

Original Paper

Effect of long term administration of tamoxifen on memory in male rat

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Abstract

Background and Objective: Tamoxifen is one of the selective estrogen receptor modulators that exerts estrogen / anti-estrogen effects in various tissues. This study was done to evaluate the effect of chronic administration of tamoxifen on spatial memory and passive avoidance task in adult male Wistar rats.

Methods: In this experimental study, 48 adult male Wistar rats were randomly divided into control, sham and tamoxifen groups. Animals in sham and tamoxifen groups were received tamoxifen solution and tamoxifen (400mg/kg/day) orally for 35 consecutive days. At the end of treatment, spatial learning and memory of animals was assessed using the Morris water maze task and passive avoidance memory was examined using the shuttle box.

Results: The time spent and distance moved to reach the platform, significantly increased in tamoxifen group compared to controls ($P<0.05$). In addition, the time spent and distance moved in the target quadrant (in the probe test) significantly reduced in tamoxifen group in compared to controls ($P<0.05$). In passive avoidance task, tamoxifen significantly decreased the time of the entrance to the dark room compared to control animals ($P<0.05$).

Conclusion: Long-term administration of tamoxifen impairs spatial learning and memory and passive avoidance memory in rats.

Keywords: Tamoxifen, Spatial learning, Spatial memory, Avoidance memory, Rat

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