

Original Paper

Effect of aspirin on learning and memory impaired by pentylentetrazole kindling in male Rat

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Abstract

Background and Objective: In recent years many studies have reported that aspirin could have beneficial effect on learning and memory in different diseases of central nervous system. The objective of present study was to explore the effect of aspirin on learning and memory of Rats in pentylentetrazole kindling model.

Materials and Methods: In this experimental study Rats were divided randomly into six groups (n=8). Animals in three groups received aspirin (15 and 30 mg/kg, orally) and saline, one week before and during induction of kindling, respectively. Kindling was induced in these groups by administration of pentylentetrazole (PTZ: 40 mg/kg, ip). Two groups of animals received only aspirin 25 and 30 mg/kg orally. Other group received only saline throughout the study and served as health control group. After induction of kindling the learning and memory of Rats was tested in shuttle box. Study was divided to three stages of adaptation, acquisition and retention test. Initial Latency (IL) time before electrical shock and Step through latency (STL) time, 20 min or 24h after acquisition was evaluated as learning and memory index. Locomotor activity was also evaluated in open field test.

Results: PTZ kindling significantly decreased Initial Latency and Step through latency time, 20 min or also 24h after acquisition, and aspirin significantly increased these times in kindled animals ($p < 0.05$). Aspirin also had no significant effect on locomotor activity of animals.

Conclusion: This study showed that the administration of aspirin to kindled Rats improved learning and memory impairments induced by pentylentetrazole kindling.

Keywords: Aspirin, Kindling, Pentylentetrazole, Learning, Memory, Shuttle box

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