Original Paper

Additive effects of trans-resveratrol and imipramine to reduce depressive symptoms in the forced swimming test in mice

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Abstract

Background and Objective: Resveratrol is a phenolic herbal compound which has been proposed as antioxidant in combinational therapy of diabetes, cancer and some neurodegenerative diseases. This study was done to evaluate additive effect of trans-resveratrol and imipramine to reduce depressive symptoms in the forced swimming test in mice.

Methods: In this experimental study, 56 Swiss Webster male mice were randomly allocated into 6 groups including negative control group (normal saline), positive control (imipramine 10 mg/kg/bw), experimental groups; trans resveratrol (10 mg/kg/bw), Imipramine (10 mg/kg/bw) and mixtures (with ratio of 1:1) of resveratrol with imipramine (2.5 mg/kg/bw, 5 and 10 mg/kg/bw), intraperitoneal. The forced swimming test has been done for all groups. Through swimming of animals in water, the immobilization times of animals as depressive symptom were recorded.

Results: The immobilization times significantly reduced in animals which were received imipramine 10 mg/kg/bw in compare to control group (P<0.05). The immobilization times of animals were received resveratrol injection 10 mg/kg/bw with imipramine 10 mg/kg/bw was determined which it was significantly effective than imipramine10 mg/kg/bw, alone (P<0.05). The antidepressant effectiveness of resveratrol injection 5 mg/kg/bw is similar to resveratrol (2.5 mg/kg/bw) with imipramine (2.5mg/kg/bw). is similar to resveratrol (2.5 mg/kg) with imipramine (2.5 mg/kg/bw) (P<0.05). Also, antidepressant effect of intraperitoneal administration of resveratrol 10 mg/kg was significantly more than imipramine 10 mg/kg/bw (P<0.05).

Conclusion: According to additive effect of imipramine with resveratrol we can suggest resveratrol in combinations with other antidepressants to lower their doses and related side effects of chemical drugs.

Keywords: Depression, Resveratrol, Imipramine, Forced swimming test, Mouse

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