Evaluation of chronic tramadol administration on memory of rat

Leila Kanaani
Azad University, Iran

The impairment of memory functions is very common in patients with chronic pain, particularly in patients with existing cognitive disorders. In this study, we investigated the effects of chronic exposure of tramadol, which could impair the memory evaluated in the ORT. For this purpose, this study was carried out on 15 (3×5 group) male Wistar rats (weighing 220±20 g). The animals had free access to food and water before the experiment. They were kept at a constant room temperature (22±1C) under a 12-12 h light/dark cycle, while using an apparatus consisting of a circular arena, Then, TRM was dissolved freshly in distilled water. The animal was received gavage 50 mg/kg daily for 30 days according to the respective chronic treatment groups. Each respective control group took distilled water in the same manner. The administration of drug was done between 8-22 am every day. To check the memory in the scheme of Task Recognition Object, a test was employed to detect objects based on the animal's natural desire to explore new object in front of a familiar object. The results showed that the physiological function of GABA and inhibitory effect of ACh release of TRM in cholinergic activity can indicate some negative behavioral effects of TRM. In summary, our research confirms that the low doses in chronic exposure of tramadol could impair the memory evaluated in the ORT. The agonistic property of Tramadol for GABA receptor, disruption of normal GABA physiological function and the inhibitory effect of Tramadol on the ACh release and the cholinergic activity could be supposed as some possible mechanism of negative behavioral effect of Tramadol. However, more molecular studies are needed for the declaration of the exact mechanism of the nervous system in the future.

Speaker Biography

Leila Kanaani has completed her MSc of Medical Toxicology at Azad University, Shahreza, Iran in 2016. Her specialist training involved study, research and teaching of Nutrition, Diet Therapy and Medical Toxicology. She has authored numerous public international and national works and provides presentations on topics related to the Nanodrug Delivery. Her expertise is in Medical Toxicology field and special interest in Nanodrug Delivery. She has experience of work in the Nutrition and Diet Therapy in Iran.

e: lk_rd@yahoo.com

Notes: