

Possible Anti-Anhedonic Effect of Valproate in Mice Exposed to Chronic Mild Stress model

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Epilepsy is one of the most common neurological disorders characterized by recurring excessive neuronal discharge, exhibited by transient episodes of motor, sensory, or psychic dysfunction, with or without unconsciousness or convulsive movements. In addition epilepsy may be associated with neuro-degeneration presumably due to abnormal lipid peroxidation [1,2]. On the other hand, co-morbid depression is common in patients with epilepsy. A review of available studies [3] suggested a high prevalence of mood (affective) disorders especially major depression (8%-48%) followed by anxiety (5%-32%) in patients with epilepsy.

Can the antiepileptic drug, sodium valproate induce beneficial effects on reduction in sucrose consumption and immobility in forced swimming test of stressed anhedonic albino mice. Additionally, can it has the ability to increase the activity of important anti-oxidant enzymes in hippocampus of these mice that would help in stopping the oxidative stress related to mood disorders.

Actually, these effects could have a contributing role in control of convulsions in stressed mice according to literature [4].

Accordingly, these questions need an evaluation of sucrose consumption and duration of immobility after exposure to CMS-model for 6 weeks and forced swimming test respectively in mice treated with the anti-epileptic drug sodium valproate (administered in the last 3 weeks of the model) and compare the results with that obtained from stressed untreated albino mice.

Besides the above measured parameters, there is a strong need to measure the activities of the selected antioxidant enzymes catalase and glutathione peroxidase enzymes in hippocampus after 3-weeks of administration of the tested drug to the tested mice [5,6].

However, valproate exerted an inhibitory effect on DA-induced hyperactivity similar to that produced by GABA. GABA plays an

important role in depressed mood as its reduction in CSF was reported in depressed patients and elevated when these patients were treated with selective serotonin reuptake inhibitors. These findings may suggest a possible beneficial role of valproate in improving depressed mood [7,8]. However, in earlier studies, valproate was injected into the nucleus accumbens and its effect on GABAergic enzymes was controversial [9]. These results open the way to further investigations to reach a proper and well-defined conclusion.

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