arteriosus (PDA),

tetralogy of Fallot (TOF), ventricular septal defect (VSD), atrial septal defect (ASD), and pulmonary atresia (PA). No thymus was found on chest x-ray, and evidence of previous conflicts was observed in the heart. Finally, Fluorescent in situ hybridization (FISH) was performed to check out Tuple gene deletion on chromosome 22q11.2, and the diagnosis was confirmed for Disgorge Syndrome.

Although the incidences of neurological symptoms associated with hypocalcemia suggest a wide range of diseases as a differential diagnosis, pediatrics should consider the heart disorders for DiGeorge syndrome through clinical examinations and imaging, if necessary.

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Notes:

Role of mir-185 and SEPT5 Genes in Pathogenesis of Parkinson's disease in animal model

Kambiz Hassanzadeh and Arman Rahimmi
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Backgrounds and aim: The pathophysiology of Parkinson's disease (PD) has been under immense investigations for more than a century. However, there are still many unknown mechanisms toward the disease. Clarifying the molecular mechanisms involved in PD, can assist in developing novel and efficient therapies. Recently, studies showed genes located on the human chromosome location 22q11.2 might be involved in development of PD. Therefore, our research aimed to evaluate the role of two genes located on the chromosomal location (mir-185 and SEPT5) which were the most probable candidates based on our bibliography.

Methods: Male wistar rats were divided in two groups, randomly (n = 8). One group received rotenone injections (1.5 mg/day s.c.) for 45 consecutive days. The other group (control) only received rotenone injection vehicle (sunflower

oil). Behavioral tests including rotarod, rearing and bar tests were performed at baseline and 45th day. Substantia nigra and striatum were extracted from the animals' brain. The expression of mir-185 and SEPT5 genes were measured at mRNA level using syber green real-time PCR technique.

Results: the results of behavioral tests showed significant decrease in performance of rotenone treated group compared to control group (P< 0.05). The level of mir-185 and SEPT5 genes also decreased significantly in substantial nigra of rotenone treated group compared to control group (P< 0.05). However, there was no significant difference between two groups in expression of mir-185 and SEPT5 genes (P< 0.05).

Conclusion: the results of current study introduce mir-185 and SEPT5 genes as novel genes participating in pathophysiology of PD.

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Mass media health promotion interventions for increasing stroke awareness in young people: A systematic review of the literature

Kelly Flowers

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Background: One of the greatest public health challenges is developing mass media health behavior change programs and interventions to improve the health and reduce the burden of chronic disease. Approximately 10-20% of all diagnosed strokes occur in young adults (18-45 years old) each year. This population is not typically targeted for stroke mass media campaigns; therefore, some barriers exist requiring tailored health promotion interventions, whose effectiveness remains uncertain.

Objective: A systematic review aimed to identify relevant published evidence, synthesize the main study components and identify evidence of the effectiveness of the interventions for mass media campaigns targeting the awareness of the Warning Signs (WS) and Risk Factors (RF) for stroke in young people. Supplementary factors of message repetition and need to call 9-1-1 at first sign of stroke symptoms were also examined.

Method-Data Sources: PubMed, MEDLINE, and PsycINFO were searched for journal articles on health promotion interventions for increasing stroke awareness of warning signs in young people, published in English between 2005 and 2015.

Results: Twenty-six studies investigating mass media stroke campaigns were included, reporting only two studies that targeted young adults.

With a majority of stroke communication studies not employing theories it is difficult to determine the relationship among variables and thus provide an explanation regarding their relationship. Out of 26 studies reviewed only one study utilized a theory and no studies used theory to study stroke in young adults. The mass media interventions in these studies varied in widely target populations, settings, delivery methods, contents and messaging involved. Twenty-four of the study designs were quantitative, and the emerging evidence of effectiveness was inconclusive.

None of the studies included variables or messaging on the severity of having a stroke and the need to call 9-1-1 immediately upon witnessing WS. Additionally, no studies included variables that measured repetition of messaging and the increase of stroke WS and RF.

Conclusion: Further investigation is needed in mass media stroke education targeting young adults. Since no studies targeting young adults have been conducted using a theory, measuring the effects of message repetition, and utilizing educational messaging to ensure immediate transport to a hospital upon first stroke WS further research is needed.

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Notes:

The effect of auriculotherapy on stress, anxiety, and depression in ms patients: A double blind randomized clinical control trial (parallel design)

Mahboubeh Valiani, Fereshteh Ashtari and Marjan Mansourian
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Background: MS is one of the central nervous system diseases, which is of relatively high prevalence among neurological diseases. Multiple studies have shown that stressful life is associated with an increased risk of MS. The aim of this study is to investigate the impact of using the auriculotherapy technique on stress, anxiety, and depression in MS patients.

