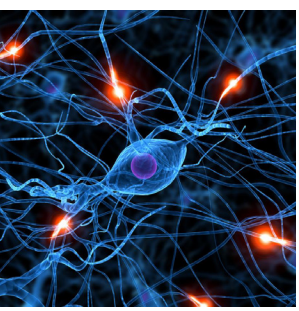
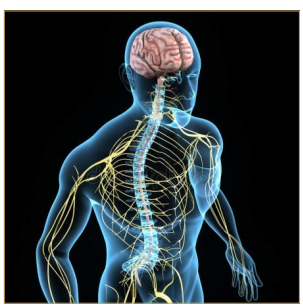
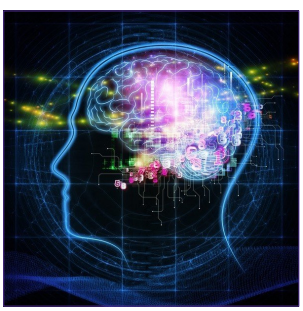
Video Presentation

CNS 2019



2nd International Conference on

Central Nervous System and Therapeutics

June 10-11, 2019 | Edinburgh, Scotland

Microelectrode recording and deep Brain Stimulation

Amal Mokeem
King Faisal Specialist Hospital & Research center/Riyadh, KSA

Introduction: Microelectrode recording (MER) Defined as Neurophysiological Technique that detect and amplifies the activity of Individual Single Neural Units.

Mechanism of Deep Brain Stimulation (DBS):

- HFS suppresses the activity
- of STN, STN neurons discharge spontaneously at a frequency of ~ 20 Hz.
- PD they became hyperactive with an average firing ~ 40Hz. DBS HFS at >100Hz, STN will increase firing during the initial stimulation period after which they will fail to respond secondary to inactivation of Na+ channels, result in synaptic inhibition.
- This stimulation induced activation of inhibitory presynaptic terminals result reduction of pathologic activity and its transmission, and subsequent improvement in information processing high likely responsible for amelioration of motor symptoms during DBS

The Food and Drug Administration (FDA) approved DBS as a treatment for:

- Essential tremor in 1999
- Parkinson's disease in 2002
- Dystonia in 2003

Methods: Patients selection criteria is important.

A number of stimulation techniques may be performed during movement disorder surgery.Used either:

To asses' side effect (proximity to structures wish to avoid) To assess the potential clinical effect of chronic stimulation.

Conclusion: Deep Brain Stimulation (DBS) is safe procedure.

It is safety Greatly depend on:

The quality of the instruments.

The method of stereotactic planning.

The experience of the surgical and neurophysiology team. Complication of Deep Brain Stimulation (DBS) could be Numbness, tingling, Symptomatic subdural hemorrhages, Infection, Hardware issues.

Speaker Biography

Amal Mokeem, is at present a consultant Clinical Neurophysiologist in the department of Neurosciences at King Faisal Specialist Hospital/ Riyadh. Assistance professor at Al-Faisal University. Program director of Clinical Neurophysiology fellowship program and technologist training program. She is honored to be the first Saudi Neurophysiologist physician experienced in the field of deep brain stimulation (DBS) and intra-operative micro-electrode recording (MER) in the kingdom of Saudi Arabia.

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E-Poster

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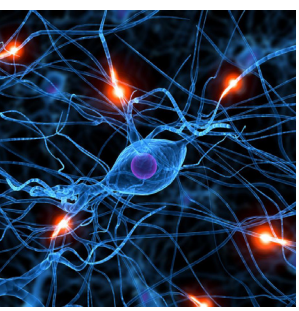
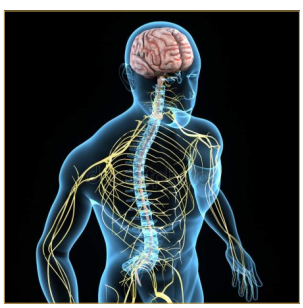
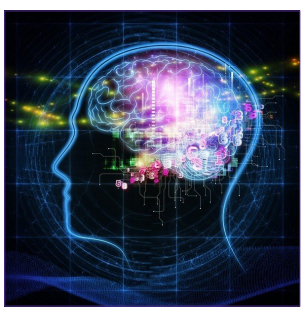

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The validity of training for Dementia prevention supporters

Kazue Sawami
Nara Medical University, Japan

Background and purpose of the study: The previous literature of this study has shown that the level of cognitive and physical functioning in elderly persons is extremely diverse, which results in uneven access to preventive activities. On challenge that is especially pressing is to provide support for elderly persons who cannot participant in health checkups and other activities due to declines in ADL. Thus, this study aimed to train personnel who can visit the homes of elderly persons and engage in dementia prevention activities, as well as to examine their effectiveness.

Methods: Training for dementia prevention supporters were conducted twice a month for half a year (12 times in total). Questionnaire and interview surveys were implemented on the trainees on every third training session (4 times in total), in order to analyze the progress of the training.

