The effect of hydroalcoholic extract of *Cyperus rotundus* rhizome on memory and learning in Streptozotocin-induced rat model of Alzheimer's disease

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Abstract

Background and Purpose: Alzheimer's disease is one of the most important neurodegenerative diseases resulting in free radicals and oxidative stress production. Since *Cyperus rotundus* plant contains anti-oxidant components, the effects of *Cyperus rotundus* tuber hydroalcoholic extract on learning and memory improvement in the Alzheimer model rats was investigated.

Methods and Materials: In this experimental research, Intracerebroventricular streptozotocin injection in the rats created a suitable model of Alzheimer. Rats were divided into 7 groups: control, sham, Alzheimer, Alzheimer + extract treated, and normal + extract treated groups. Treated groups received the extract with dosages of 100 and 200 mg/kg in 21 days. The rate of rat's learning and spatial memory was investigated using passive avoidance learning and Y-maze methods.

Results: In the rate of IL (Initial Latency), there was no difference between groups ($p>0.001$). There is a different meaning in the rate of STL (Step through Latency) between different groups ($p<0.001$). Considering the Y-maze examination, there was no significant difference between the groups ($p>0.001$).

Conclusion: Results of STZ injection showed significant decrease in memory and learning. Treatment with *Cyperus rotundus* extract could increase the capability of consolidation and recall.

Keywords: Alzheimer, Streptozotocin, *Cyperus rotundus*, Memory and Learning, Shuttle Box, Y-Maze.

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