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Satureja bachtiarica methanolic extract ameliorate beta amyloid induced memory impairment

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Background and Aims: Beta amyloid(Aβ) deposition is the major hallmark of Alzheimer's disease (AD) and plays critical role in neuronal death and cognitive dysfunction that was observed in AD. Satureja bachtiarica is a medicinal plant from the Lamiaceae family which were widely used in Iranian traditional medicine .The aim of present study was to investigate possible protective effects of Satureja bachtiarica methanolic extract on Aβ induced spatial memory impairment in morris water maze (MWM) that is an animal model of Alzheimer disease.
Methods: Aerial parts of the plant were extracted with ethyl acetate and methanol, respectively, by percolation at room temperature and methanolic extract was used for this experiment. Rats were randomly divided in following groups: control, Aβ injected, Aβ injected + extract (10, 50 and 100 mg/kg) and extract (100mg/kg) groups. Pre- aggregated Aβ was injected into hippocampus of each rat bilaterally (10µg/rat) and MWM task was performed 14 days later to evaluate learning and memory function. Methanolic extract was administered intraperitoneally for 19 consecutive days after Aβ injection. Animals were trained for four consecutive days in MWM and the probe test was done in the fifth day.
Results: animals in Aβ injected group showed significantly increased escape latency in training days which represent learning impairment. Administration of extract (100mg/kg) could significantly ameliorate Aβ induced learning impairment but extract in 10 and 50 mg/kg could not improved learning impairment also administration of extract(100mg/kg) alone did not affect rat performance in MWM in comparison of control group.
Conclusions: Our findings represent that Satureja bachtiarica methanolic extract can improved Aβ induced memory impairment and can be a candidate for treatment of Alzheimer disease.

Keywords: *Satureja bachtiarica*; Beta amyloid; Alzheimer's disease; Memory impairment