Conclusions: The patient's presentation underscores the complexity of N2O-induced neuropsychiatric and hematologic conditions. The findings emphasize the need for thorough clinical evaluations, including psychiatric and neurologic assessments, and laboratory testing when N2O use is suspected. Future research should focus on early recognition and intervention, optimizing management strategies, and understanding the long-term prognosis of patients with N2O-induced psychosis and associated sequelae.

Disclosure of Interest: None Declared

EPV0074

Efficacy of Topiramate in Treating Methamphetamine Use Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Introduction: Methamphetamine use disorder poses a significant public health challenge, with few effective pharmacological treatments. Topiramate, an anticonvulsant, shows potential for treating various substance use disorders. This meta-analysis evaluates topiramate's efficacy in treating methamphetamine use disorder, focusing on abstinence rates and depressive symptoms.
Objectives: This review aims to assess the efficacy of topiramate in treating methamphetamine use disorder, specifically its impact on abstinence rates measured by negative urine tests for methamphetamine. Additionally, it evaluates topiramate's effects on depressive symptoms, quantified by Beck Depression Inventory scores.
Methods: A systematic search was conducted in Scopus, Web of Science, and PsycINFO in September 2024, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Included studies were peer-reviewed randomized controlled trials (RCTs) assessing topiramate's effects on individuals with methamphetamine use disorder. The analysis utilized a random-effects model, with the primary outcome being abstinence assessed through negative urine tests and the secondary outcome being depression scores from the Beck Depression Inventory.
Results: Three studies (n = 249) were included, comparing topiramate to placebo. The pooled risk ratio (RR) for the common effect model was 1.00 (95% CI: 0.94-1.07), indicating no significant difference between topiramate and placebo. Heterogeneity was low (I^2 = 2%, p = 0.36). Individual study risk ratios ranged from 0.43 to 1.09, with the largest study (n = 140) showing no effect (RR 1.00, 95% CI: 0.93-1.07). Two studies (n = 109) reported that topiramate tended to improve depressive symptoms relative to placebo, though not reaching statistical significance (mean difference = -2.52 (95% CI: -5.31 to 0.26).
Conclusions: For patients with methamphetamine use disorder, topiramate did not increase abstinence rates when compared to placebo, but showed a trend towards improving depressive symptoms. Although no statistically significant effects were observed, the trends provide a foundation for future research. Larger sample sizes, extended follow-up periods, and standardized outcome measures are needed to better evaluate topiramate's efficacy. Future studies should also explore dose-response relationships, combination therapies, and identify patient subgroups likely to benefit from topiramate, which may reveal clinically meaningful effects and enhance treatment options for methamphetamine use disorder.

Disclosure of Interest: None Declared

EPV0075

Effects of the anticonvulsant Galonal during long-term alcohol exposure

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Introduction: Galonal increases gamma-aminobutyric acid (GABA) neurotransmission in the brain by having a modulatory effect on neuronal GABAA-receptors (GABAA-R). The presence of functional GABAA-R on the surface of immune cells, in particular T-lymphocytes, which mediate modulation of the cell's functional activity has also been described. Chronic alcohol use is associated with significant T-lymphocytes dysregulation within the adaptive immune system. It suggests that synthetic GABAA-R ligand Galonal, similar to its effects on neuronal cells, may cause modulation of the functional activity of the lymphocytes, thereby influencing the intensity of the immune response.
Objectives: Considering the fact that GABAA-R proved to be the molecular targets of ethanol on the immune and nervous cells, we investigated behavior and immunomodulatory effects of the artificial GABA receptor ligand Galonal during long-term alcohol exposure to find new perspective pharmacological substances in the treatment of alcoholism.
Methods: Galonal (100 mg/kg) was administered in mice with 6-month 10% ethanol exposure (suspension of 1% starch mucus intragastrically) for 10 days, after which animal's alcohol consumption, behavior and immune parameters were estimated.
Results: After the course of Galonal administration a decrease in alcohol motivation and stimulation of exploratory behavior have been established in long-term alcoholized mice. An increase in the humoral immune response was also recorded, assessed by the absolute and relative numbers of AFC, to a level characteristic of healthy animals of the corresponding age. Significant stimulation of the cellular immune response, estimated by the DTH reaction and lymphocytes proliferative activity was also registered.
Conclusions: Galonal demonstrated positive neuroimmunomodulation effect during long-term alcohol exposure, therefore, its promising for clinical use in the treatment of alcoholism.

Disclosure of Interest: None Declared