

Cognitive effects of acute restraint stress in male albino rats and the impact of pretreatment with quetiapine versus ghrelin

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Stress is any condition that seriously affects the balance of the organism physiologically and psychologically. Stress activates the hypothalamic-pituitary-adrenal (HPA) releasing glucocorticoid hormones that produce generalized effects on different body systems including the nervous system. This study aimed to investigate the effect of acute restraint stress (ARS) on cognitive performance by measuring spatial working memory in Y-maze, behavior (anxiety and exploratory behavior) in open field test, expression of synaptophysin and glial fibrillary acidic protein (GFAP) in the hippocampus by immunohistochemistry, dopaminergic receptors (D2) in the basal ganglia by gene expression and comparing the effect of ghrelin and quetiapine on the previous parameters. 36 adult male albino rats constituted the animal model of this work and have been divided into six groups: control group, control group exposed to ARS, quetiapine group, quetiapine group exposed to ARS, ghrelin group and ghrelin group exposed to ARS. We demonstrated more neuroprotective effect for quetiapine compared to ghrelin on stress response, anxiety behavior and working spatial memory impairment due to ARS.

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