Materials and Methods: This study was a double blind randomized clinical trial in two groups. The sample size was estimated to be 64 subjects in each group. The Center for MS at Kashani hospital in the Province of Isfahan was the location of research. DASS-21 questionnaire was completed before, after and one month after intervention. The auriculotherapy technique began in the intervention group and at the end

of each session, herbal vaccaria seeds were fixed at three main points on the ear, for at least 3 days. All the tests were carried out using the SPSS19 software at an error level of 5%.

Results: The results showed that the mean score of stress, anxiety and depression decreased in the auriculotherapy group compared with that in the placebo group. The analysis of variance showed significant differences between the two groups after intervention and one month later ($P < 0.05$). Whereas the stress, anxiety and depression score had not undergone any significant changes before intervention in two groups ($P > 0.05$).

Conclusion: Auriculotherapy as a safe and effective technique reduced stress, anxiety, and depression in MS patients.

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Effect of dimethyl fumarate on Apoptosis and Neuroinflammation in PTZ kindling model in rats

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Roles of apoptosis and neuroinflammation have been well established in the pathogenesis of epilepsy. It has been reported that the activation of nuclear factor-erythroid 2-related factor-2 (Nrf2) contributes to the attenuation of inflammation by inhibiting nuclear factor-kB (NF-kB) pathway. Current study was designed to evaluate anti-apoptotic, anti-inflammatory and anti-oxidative roles of dimethyl fumarate (DMF), an activator of Nrf2, in chemical kindling model in rats. Chemical kindling model was established in Wistar rats by intraperitoneal (i.p.) administration of pentylentetrazole (PTZ). Animals were treated with DMF (60 mg/kg) to activate the Nrf2 antioxidant response element (ARE) pathway. The animals were assessed for seizure score, neuronal damage and inflammatory cytokines levels (IL-1 β , IL-6 and TNF- α) in hippocampus. The mRNA levels of various genes (Nrf2, HO-1, NQO1, Bcl2, Bax, Caspase 3, NF-kB, IL-6, IL-1 β and TNF- α) were

quantified by real-time PCR. The expression of anti-oxidative (Nrf2), apoptotic (Bax, Bcl2) and inflammatory (NF-kB) proteins were analysed by western blot. Immunohistochemistry (Bax) and electron microscopy were done to assess apoptosis. There was reduction in the seizure score, percentage of kindled rats and neurological damage score in DMF treated rats. The levels of pro-inflammatory cytokines were also decreased by DMF treatment. DMF downregulated the expression of inflammatory (NF-kB) and apoptotic (Bax, Caspase-3) genes and proteins. DMF treatment increased the gene expression of Nrf2, HO-1, NQO1, Bcl-2 and protein expression of Nrf2 and Bcl2. The present study demonstrated anti-apoptotic, anti-inflammatory and anti-oxidative effect of DMF in PTZ kindled rats. Therefore, it could be a potential new avenue to target the pathological changes during epileptogenesis.

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Intramedullary metastasis of pulmonary carcinoma: Case report

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Background: Intramedullary spinal cord metastasis (IMM) of pulmonary carcinoma are extremely rare. Review of the literature reveals only 300 cases documented.

Case description: A 54-year-old man K.S, a medical radiology technician, with history of chronic tobacco use presented with progressive tetraparesis with predominant weakness of the left limbs for 03 Months

Radiologic explorations: Resonance Imaging (MRI) of the cervical spine showed intradural intramedullary tumor at the spinal level of C4-C5.

The Treatment: In order to avoid tetraplegia the patient underwent surgery with a total macroscopic tumor removal.

Histopathology: Diagnosis of metastatic carcinoma, Thoracic CT showed a 1,27 X 1,42cm right hilar nodule. The patient was advised Chemotherapy and Radiation by oncologists.

Discussion: Intramedullary spinal cord metastasis pulmonary carcinoma is extremely rare,

They represent 1% of all spinal cord tumors and 1-3% of intramedullary tumors.

pulmonary cancers are the most frequent type of tumors with spinal cord metastasis (48% of cases.

Conclusion: Metastasis to the spinal cord is rare and may be the first manifestation of a primary cancer. Rapid progression of neurological symptoms should warrant imaging and may indicate metastasis to the spinal cord, especially in patients with previously diagnosed cancer. -Though the prognosis for metastatic pulmonary carcinoma patients is poor, early detection and appropriate treatment of such cancer patients may ameliorate symptoms and prolong good quality life.

