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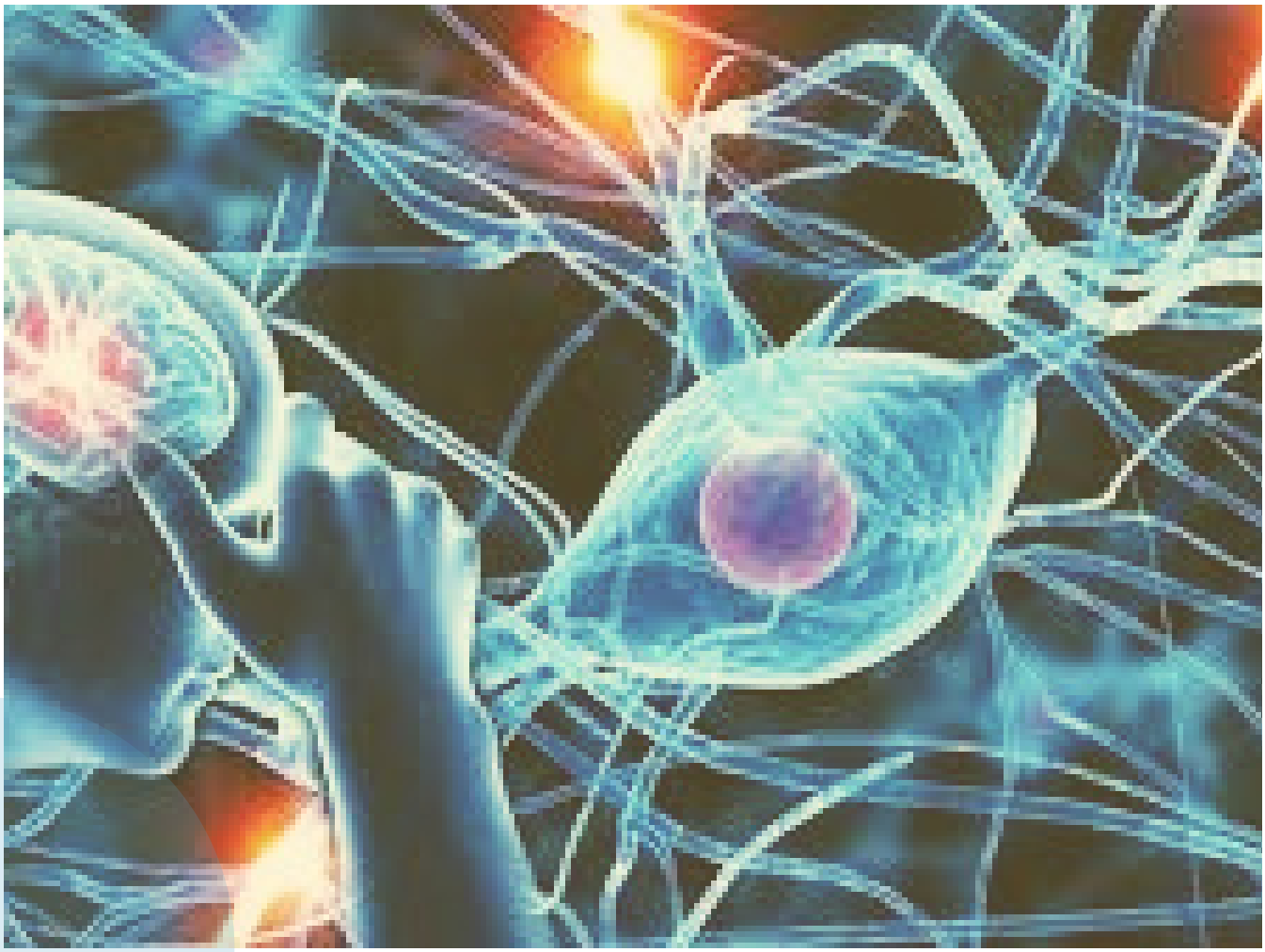

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The role of Piromelatine on insulin/glucose metabolism, GLUT4, BDNF and pCREB/CREB in a rat prenatal stress model

