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Investigation of effects of total methanolic extract and alkaloid extract of *Vinca minor* on spatial memory retention in the MVM model

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Background and Aims: Vinca minor L. a member of Apocynaceae, is native to northern Spain, western France, central and southern Europe, and Caucasus. In folk medicine, it is used internally for circulatory disorders, cerebral circulatory important and support for the metabolism of the brain. Vincamin, the major alkaloid of Vinca minor that makes 25-65% of indole alkaloids of this plant, is used for the prevention and treatment of cerebrovascular insufficiencies and disorder. Considering that it has been recently cultivated for the first time in Iran, there is no phytochemical and pharmacological report on Vinca minor cultivated in iran. In the present study, we investigated a time course of the effects of total methanolic extract and alkaloid extract of Vinca minor, administered systemically, on spatial memory retention in the Morris Water Maze in male rats.
Methods: A total extract of Vinca minor (4, 8 and 16 g/kg) was administered to 3 groups of rats by gavage for 1 week, respectively. In separate experiments, three doses of the alkaloid extract (60,120 and 180 mg/kg) were administered by gavage to three groups of rats, respectively for 1 week. following these administrations, all animals were trained for 4 days and then test trials were conducted 48 hours later
Results: In the first day in both extracts there wasn't any significant difference in escape latency and traveled distance, compared with their respective control groups ($p>0.05$) but from second day and increasing concentration, significant reduction was visible in escape latency and traveled distance, compared with their respective control groups($p<0.05$).
Conclusions:.Results from the time-course (with the total Vinca minor extract) and dose-response (with alkaloid extrac) analyses showed that both total extract and alkaloid extract cause a significant reduction in escape latency and traveled distance compared with their respective control groups.

Keywords: *Vinca minor* L., MWM model; Spatial memory