

## INFLUENCE OF NMDA, A POTENT AGONIST OF GLUTAMATE RECEPTORS, ON BEHAVIORAL ACTIVITY IN 4-WEEK STREPTOZOTOCIN-INDUCED DIABETIC RATS

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The study was designed to investigate the effects of NMDA receptor agonist on the behavioral activity in rats with experimental diabetes mellitus (DM). Experimental diabetes was induced by a single intravenous injection of streptozotocin at a dose of 65 mg/kg dissolved in saline. Rats treated with saline (0.9%) served as control. Stimulation of the NMDA glutamatergic receptor was evoked by *ip* injection of an agonist N-methyl-D-aspartate acid (NMDA), at a dose of 15 mg/kg 30 min before the experiments. Memory motivated affectively was evaluated in the passive avoidance responses. Possible influence of the treatment on locomotor and exploratory activity was tested in open field test. Moreover, the working memory was evaluated in the T-maze test.

We observed that NMDA given alone did not have significant influence on motor activity in control rats except for the number of bar approaches, while in rats with DM NMDA significantly increased motor activity in the open field test. In rats with experimental diabetes, NMDA increased acquisition, but it did not have any significant influence on consolidation and recall of a passive avoidance responses. NMDA at the tested dose had no influence on a passive avoidance latency in control rats. In the T-maze test, NMDA increased working memory but only in diabetic rats.

**Key words:** NMDA, diabetes, behavior, rats

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