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Abstract

Background: Prenatal stress (PNS) can impair the feedback mechanism of the hypothalamic-pituitary-adrenal (HPA) axis and hypercorticism. The increased stress hormones in pregnant mothers that result in hyperglycemia, leads to neuroendocrinological alterations later in life, which can affect brain plasticity. The aim of the current study, in regard to brain plasticity, was to assess the effect of the chronic Piromelatine treatment, a complex compound, which affect the melatoninergic and partially the serotoninergic, simultaneously activating the melatonin (MT) type 1, 2 and 3 receptors and the serotonin (5-HT) type 1A and 1D receptors, on systemic insulin and glucose metabolism and the insulin-dependent glucose transporter GLUT4, BDNF and pCREB/CREB ratio in the hippocampus of prenatally stressed male offspring. Methodology: All investigations were made on 60-day old male offspring of prenatally stressed mothers. Fasting rats were sacrificed for the collection of blood samples and both hippocampi. Plasma glucose, serum insulin levels and GLUT4, pCREB/CREB ration and BDNF in the hippocamppi were evaluated by ELISA, using kits as per the instructions of the manufacturer. The homeostatic model assessment of insulin resistance (HOMA-IR) was used to determine insulin resistance. piromelatine (20 mg/kg) was injected daily for a period of 21 days. Results: The prenatal stress decreased the GLUT4, pCREB/CREB and BDNF in the hippocampus of the male offspring and increased plasma glucose concentration, serum insulin levels and HOMA-IR. These parameters were restored to normal levels by the chronic treatment with the melatonin compound piromelatine. Conclusion: These results suggest that piromelatine can have beneficial effect on brain plasticity via positive influence on the insulin-glucose metabolism and related GLUT 4 receptors, as well as pCREB/CREB ratio and BDNF in the hippocampus of prenatally stressed male offspring. Acknowledgement: This research was supported by the National Science Fund, Bulgaria (grant No. KP-06-H21/10).

Keywords: Prenatal stress, offspring, piromelatine, insulin, glucose, GLUT4, pCREB/CREB, BDNF

Corticospinal excitability and reflex modulation in a contralateral non-stretched muscle following unilateral stretching

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Abstract

Muscle stretching effects on the range of motion (ROM) and potential force deficits in a non-stretched muscle, and the underlying mechanisms is an ongoing issue. This study aimed to investigate crossover stretching effects and mechanisms on the plantar flexor muscles. Fourteen recreationally active females (n=5) and males (n=9) performed six sets of 45-s static stretching (SS) (15-s recovery) to the point of discomfort of the dominant limb (DL) plantar flexor muscles or control (345-s rest). Participants were tested for a single 5-s pre- and post-test maximal voluntary isometric contraction (MVIC) with each of the plantar flexor muscles and were tested for the DL and non-DL ROM. They were also tested pre- and post-test (immediate, 10-s, 30-s) for the Hoffman (H)-reflex and motor evoked potentials (MEP) from transcranial magnetic stimulation (TMS) in the contralateral, non-stretched muscle. The DL and non-DL-MVIC force decreased significantly (↓10.87%, p=0.027) and near significantly (↓9.53%, p=0.06) with SS, respectively. The SS also significantly improved the DL (6.5%, p<0.001) and non-DL (5.35%, p=0.002) ROM. The MEP/MMax and HMax/MMax ratio did not change significantly in the non-DL.Prolonged static stretching improved the stretched muscle's ROM. However, the stretched limb's force was negatively affected following the stretching protocol. The ROM improvement and force impairment (near significant) were transferred to the contralateral muscles. The lack of significant changes in spinal and corticospinal excitability confirm that the afferent excitability of the spinal motoneurons and corticospinal excitability may not play a substantial role in non-local muscle's ROM or force output responses.

