

Evaluation of anxiolytic effect of zonisamide and its combination with bupropion in mice

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Anxiety disorders are common but serious illness that affects quality of life in humans. There is a need for safe and effective anxiolytic drugs. In the present study, we evaluated the anxiolytic effect of zonisamide and the combination of zonisamide with bupropion in male Swiss Albino mice. Animals were randomized to six different groups and received intraperitoneal treatment of normal saline: 1 DMSO (80:20), zonisamide (5 mg/kg), zonisamide (10 mg/kg), hydroxyzine (3 mg/kg), bupropion (10 mg/kg), zonisamide+bupropion (5 mg/kg), respectively. The animal models of anxiety were performed 30 min after treatment and relevant parameters were evaluated. Estimation of dopamine and serotonin levels in hippocampus, cerebral cortex, and whole brain were done using HPLC with FD method. The zonisamide treated group at 5 and 10 mg/kg was effective in *in vivo* models as compared to the control groups. It was more effective particularly at 5 mg/kg dose. Zonisamide showed significant increase in dopamine and serotonin levels in different brain regions than hydroxyzine, bupropion and combination treated groups. Overall, the anxiolytic effect was better with zonisamide monotherapy than other treated groups in the treatment of anxiety.

Keywords: Anxiety disorders, Biphasic effect, Brain monoamines, Elevated plus maze(EPM), Hydroxyzine

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