عنوان مقاله:

The Role of Aromatase and Castration on Spatial Learning and Memory Changes by Nandrolone

محل انتشار:

فصلنامه فیزیولوژی عصبی روانشناسی, دوره 4, شماره 4 (سال: 1396)

تعداد صفحات اصل مقاله: 10

نویسندگان:

.Zahra Salimi - *Department of Biology, Faculty of Science, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Farshad Moradpour - *Fertility and Infertility Research Center, Health Technology Institute, Kermanshah University of .Medical Sciences, Kermanshah, Iran*

.Lotfollah Khajehpour - *Department of Biology, Faculty of Science, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

.Ahmad Ali Moazedi - *Department of Biology, Faculty of Science, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Ali Pourmotabbed - *Department of Physiology, Faculty of Science, Kermanshah University of Medical Sciences, .Kermanshah, Iran*

خلاصه مقاله:

Background: The abuse of anabolic androgenic steroids is associated with changes in learning and memory function. Objectives: Nandrolone is one of the most popular anabolic androgenic steroid compounds abused by adolescents. Previous studies suggested that nandrolone changes learning and memory; however, the underlying mechanism is unclear. Therefore, the present study evaluated the role of P450 aromatase and castration on spatial learning and memory changes induced by nandrolone in adolescent male rats. Materials and Methods: This study used the Morris water maze to evaluate spatial learning and memory. The experimental groups received DMSO as control groups and different doses of nandrolone (10, 30 and 60 µg/ 2.5 µL), anastrozole (2.5, 5 and 10 µg/ 2.5µL), and anastrozole (2.5 µg/ 2.5 µL) + nandrolone (60 µg/ 2.5 µl) all days before the training. The rats of ninth and tenth groups were castrated and treated with 2.5 µL of DMSO and nandrolone (60 µg), respectively for 4 days. Results: Both nandrolone and anastrozole decrease in escape latency and traveled distance ($P<0.05$). Furthermore, the escape latency and traveled distance in the group which received anastrozole (2.5 µg) + nandrolone (60 µg) were significantly lower than that of the control group ($P<0.05$). Additionally, castration had no effect on escape latency and traveled distance, but it abolished the improvement effect of ND. Conclusion: Nandrolone improved spatial learning and memory, but castration could abolish nandrolone-induced spatial learning and memory improvement. These .results indicate the effect of nandrolone on learning induced by changes in gonadal function

کلمات کلیدی:

Nandrolone, Spatial memory, Anastrozole