Key Words: crossover; flexibility; range of motion; Hoffman reflex, transcranial magnetic stimulation

Impact of fibrinogen plasma level on poor functional outcome after rt-PA intrave-nous thrombolysis

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Abstract

Background: Intravenous thrombolysis (IV) with recombinant tissue plasminogen activator (rt-PA) or also named alteplase remains the most commonly used pharmacological therapy for arterial ischemic stroke (AIS). In theory, the effect of IV thrombolysis might depend on hemostasis factors affecting clot structure. Fibrinogen is involved in primary hemostasis. The dynamic changes in fibrinogen levels are associated with symptomatic intracranial hemorrhage (sICH) in patients treated with intravenous rt-PA. Besides, the levels of fibrinogen decrease after thrombolysis, and remain low within 24 h. However, the data for poor outcomes (mRS 0-6) after 3 months are limited. Our study aims to determine the effect of fibrinogen level on poor functional outcomes in patients who received alteplase IV thrombolysis. Material and methods: TRACE II is a multicenter, prospective, open-label, blinded-endpoint, randomized controlled, non-inferiority trial, including adults with an acute ischemic stroke within 4·5 h, received intravenous alteplase (0.9mg/ kg). The fibrinogen plasma level was measured before and 24 hours after thrombolysis. The efficacy outcome was the proportion of participants who had an mRS score of 2-6 at 90 days. All statistical analyses were performed with SAS software, version 9.4.Results : 704 patients received rt-PA intravenous thrombolysis. Among them, 266 (37.6%) had poor outcomes at 3 months with a mean age of 68 (60-75) and male dominance (67%). In multivariable regression analysis, plasma fibrinogen level was independently associated with poor outcomes adjusted for cardiovascular risk factors. On admission, fibrinogen level was significantly associated with risk of mRS (2-6) (OR: 1.3; CI 95% (1.08-1.57); p=0,005), after 24 h of rt-PA thrombolysis the fibrinogen increasing 1.52-fold the risk of poor outcome (OR: 1.52; CI 95% (1.24-1.86); p<0.001). Conclusions: The fibrinogen level could be a predictor biomarker of poor outcomes after 30 months in patients receiving rt-PA intravenous thrombolysis.

Key Words: Arterial ischemic stroke, Intravenous thrombolysis, rt-PA, Fibrinogen

(Telomerase reverse transcriptase and telomerase RNA component gene expression as novel biomarkers for Alzheimer's disease)

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Abstract

Alzheimer's disease (AD) is a neurological, age-related condition that causes cognitive decline and memory loss; it induces dementia in the elderly. Telomerase is a reverse transcriptase ribonucleoprotein that adds nu¬cleotides to the end of DNA. This study aimed to compare human telomerase reverse transcriptase (hTERT) and telomerase RNA component (TERC) expression in different phases of AD and healthy cohorts. Sixty participants were divided into 30 who had dementia and 30 who did not. After collecting blood samples, total RNAs were extracted from the plasma. Screening for hTERT and TERC gene expression was carried out by quantitative reverse transcriptase real-time polymerase chain reaction (RT-qPCR) using the relative quanti¬fication method to estimate the expression changes in hTERT and TERC. The RT-qPCR results show that hTERT and TERC gene expression was significantly down-regulated in Alzheimer's patients compared to the health subjects (P-value= <0.0001,0.005), respectively. The area under curve AUC was 0.773 for hTERT and 0.703 for TERC. The Mini-Mental State Examination scores revealed a significant difference between dementia and non-dementia subjects (P=<0.0001). We conclude down-regulations in both hTERT and TERC gene expression in AD patients, which supports our hypothesis that the telomerase expression gene in the blood of AD patients can serve as a non-invasive, early, and novel diagnostic marker of AD.