Results: This survey presents the results of the 6th interim evaluation. The data for 46 valid respondents out of the 69 registrants were analyzed. The average age was 60.1 ± 9.5, with 6 males and 40 females. In the first questionnaire, it was found that there were differences among trainees in the level of knowledge regarding dementia prevention. As the training progressed, the differences among individuals decreased, and by the 6th training, the participants were able to serve as guides in occupational therapeutic craft activities and showed an increased self-perception of themselves as dementia prevention supporters.

Conclusion: Even elderly persons who cannot participate in dementia prevention activities due to reasons such as declining ADL can participate in certain available activities if supporters visit their homes. There is a high demand among elderly persons for these kinds of activities, and the training of personnel who are able to respond to this demand is urgently needed. In the future, we would like to publicize the results of interviews taken during visitations.

This research funding is scientific research expenses of the Japanese Ministry of Education, Culture, Sports, Science and Technology

Speaker Biography

Kazue Sawami is a professor at Nara medical University and completed her PhD at health science. Her research is about the cognitive abilities of elderly people. Current clinical trials below. UMIN000029749, 000025484.

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Accepted Abstracts

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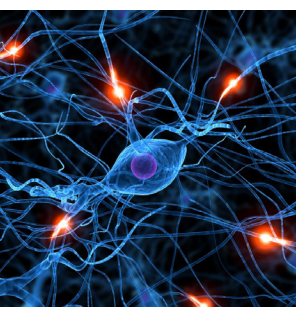
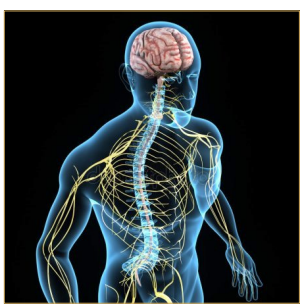
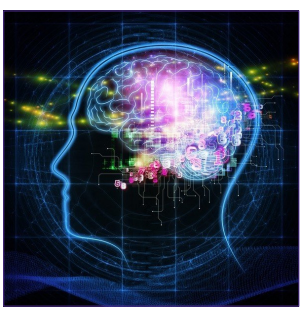

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The state of Stress in today's leadership world

Asha Mankowska
Business Accelerated now, USA

Motivation: Stress has become a major predicament in business and leaders are increasingly susceptible to it. Stress has been implicated as an important determinant of leadership functioning. Their stress is proven to impact their followers (companies, countries, team members) and if not prevented or managed properly, it can result in anxiety, depression, and as a direct consequence: burnout, or worse. CEOs and management face many challenges, and critical failures and overwhelming odds can easily break anyone down and make them lose sight of their goals. They have to have the skills to overcome stressful situations and demonstrate conduct that will make a business, an organization or country, productive and profitable.

The Problem: A leader's stress level will influence his or her behavior and that can impact the stress levels and potential for burnout in subordinates. A lack of resources and time are the most stressful demands experienced by leaders. Stress is caused by trying to do more with less, and to do it faster. For 88% of leaders, work is a primary source of stress in their lives and having a leadership role increases the level of stress. Unfortunately, very few (only 28%) companies provide tools to help management deal with stress more effectively.

Methodology: Study & Results: During the many years, I have worked with business leaders, I have come to recognize the 7 most common stressor determinants and I have developed methodology to conquer them.

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Amyotrophic Lateral Sclerosis viewed from MRI

Bárbara Aymeé Hernández Hernández
Cuban Neuroscience Center, Cuba

Introduction: Amyotrophic lateral sclerosis (ALS) is an uncommon illness, it is caused by motor neuron degeneration, upper, lower and bulbar muscles are affected. The diagnostic is based in Scorial criteria. Some research also report degeneration in no motor structures of the brain.

Objective: Describe Image techniques findings in ALS diagnosis.

Method: During January 2016 to January 2018, twenty patients with ALS diagnosis and twenty health subjects were evaluated. 3T MRI image were obtained from the patients and from the health subjects. Post- processing MRI techniques like cortical thickness, voxel based morphometric, diffusion techniques and cortico-spinal tract and corpus callosum tractography were applied at different levels of the brain structures. Also, cortical thickness was evaluated.

Results: Cortical thickness was reduced in ALS patients in comparison with health control group. Fractional Anisotropy (FA) was reduced in ALS group in comparison with health group, more significant at cortex, internal capsule and corpus callosum. Fibers number of corticospinal tract and corpus callosum were diminished in ALS group in relation to health group.

Also grey and white matter were reduce in ALS group, in areas such as: cingulate gyrus (anterior and medium portion), anterior portion of occipital lobe, left caudate and putamen nucleus, right claustrum nucleus, lower and medium temporal gyrus bilateral, left precentral and postcentral gyrus, corpus callosum (medium and posterior portion), corticospinal tract (at midbrain and pons), bilateral internal capsule (medium and posterior third), bilateral optical radiation, bilateral lower longitudinal fascicle, bilateral hippocampal fimbriae, bilateral radiated corona and pontocerebellar fibers.

