EPP0333

Protective effect of lithium pyruvate against oxidative damage to peripheral blood mononuclear cells

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Introduction: In recent years, there has been renewed interest in lithium therapy due to emerging evidence of the protective effects of lithium against neuronal death caused by a wide range of neurotoxic effects. Oxidative stress is a common pathway that is involved in various pathologies. In this regard, the development and study of new lithium compounds with combined antioxidant effects becomes relevant. Pyruvate has many potential benefits due to its positive effects on cellular metabolism.

Objectives: The purpose of this study was to study lithium pyruvate on blood cells of healthy donors under conditions of induced oxidative stress.

Methods: The study used blood from 20 healthy control group volunteers, aged 25 to 54 years. Venous blood was taken at baseline and then used for PBMCs extraction. After that cells were incubated during 24 hours in RPMI 1640 medium at 37°C and 5% carbon dioxide concentration. For oxidative stress induction hydroperoxide of trisubstituted butyl (HTB) was used in concentration of 50 μM. Cells were also incubated with lithium pyruvate in final concentration of lithium ions of 1.2 mM with or without HTB. Level of oxidative stress in culture was assessed by flow cytometer «Muse Cell Analyzer» (Merck Millipore, Germany) using «Oxidative stress» reagents kit (Merck Millipore, Germany). Statistical analysis was performed using the SPSS software, release 20.0 for Windows.

Results: Percentage of cells with reactive oxygen species (ROS) cultivated with HTB (65,33 (41,95-79,30) %) was statistically significant higher compared to intact cells (11,03 (7,93-15,53) %) (p=0.001). After addition of lithium pyruvate in culture statistically significant antioxidant effects were observed. In PBMCs incubated with HTB and lithium pyruvate statistically significant decreased percentage of cells with ROS (42,70 (16,73-58,70) %) (p=0.001)

Conclusions: A pronounced antioxidant effect of lithium pyruvate under induced oxidative stress on human peripheral blood mononuclear cells has been established. Lithium pyruvate can be considered as a promising psychotropic antioxidant for further experiments.

Disclosure of Interest: None Declared

EPP0334

Case series and Literature review – Clozapine Induced Transient Myocarditis. Clinical characteristics and outcomes

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Introduction: Clozapine is a second-generation atypical antipsychotic medication used in patients with treatment-refractory schizophrenia. Its use is limited due to its associated adverse effects, including myocarditis. These adverse effects may have variable presentations, such as myocarditis transient or persistent, and a generalized inflammatory process. Thus, clinical monitoring to inform accurate diagnosis is essential to avoid unnecessary discontinuation of clozapine, leading to psychiatric decompensation.

Objectives: To review clinical features of clozapine induced Myocarditis and accurately identify signs and symptoms attributed to be most specific for myocarditis and determine at what stage clozapine should be discontinued.

Methods: We conducted a literature review on PubMed, MeSH, google scholar and Mount Sinai's Levy Library using keywords, clozapine, drug related side effects, adverse reaction, myocarditis, treatment resistant schizophrenia. Review of two cases series was done.

Results: A review of 15 articles that addressed the cardiac complications of clozapine was performed. This review provides a base on variable clinical characteristics and outcomes of clozapine – induced Myocarditis. It showed patients who had myocarditis ruled out, demonstrated high prevalence of systemic signs of inflammation such as fever, malaise, tachycardia and elevated c-reactive protein. However, despite clozapine maintenance in most, this systemic response subsided without any intervention. A nonspecific inflammatory response is common when initiating clozapine, this inflammatory "clozapine storm' occurs within the first month of initiation and is not necessarily predictive of myocarditis. These patients were monitored closely. Those confirmed with clozapine- induced myocarditis using echocardiography and cardiac magnetic resonance imaging were managed with dose reduction, laboratory monitoring, vital signs check, with early initiation of beta-blockers without discontinuation of clozapine, with improvement in their laboratory results and vital signs. Those with progressive clinical signs of myocarditis required immediate cessation of clozapine.

Conclusions: We are proposing a critical need for a multidisciplinary team of psychiatrists, cardiologists and pharmacists collaborating to prevent premature termination of clozapine in cases of treatment-refractory schizophrenia. Our cases showed middle aged patients with treatment - refractory schizophrenia, presenting with symptoms suggestive of clozapine induced- myocarditis, few weeks after initiation. Clozapine was continued with close monitoring, as symptoms resolved. Though clozapine is associated with myocarditis, with proper knowledge on guidelines for monitoring patients, it can mitigate unnecessary discontinuation of clozapine in those patients.

Disclosure of Interest: None Declared

Psychosurgery and Stimulation Methods (ECT, TMS, VNS, DBS)

EPP0335

Gender differences in the effect of rtms with the H7-coil on physical and social anhedonia in schizophrenia spectrum disorder; a randomized, sham-controlled trial

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