Keywords: Alzheimer, biomarker, telomerase, RT-qPCR, hTERT, TERC

Antibody-Proteases as the Upgraded Translational Tools of the Next-Step Generation in Personalized and Precision Practice to Monitor Multiple Sclerosis at Clinical and Subclinical Stages

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Abstract

Biomarkers enable pre-early diagnosis, guide targeted therapy and monitor the active ty and therapeutic responses across the diseases. Among the best-validated predictive biomarkers are autoimmunity-related ones to predict and prognosticate risks of the chronification, complications and thus disabling. The latter is so much valuable and important since chronic autoimmune inflammation course is structured to consist from different stages including subclinical and clinical ones. Multiple sclerosis (MS) is just one of the chronic tissue-specific autoimmune diseases resulting in a destruction of myelin by different tools, including autoAbs of very broad specificity. Along with canonical Abs, some of the families proven to occur are Abs possessing with catalytic activity (abzymes), and thus to belong to Abs with functionality! Abs against myelin basic protein/MBP endowing with proteolytic activity (Ab-proteases with functionality) are of great value to monitor demyelination to illustrate the evolution of MS. Anti-MBP autoAbs from MS patients and mice with EAE exhibited specific proteolytic cleavage of MBP which, in turn, markedly differed between:

(i) MS patients and healthy controls; (ii) different clinical MS courses; (iii) EDSS scales of demyelination to correlate with the disability of MS patients to predict the transformation prior to changes of the clinical course. Ab-mediated proteolysis of MBP was shown to be sequence-specific whilst demonstrating five sites of preferential proteolysis to be located within the immunodominant regions of MBP and to fall inside into 5 sequences fixed. Some of the latter (with the highest encephalitogenic properties) were proved to act as a specific inducer of EAE and to be attacked by the MBP-targeted Ab-proteases in MS patients with the most severe (progradient) clinical courses. The other ones whilst being less immunogenic happened to be EAE inducers very rare but were shown to be attacked by Ab-proteases in MS patients with moderate (remission-type) courses. The activity of Ab-proteases was first registered at the subclinical stages 1-2 years prior to the clinical illness. About 24% of the direct MS-related relatives were seropositive for low-active Ab-proteases from which 22% of the seropositive relatives established were being monitored for 2 years whilst demonstrating a stable growth of the Ab-associated proteolytic activity. Moreover, some of the low-active Ab-proteases in persons at MS-related risks (at subclinical stages of MS), and primary clinical and MRT manifestations observed were coincided with the activity to have its mid-level reached. Registration in the evolution of highly immunogenic Ab-proteases would illustrate either risks of transformation of subclinical stages into clinical ones, or risks of exacerbations to develop. And the “escalation” illustrating re-orientation of the sequence specificity to focus on the more important targeted sites for proteolysis might be an early prognostic and/or predictive sign to monitor demyelination progressing and thus the clinical illness to come. The activity of Ab-proteases in combination with the sequence-specificity would confirm a high subclinical and predictive (translational) value of the tools as applicable for personalized monitoring protocols. Sequence-specific Ab-proteases have proved to be greatly informative and thus valuable biomarkers to monitor MS at both subclinical and clinical stages! And the translational potential of this knowledge is in the rational design of new diagnostic tools and new therapeutics based on principles of artificial biocatalysts and Biodesign.

Ab-proteases can be programmed and re-programmed to suit the needs of the body metabolism or could be designed for the development of principally new catalysts with no natural counterparts. Therefore, the proposed predictive value of MBP-targeted Ab-proteases for the development of MS is being challenged! Of tremendous value in this sense are Ab-proteases directly affecting the physiologic remodelling of tissues with multilevel architectonics (for instance, myelin)., whilst securing the requests and standards of regeneration and remyelination So, further studies on Ab-mediated MBP degradation and other targeted Ab-mediated proteolysis may provide biomarkers of newer generations and thus a supplementary tool for assessing the disease progression and predicting disability of the patients and persons-at-risks.