FA abnormality in corticospinal tract at cortex, internal capsule, brainstem and corpus callosum was in correlation with clinic (ALSFRS-R) scale and neurophysiologic abnormalities.

Cortical thickness was diminish in ALS group of patients in relation with health group.

Conclusions: MRI methods show abnormalities in motor and not motor structures of brain in ALS patients.

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Omega-3 Fatty Acids: A novel approach for pain treatment

Carlos Laino
National University of La Rioja, Argentina

The treatment of acute and chronic severe pain remains an important common challenge faced by clinicians working with the general population, and even after applying recent advances in the treatment of acute and chronic severe pain, there can continue to be manifestations of adverse effects. Chronic pain affects many aspects in the life of the patient, and often has an impact on their families. In some cases, after an acute pain, the patient continues to experience chronic pain, which can be a result of illnesses such as cancer. As there is growing evidence that omega-3 fatty acids can contribute to the reduction of pain, this presentation will describe an innovative technological development, both in its pharmaceutical composition (using omega-3 fatty acids with either morphine or methadone) and in the pharmacological treatments associated with its use. In addition, the preclinical evidence concerning the analgesic effects of omega-3 fatty acids (eicosapentaenoic acid and docosahexaenoic acid) will also be explored.

The main advantage of new pharmacological treatments using these pharmaceutical compositions lies in the improved pain control obtained with a sub-therapeutic dose of these opioids, which can lead to the elimination or at least potential reduction of the adverse effects.

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Early childhood vaccines and regressive Autism: Is there a connection?

Sarah Adelaide Crawford
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Regressive autism may be defined as a rapid-onset loss of previously acquired milestones in central nervous system (CNS) development that occurs usually within the first several years of life and may also be associated with seizures or other abnormal CNS activity. Clinically, this abnormal response to vaccination is termed "vaccine encephalopathy", in which developmentally normal infants or children display a sudden developmental regression, reduced developmental progression and/or seizures with rapid onset following vaccine administration. That the dramatic CNS changes associated with regressive autism so rapidly follow the administration of vaccines is highly suggestive of a causative connection which, however, has been disputed by some reputable epidemiological studies. The Quantitative Threshold Hypothesis (QTE) proposes that autism results from the accumulated exposure to genetic and environmental causes that impinge upon immunological factors linked to CNS development to produce a critical incidence threshold for Autism Spectrum Disorder (ASD). The proposed connection between vaccines and regressive autism is based on an application of this model, in which at-risk individuals may develop regressive autism and associated sequelae in response to vaccine administration if this causes an individual to cross the threshold boundary for CNS impairment. The physiological basis of the proposed vaccine/autism connection results from the fundamental association between vaccine-induced programming of adaptive immune system responses and its direct dependence upon innate immune system inflammatory responses to the vaccine. In some at-risk individuals predisposed to neuroinflammation due to the combined effects of genetic and environmental immuno-stimulatory risk factors, the threshold to immunopathology resulting in neuroinflammation and impaired neural function may thus be induced by vaccine administration. This paper will present risk-factor assessment parameters that can be used preventively to identify children for whom vaccine protocols should be adjusted to reduce the incidence of regressive neurological impairment.

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Changing the Game: A New Class of Anti-Migraine Drugs

Teena Shetty
Concussion Program at HSS, USA

Background: Migraine headaches are a severe and disabling neurovascular disorder affecting nearly 20% of adults in the United States1. Calcitonin Gene Related Peptide (CGRP) monoclonal antibodies (mAB) is a new class of anti-migraine drugs that represent the first targeted therapy for the prevention of migraine.

Methods: There are currently only 3 manufacturers with FDA approved CGRP mABs. Both Emgality (Eli Lilly) and Ajovy (Fremanezumab) target the CGRP ligand whereas Aimovig (Amgen) targets the CGRP receptor. All drugs have been tested independently in studies of episodic and chronic migraine. The safety and efficacy of these study drugs will be reviewed.

Results: All three FDA approved drugs show similar efficacy and safety profiles. Aimovig and Emgality reported a mean difference from placebo in reduction of headache days for episodic migraines of 1.9 days compared to 1.5 days for Ajovy.2-4 Change in mean difference was greater for studies of chronic migraine at 2.5, 2.1 and 2.1 days, respectively.5-7 Further data from a 5-year open-label extension study of Aimovig demonstrates its long-term efficacy with 67% of patients experiencing ≥50% reduction in chronic monthly migraines.4 Data also suggests that CGRP inhibitors may have greater efficacy in patients who have failed 1 or more preventative medications.4

Conclusions: Evidence to date suggests that overall, CGRP targeted therapies for the prevention of a variety of headache disorders represent a new series of drugs that are powerful and effective. CGRP anti-migraine drugs have favorable treatment profiles similar to those of placebo and have the potential to treat migraine sufferers with treatment resistant headaches.

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