

عنوان مقاله:

Effect of Physical Activity on Symptoms of Morphine Addiction in Rats, after and before of Lesion of the mPFC Area

محل انتشار:

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خلاصه مقاله:

Objective(s): Drug addiction is one of the fastest growing social problems that researchers, for many years, have been trying to find proper strategies for its prevention and treatment. Short-term physical activity is considered as acceptable for the treatment and prevention of addiction. On the other hand, prefrontal cortex is known to be responsible for many of the complex behavioral responses, especially those relevant to addiction and drug abuse. In this study, the effects of short-term physical activity (treadmill running) on withdrawal symptoms in rats, with or without medial Prefrontal Cortex (mPFC) area was evaluated. Materials and Methods: In this experimental study, male Wistar rats, weighing ۲۵۰-۳۰۰ g. Were selected and divided into four groups: control, sham, test1 and test ۲ groups, with one group having a surgery (test ۲). In order to study the effects of short-term physical activity, we employed a treadmill with the adjustable speed of ۱۷ m/min, and a ۱۵% incline. Following the injection of three different doses of morphine (۱۰, ۲۰ and ۴۰ mg/Kg) for ۹ days, treadmill running was completed on the tenth day and then the symptoms of addiction were evaluated. Results: Administration of morphine as aforementioned, and treadmill running on rats with mPFC area, significantly alleviated some of the symptoms and signs, such as, bruxism, cycling, body lift, licking, standing and scratching ($P < 0.05$). Therefore, there are noticeable differences in these symptoms between the exercise and morphine groups ($P < 0.05$). Conclusion : We propose that when using morphine mPFC plays an important role in the reduction of reward symptoms. Running lessens the effects of morphine. Moreover, short-term physical activity might decrease the tendency to use morphine in those with mPFC area, compared to other groups, especially with the one .undergoing an mPFC operation

کلمات کلیدی:

Exercise Morphine mPFC Withdrawal symptom

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