Different Age Myopic Control Effectiveness by Photobiomodulation Therapy

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Abstract

Purpose: To assess the age distribution with ocular axial length (AL) shortening among myopic children by photobiomodulation (PBM) therapy. Methods: Retrospective study of myopia control rate by ocular axial length with PBM therapy in children at each age lever from 4 to 17 years in China. All the data was collected from those myopic children who received the PBMT by the same device for more than 6 months with both baseline and follow-up AL. The effectiveness of myopia control rate definition was any of the follow-up AL < baseline AL. Baseline age was categorized into five groups as follows: 4-7, 8, 9,10-12, and 13–16 years. The changes of AL at follow-up from baseline was compared according to the age groups. Totally 5 groups were built according the baseline ages. And 4 centers of medical institutions for 3 irradiance levers were collected. Results: A total of 225 myopic children with at least 6 months of follow-up data were included. The mean age of participants was 8.64±2.20 years with AL of 24.41± 1.17 mm. There were 135 (63.70%), 94 (63.10%), 10 (66.70%) and 26(61.90%) children with AL shortening based on follow-up at 1 -month, 3-month, 6-month and 12-month, respectively. Among AL shortened eyes, the mean AL difference (standard deviation, SD) was -0.039(0.11) mm, -0.032(0.11) mm, -0.037(0.12) mm, -0.028(0.57) mm at 1-, 3-, 6-month and 12-month follow-up, respectively. Greater AL shortening was observed among children who had longer baseline AL (P = 0.006). The primary outcome of AL shortening phenomena by PBM therapy was significantly different due to baseline AL at 3-month follow-up. In the multivariable model, although AL shortening was significantly related to baseline AL, ages and irradiance (P = 0.008, P=0.003, P=0.001, respectively), only statistically difference was only detected at Month -3 follow-up of 6 different age groups. More than a quarter of children had AL shortening with PBM therapy, and the overall mean AL change was -0.028 mm/year. Conclusions: More than 50% and 25% children had AL shortening with PBM therapy at 6-month and 12-month, respectively. PBM therapy depended on AL more than ages or irradiance.

Keywords: Axial length; Myopia; Photobiomodulation therapy; Retrospective study; Children

Personalized and Precision Medicine (PPM) as a Unique Healthcare Model to Be Set Up to Secure the Human Healthcare, Wellness and Biosafety through The View of Public Health

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Abstract

A new systems approach to diseased states and wellness result in a new branch in the healthcare services, namely, personalized and precision medicine (PPM). To achieve the implementation of PPM concept, it is necessary to create a fundamentally new strategy based upon the recognition of biomarkers of hidden abnormalities long before the disease clinically manifests itself. NIH (Bethesda, USA) has included PPM into a List of the Five Greatest Priorities of Development of Medicine and Healthcare Services in XXI Century. Each decision-maker values the impact of their decision to use PPM on their own budget and well-being, which may not necessarily be optimal for society as a whole. To really understand PPM we would have to understand the various fields of translational applications that provide the tools to exploit and practice PPM, and genomics- and phenomics-related tools, in particular! Improved patient (or persons-at-risk) outcomes with the application of the biomarker tests must consider not only increased survival or quality of life, but also improved clinical decision support (CDS) & making leading to the avoidance of unnecessary therapy or toxicity captured within the rapid learning system. So, bioinformatics, artificial intelligence (AI), machine learning (ML) and biostatistics will be crucial in translating those Big Data into useful applications, leading to improved diagnosis, prediction, prognostication and treatment. It would be extremely useful to integrate data harvesting from different databanks for applications such as prediction and personalization of further treatment to thus provide more tailored measures for the patients resulting in improved patient outcomes, reduced adverse events, and more cost effective use of the latest health care resources including diagnostic, prognostic, preventive and therapeutic (targeted) etc. Personalized aims and objectives exist at every stage of disease initiation and progression to develop a Personalized Health Plan (PHP) addressing lifestyle, risk modification and disease management, and later, Personalized Health Management & Wellness Program (PHMaWP). And a lack of medical guidelines has been identified by responders as the predominant barrier for adoption, indicating a need for the development of best practices and guidelines to support the implementation of PPM! Putting PPM-tools in a public health perspective requires an apprehension of the current and future public health challenges. The principles of PPM and efforts to approaching the right health issues in a timely manner can be applied to population health. Doing so will, however, require a careful view and concerted effort to maintain the needs of population health at the forefront of all PPM discussions and investments. In reality, a new buzzword has crept into the health sciences lexicon: PPM-based public health. The initial drive toward PPM-based public health is occurring, but much more work lies ahead to develop a robust evidentiary foundation for use. PPM and PPM-based Public Health calls for a transdisciplinary approach to support safe and effective deployment of the new enabling diagnostic and therapeutic technologies stressing: not to treat but to get cured!!! And thus the latter would need for novel training since the society is in bad need of large-scale dissemination of novel systemic thinking and minding. And upon construction of the new educational platforms in the rational proportions, there would be not a primitive physician created but a medical artist to be able to enrich flow-through medical standards with creative elements to gift for a patient a genuine hope to survive but, in turn, for a person-at-risk – a trust for being no diseased. This is the reason for developing global scientific, clinical, social, and educational projects in the area of PPM to elicit the content of the new branch.

