[Abstract:0743] Mood disorders

Antidepressant-like effects of gallic acid: dual effect on serotonergic and catecholaminergic neurotransmissions

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Objective: Gallic acid (GA), 3,4,5-trihydroxybenzoic acid, is a phenolic acid derivative and a natural polyphenol found in tea leaves, grapes, berries and plants like Thuja, Quercus, Rhus, Camelia. Several studies have described the antidepressant-like activity of GA. However, pharmacological mechanisms underlying this effect have not yet been clarified. Therefore, in this study, we planned to investigate possible mechanisms underlying the antidepressant-like activity of gallic acid (GA).

Methods: Adult BALB/c female mice, weighing 30–35 g, were used for the experiments. The putative antidepressant-like effect of GA (30 and 60 mg/kg) was investigated using modified forced swimming test (MFST) and tail suspension test (TST), two predictive methods for screening antidepressant effects. Further, spontaneous locomotor activity of the mice was evaluated by activity cage tests. The experimental protocol was approved by the Local Ethical Committee on Animal Experimentation of Anadolu University, Eskisehir, Turkey.

Results: Obtained data demonstrated that GA, administered at 60 mg/kg dose, decreased the immobility time of mice in both in TST and MFST. In MFST, GA, administered at the same dose induced a significant prolongation in both of the swimming and climbing time of mice with respect to the control values. These findings clearly indicate the antidepressant-like activity of GA administered at 60 mg/kg. A 30 mg/kg dose was ineffective in both tests. In the activity cage tests, GA did not induce any significant alteration in the total number of spontaneous locomotor activities. This finding indicates that the effect of GA reducing the immobility time in the TST was not accompanied by changes in locomotor activity, as assessed in the activity cage tests. The anti-immobility effect of GA in the TST was reversed with administrations of α-methyl-para-tyrosine methyl ester (AMPT), an inhibitor of catecholamine synthesis (100 mg/kg, i.p.) and with p-chlorophenylalanine methyl ester (PCPA), an inhibitor of serotonin synthesis (100 mg/kg, i.p., administered for 4 consecutive days). These results suggest that the anti-depressant-like effect of GA is mediated through an increase in not only serotonin but also catecholamine levels in the synaptic cleft. However, other mechanisms, for example mechanisms involving the opioidergic, GABAergic, glutaminergic, and nitrergic systems, may also have contributed to the anti-depressant-like action observed in the present study. Therefore, other possible mechanisms should also be investigated with further studies.

Conclusion: To our knowledge, this is the first study to show findings that indicate the mechanisms underlying depressant-like effect of GA. This phenolic compound may become a new antidepressant drug candidate with a dual mechanism of action, if clinical studies validate its therapeutic effect in humans.

Keywords: gallic acid, antidepressant, mechanism of action

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Marriage stories of individuals with bipolar disorder in relation with the illness

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Objective: Bipolar disorder is a chronic psychiatric disorder with variable course and significant impact on patients' social, occupational, marital and general functioning. The mood symptoms of individuals with bipolar disorder are determined by multiple effects including biological and environmental factors. For example, the quality of social support influences both relapse rates and relapse polarity of the disease, and marital relationship is considered the most important source of social support. Marital function among those who are married is often impaired and they have higher divorce rates. Several studies in the literature indicate that being married has a positive impact on functionality, and also reduce the number of episodes and increases adherence to treatment. Earlier studies tend to focus on how marriage affects the illness. The focus of our study is to investigate whether the bipolar disorder stimulates the number of marriages, how this illness impacts on decisions like getting married and divorced, and what the relationship between marriage and clinical features