Anti-anxiety activity of South marshmallow in the elevated plus-maze test

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Background and Aim: Anxiety disorders are marked by excessive fear and avoidance, often in response to specific objects or situations, in the absence of true danger. These disorders are widely treated with the GABA-A agonists, benzodiazepine drugs. Although these drugs are relatively safe, they produce many undesirable side effects such as respiratory and cognitive problems. Besides, some of medicinal plants have been traditionally used as a nerve calming remedy (sedative), such as South marshmallow (Alcea anchem) from Malvaceae family. Flowers of South marshmallow are used as medicine for prophylaxis and therapy of diseases and discomforts of the respiratory and the gastrointestinal tracts, menstrual disorders, urinary complaints, ulcers and, inflammations. We hypothesized that South marshmallow may have anti-anxiety effect, due to the following reasons. Firstly, it has been used traditionally as a sedative agent and, secondly, the plant contains some neuroactive phytochemicals such as flavonoids, which have affinity for the central benzodiazepine receptors. Therefore, the present study was designed to evaluate possible anxiolytic effect of its aqueous extract of flowers of South marshmallow in rats.

Methods: Anti-anxiety effect was assessed using the elevated plus-maze test (EPM). Male Wistar rats were treated with saline (control), graded doses of aqueous extract of Alcea anchem (at doses of 35, 70, and 175 mg/kg) or, diazepam (positive control) at dose of 1.2 mg/kg. Drugs were dissolved in saline, and all agents were injected intraperitoneally (IP). Animals were subjected to behavioral assessment in the EPM, 1 h after drug administration. Data were obtained using