Should Antiseizure Medications Be Withdrawn After an Extended Period of Seizure Freedom in Individuals with Adult-Onset Epilepsy?

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Abstract

Unlike several epilepsies with onset in pediatric age, adult-onset epilepsies do not typically have a time course that is predictably self-remitting in the large majority of people. Still, about one-half of individuals with adult-onset epilepsy who have been seizure-free an extended period (two years or longer) on antiseizure medications (ASMs) will remain in remission when their drug therapy is discontinued. Although a number of predictors of outcome have been identified, the only way to establish whether the epilepsy has remitted in a given individual is to gradually withdraw ASMs. ASM withdrawal can be beneficial, particularly when the currently used treatment is not well tolerated, or could lead to adverse outcomes in the future (i.e., teratogenic effects should pregnancy occur in a female of childbearing potential). However, the risks associated with ASM withdrawal are significant. Relapse of seizures can have major adverse psychosocial consequences, and also may carry a risk of morbidity and mortality. Most importantly, evidence suggests that in about 20% of individuals whose seizure relapsed following ASM withdrawal, re-institution of pharmacological therapy may not readily restore seizure control. Ultimately, management decisions should prioritize the preference of the well-informed person with epilepsy. Particularly, when adverse drug effects are concern, options to be discussed should include not only withdrawal or continuation of the current treatment, but also dose reduction or substitution with a different ASM.

Biography

Dr Boulenouar Mesraoua is Senior Consultant Neurologist at HMC , Neuroscience Department ,and Associate Professor of Clini-cal Neurology at WCMC-Q; He graduated as an MD from Algeria then moved to Belgium, for a Residency in Internal Medicine and Neurology at Liege University ; following the Belgian Board of Neurology (which he got with high marks), he moved to the National Hospital for Nervous Diseases, Queen Square, London, United Kingdom , for a fellowship in Clinical Neurophysiology, under Pr Willison ; Dr B Mesraoua had also further training in Epilepsy and Continuous EEG Monitoring for two years in the Neu-rophysiology department of Zurich ,Switzerland ,under late Pr Hans Gregor Wieser ,an internationally known clinical epileptologist Dr B.Mesraoua is currently Director of the Neurology Fellowship Program at the Neurology Section at HMC, Doha, Qatar; he is also Assistant Director of the Residency Program at Qatar Medical School. He is the Chairman and the Organizer of the well known Qatar Epilepsy Symposium, and the International Epilepsy School he is running yearly for the past several years ; Internationally, Dr Mesraoua is currently a member of the ILAE Publication Council (2021-2025 term) with the aim of improving the quality of the publications targeting the journals Epilepsia, epilepsia open and epileptic disorders and also a member of the ILAE Task Force Innovation Congress with the aim of organizing and improving the quality of the next international epilepsy congresses.He was also an active and elected member of the Commission on Eastern Mediterranean Region (EMR) , a regional branch of the ILAE,(2017-2020); Dr Mesraoua is a member of the American Academy of Neurology , the Europeen Academy of Neurology ,the American Epilepsy Society and the Canadian Epilepsy society. Dr B.Mesraoua main interests are Epilepsy ,PNES, Electroencephalography and Clinical Neurology;Dr Mesraoua main objectives are to encourage frequent gathering of the epileptologists/neurologists from the MENA region and the rest of the world , promote Epilepsy Teaching in the MENA Region, and encourage multicenter studies involving neurologists and epileptologists in the MENA region. Dr Mesraoua is the recipient of two research Grants, as the Lead Principal Investigator (750.000 USD and 250.000 USD) from the Qatar National Research Fund (QNRF) and Hamad Hospital In-ternal Research Grant (IRGC) , on the following topics : “Continuous EEG Monitoring in the ICU “ and on “Alpha-lactoalbumin , proof of concept in the treatment of epilepsy” .Dr Mesraoua is the author and co-author of many peer reviewed publications ,editor of one book on status epilepticus and eight book chapters in the field of Epilepsy and Clinical Neurology.

