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Evaluating the neurotoxic effects of stanozolol on male rats' hippocampi: dose stanozolol cause apoptosis?

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Anabolic-androgenic steroids make a cluster of hormones consisting natural male hormone, testosterone and its synthetic derivation. One of the most appealing drugs of this family is stanozolol which is abused by athletes in high doses for improving their energy, appearance and physical size. It is proved before not only dose stanozolol cause changes in behaviour; it also has various physical effects. Researches have been conducted on its neurotoxic impacts on CNS most of which are psychological-based. This study was performed to examine the apoptotic effect of stanozolol on different parts of rat hippocampus. For this experiment, 16 male Wistar rats were divided randomly and equally in two groups (control and experimental). The experimental group received subcutaneous injections of stanozolol (5 mg/Kg/day) for 28 days uninterruptedly. The control group was treated with normal saline in the same period. Then, animals were anesthetized and their brains were extracted. After routine procedures, the brain sections were stained with toluidine blue and TUNEL for dark neuron and apoptotic cell detection respectively. In order to compare the groups, the mean numbers of TUNEL-positive cells and dark neurons per unit area were calculated with stereological methods and analysed by SPSS software. Our histopathological examination revealed the num¬ber of dark neurons and apoptotic cells in the CA1, CA2, CA3 and dentate gyrus of hippocampus have significantly increased in stanozolol group compared to the control group. Therefore, abusing of stanozolol may induce dark neuron and apoptotic cell formation in different regions of hippocampus and cause memory disorders.

Biography

Faezeh Nemati Karimooy has been graduated as an MD from Mashhad Univeristy of Medical Sciences, Iran. After graduation she immediately started to work as a GP and the Head of a general health center in Taybad city. Along with her GP career, she was engaged in neuroscience researches. She has also written a book in Persian- translation and complition- named *"Sleep and Its Disorders"* which is going to be published soon. As an MD, she is also interested in emergencies and collaborated in writing a book in Persian on procedures in emergency medicine.

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