Ginkgo biloba extract diminishes stress-induced memory deficits in rats

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Abstract:
Exposure to chronic restraint stress in rats and psychosocial stress in humans has been shown to alter cognitive functions such as learning and memory and has been linked to the pathophysiology of mood and anxiety disorders. Antianxiety or sedative agents used in the management of stress have several disadvantages and undesired effects. Therefore, in this study, we investigated efficacy of a natural medicine, the extract of Ginkgo biloba (EGB 761), in prevention and treatment of the post-stress memory dysfunctions. The results showed that chronic restraint stress (2 h for 21 days) or an 'equivalent' dose of exogenous corticosterone (5 mg/kg) impaired nonspatial memory as measured by an object recognition test. In control rats, EGB 761 improved spatial and nonspatial memory in Morris water maze and object recognition tests. Preventive doses of EGB 761 (100 mg/kg) normalized cognitive deficits, seen in rats chronically stressed or treated with corticosterone in object recognition test, and improved memory processes in these rats measured by Morris water maze test. There was no influence of our treatments on locomotor exploratory activity and anxiety measured in open field and elevated 'plus' maze tests, making a contribution of unspecific motor and emotional effects of the used drugs to their performance in the memory tests improbable.

Key words: Ginkgo biloba, memory, object recognition, Morris water maze, restraint stress