Coenzyme A-dependent mechanisms of potentiation of therapy for neurodegenerative diseases

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Abstract

Purpose: analysis of possibility the correction of neurodegenerative pathology based on novel functions of the coenzyme A (CoA) system including redox activity, posttranslational modification of proteins, heme metabolism, biosynthesis of iron-sulfur clusters and succinyl-CoA in mitochondria. Certain progress in elucidating the mechanisms of development and treatment of Inherited Disorders of Coenzyme A (CoA) biosynthesis [Mignani et al, 2021, Cavesto et al, 2023] opens new opportunities for prevention and correction of neurodegenerative pathology of its more prevalent forms (Alzheimer's disease - AD, etc.). A common pathogenetic event is oxidative stress (OS) due to the action and radical-radical interaction of reactive oxygen species (ROS), nitrogen species (RNS) and sulfur species (RSS) modulating the energy potential of cells and CNS structures. The integrated redox response to stress in the form of Reactive Species Interactome-RSI [Cortese-Krott et al., 2017] or Redox Interactome (RI) [Santolini et al., 2019], includes metallocenters, protein and non-protein thiols, particularly cysteine-containing proteins, iron-sulfur clusters (Fe-S), glutathione (G-SH), and CoA. Modeling of neurodegenerative pathology leads to RSI disorders, imbalance of the redox landscape, dysfunction of G-SH and CoA systems, loss of their messenger function and RI protection, interconnection with the heme metabolome that provides resistance of mitochondria to ROS and RNS damage and development of ferroptosis [Yien, Perfetto, 2022; Moiseenok, Kanunnikova, 2023]. Exotic neuronal iron accumulation in inherited neurodegeneration (PKAN and CoPAN) and, similarly, in AD and aging [Atamna, 2004] point to a dysfunction of the heme metabolome in neuronal mitochondria in a situation of defective or impaired CoA biosynthesis. The latter, in deficiency of pantothenic acid (PA) intake is characterized by a decrease in heme-a formation and Fe-S-protein cytochrome oxidase activity [Plesofsky-Vig, 1996]. A low level of PA is detected in the CNS structures of patients with AD [Xu et al., 2020]. New functions of the CoA system point to 4´-phosphopantetheinylation of mtACP in lipoic acid synthesis during Fe-S formation and CoA-ylation of TAC enzymes, particularly Fe-S-containing aconitase, as a protection mechanism in OS [Yu et al.,2021; Barkovic et al., 2021]. In a model system, 4´-phospho-PA effectively inhibited the Fenton reaction. The redox-protective potential of the CoA biosynthesis system is not only realized through Fe-containing proteins, but also activates the formation of G-SH in neurostructures [Moiseenok and Kanunnikova, 2023]. The role of critical availability of succinyl-CoA in heme biosynthesis and Fe 2+ internalization is demonstrated by diametrically opposite shifts of cobalamin (cofactor of methyl-malonyl-CoA mutase) and CoA (cofactor of 2-oxoglutarate dehydrogenase) in alimentary deficiency of vitamins B3 and B12 and high protective activity of PA+succinate complex in reperfusion (reoxygenation) syndrome, manifested by activation of GABA shunt and weakening of OS in CNS [Bashun, Kanunnikova et al., 2003]. Conclusion: neuroprotective properties of the system of CoA biosynthesis are realized through antioxidant defense mechanisms, heme metabolome and alternative stabilization of succinyl-CoA availability in the mitochondrial compartment of the CNS, which suggests a targeted nature of prevention and therapy of neurodegenerative diseases.