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Need of health policy and system research for betterment of geriatric population

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Health Policy and Systems Research is broadly believed as the production of new knowledge to improve societies organization to achieve health goals. The WHO defines it as all organizations and people primary intent is to promote and maintain health. For instance, an aging population leads to increased burden of chronic diseases, disabilities, mental illnesses and other co-morbidities. Health care systems throughout the world is lacking and facing the challenges to provide the health care and quality of life to their elderly population. How health policy and system research can contribute for provision of quality health care and quality of life to every group of population. For achievement, there is a need to advocate the funders of health research with a clearer understanding of what is the Health Policy and System Research and how it relates to health research especially neglected area like; geriatric diseases. As most of the people think that

health system is only; The pyramid of government funded health facilities; While this is clearly one aspect of the health system, it is comprised of; Public health laws and regulations, Financing mechanisms such as social health insurance and user fee schemes especially for neglected geriatric population, Involvement of communities and private health sector to promote health, traditionally health policy and system has been dominated by physicians. Scientists schooled in basic and social science are less comfortable with the methods used in health policy and systems research, limited funding is a major issue, rigorous analysis and feasible actions within the limited budget is very hard. In the light of this discussion, it seems that the basic cause of failure to achieve the goals is, not to use the Health Policy and System Research properly.

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Impact of Endoscopic Gross Total Resection of Colloid Cysts on memory & quality of life

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Background: Colloid cysts of third ventricle has conventionally been managed with microsurgery. Endoscopic surgery is increasingly being adopted with variable results. This study is to evaluate the efficacy of endoscopic surgery among these in relation to memory impairments and quality of life.

Methods: Patients of colloid cysts who underwent endoscopic surgery were studied with respect to demographics, clinico-radiological features and extent of resection in MRI at 3 months. Memory impairments were assessed using PGIMS and quality of life using WHOQOL-BREF, considering patients with microscopic resection or stand-alone VP shunt as controls. Appropriate statistical analyses were performed.

Results: There was a total of 19 patients who underwent endoscopic surgery, with a mean age of 35 years. The mean

maximum diameter of cysts was 19 mm. Gross total resection could be achieved in all. In the mean follow-up of 37 months, none of the patients had recurrence or ventriculomegaly. There was non-significant trend of better memory scores overall following endoscopic surgery, while minor impairment in recent memory was noted in only 1 patient. The mean QOL score was better after endoscopic surgery (297.6), compared to microscopic (282.4) and VP shunt (250.9) controls. The scores were significantly better in social domain of QOL after endoscopic surgery, and non-significant among other domains.

Conclusion: Gross total resection rate of colloid cysts is near 100% after endoscopic surgery. While memory improved overall, quality of life is better than after either microscopic surgery or stand-alone VP shunt.

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Tau protein in the retina

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Background: Recent research suggests that Tau is the culprit lesion along with neuroinflammation in the etiology of Alzheimer's Disease (AD). Retina is the extension of the brain and is the most easily approachable part of the central nervous system. Detection of the pathological protein accumulations may be possible by using spectral domain optical coherence tomography (SD-OCT) and fundus autofluorescence (FAF). There is evidence showing that retinal plaques start accumulating even earlier than the ones in the brain. Most recent Tau protein images in the brain consist of normal or reverse C-shaped paired helical filaments.

Methods: 20 patients with PET proven AD were examined by SD-OCT and FAF. Mean age was 72. Hypo or hyperfluorescent retinal lesions were scanned by SD-OCT and C shaped paired helical filaments were investigated in a masked fashion. The researchers agreed on the shape of the

lesions. Both C-shaped (normal or reverse) filaments and thinner fibrillary structures were taken into consideration.

Results: In all the patients, paired helical filaments that exactly corresponded with the histopathologic and cryo-EM images of Tau (Figure 1) in terms of shape and dimension were detected along with thin fibrils and lesions similar to amyloid beta. The number of the retinal filaments and other abnormal proteins was in concordance with the severity of the disease process. The advanced retinal filaments had normal or reverse paired C shapes (Figure 2) and thin fibrils had the shape of histopathologic images seen in early developmental stages of the disease.

Conclusions: Retinal images of Tau were disclosed for the first time in live AD patients. Retinal neuroimaging is a trustable biomarker and tool for monitoring the disease.

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Notes:

Epidermoid cyst located in the fourth ventricle: Case report

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A 64-year-old woman with no significant past medical history was evaluated for dizziness and unsteady gait for two months. There was no history of headache, vomiting, tinnitus, difficulty in hearing and limb weakness. Examinations revealed no neurological deficit. Cerebellar signs were absent. Plain and CEMRI brain revealed an epidermoid cyst in the fourth ventricle and anteriorly compressing the pons and medulla. The lesion also extends to bilateral foramina of Luschka. Through

a suboccipital craniectomy, the encapsulated epidermal cyst, developed from the fourth ventricle, could be totally removed without any attachment to the floor of the fourth ventricle. The histopathological study showed capsular tissue rich in keratin and protein, findings consistent with epidermoid cyst. There were no complications in the postoperative period and the patient developed clinically well during follow-up of six months.

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