Keywords: coenzyme A, heme biosynthesis, iron-sulfur clusters, oxidative stress, neurodegeneration diseases

The Effect of Lowering Dose of Rituximab On The Neuromyelitis Optica Spectrum Disorder Relapse Rate During COVID-19 Epidemic Period

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Abstract

Background: COVID-19 was a viral infection first detected in China and quickly spread all over the world. On March 2020, World Health Organization declared a global pandemic. At the beginning of the pandemic, clinicians encountered the challenge of how immunosuppressive treatments would affect the course of COVID-19 In people with autoimmune diseases, such as Neuromyelitis optica spectrum disorders. NMOSD is an autoimmune astrocytopathy caused by inflammation in CNS. Major treatment in order to prevent relapse is disease-modifying therapies and includes immunosuppressive and immunomodulatory. Rituximab and ocrelizumab are wellestablished immunosuppressive in DMTs. Some reports suggested treatment with Rituximab may increase the risk of COVID-19 infection and itsmortality in NMOSD. On the other hand reducing the dose or delay in treatment may lead to relapses. Methods: In this study we will evaluate the relation between the dose of rituximab and relapse rate of NMOSD during epidemic. This is an observational study on 151 patients from whom 51 cases are seropositive. Some patients received full dose rituximab routinely (1000mg ,every 6 months), but the others treated with half dose during the epidemic. Results: The Pearson correlation coefficient (r) showed negative and significant relation (r: -0.19 ,p: 0.022) between amount of drug and number of relapses in seropositive group , but in seronegative cases there is not valuable relation (p: 0.367). Conclusion: Every change in rituximab dose or between doses interval in seropositive NMOSD patients can potentially increase rate of acute relapses and it leads to permanent disability. The more frequent evaluation of CD19, CD20 and CD27 level , and general clinical condition of the patient is considerable and patient should be watched carefully during dose reduction.

Biography

I am Roshanak Mehdipour , MD , Neurologist from Iran. I was born In March 1987. I studied medicine at Isfahan University of Medical Sciences and I graduated as a neurologist in 2017. I was post doctoral research fellow of neuroimmu-nology in Isfahan neuroscience research center between 2017 and 2020. My specific field of research is Neuromyelitis Optica (NMOSD) and also Multiple sclerosis (MS). I am the director and manager of NMOSD patients registry system in our referral MS center since 2015. Several articles in this area has been published by me. I had many presentations (oral / posters) in international scientific congresses. Now I am practicing as a consultant neurologist in a general hos-pital along with my research activities.

Alternative Approach to Cervical Disk Herniation in Young Adult. A Case Report

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Abstract

Background: Cervical disc herniation in young adults is usually caused by trauma or injury. Non-traumatic cervical disk herniation is quite rare. It could be presented with severe symptoms. Treatment approaches include conservative and surgical approach. In several cases, it is prone to spontaneous regression. Until today, however, there was no case treated fully with combined alternative approaches including reiki, homeopathy, gemmotherapy, and diamagnetic pump and physiotherapy. Case description: A 30-years old female was presented with progressing neck pain, radiculopathy, and numbness in her first two fingers of the right hand for the duration of one month. The clinical examination revealed reduced sensitivity and weakened muscle strength. Magnetic resonance imaging was obtained and showed a disk herniation at C5-C6 level with prolapse to the right foramen. Painkillers were used before the diagnosis and little to none after the diagnosis, as well as vitamin B-complex. The treatment was completely conservative with intensive sessions of physiotherapy, mainly with diamagnetic pump. Parallel to this, the patient was administered with homeopathic therapy, and gemmotherapy. Energy healing (reiki) was performed almost every day. After two-three months of constant alternative interventions, the patient is free of pain, numbness, or any sign of cervical disk herniation. Conclusion: Alternative healing is opening a new era in spine surgery. For centuries it was known to the community, either in the form of homeopathy, or as the Asclipian therapies with hands showed on variety of sculptures (similar to reiki). However, until today it was never used in case of surgery.