Original Paper

The role of morphine dependence on the level of anxiety in Rat

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Abstract

Background & Objective: The effects of acute and chronic exposures to opiate drugs on anxiety process are controversial. Acute morphine injection showed the beneficial effects on anxiety. Morphine withdrawal induced severe anxiety response in morphine dependence rats. Whereas, the effects of chronic administrations of morphine on anxiety process are less studied. Furthermore, this study was designed to assess the role of morphine dependence on the level of anxiety in Rat.

Materials & Methods: In this experimental study, Twenty male Wistar rats (250-300 gr) were made dependent by chronic administration of morphine in drinking water that lasted at least 21 days. Control groups received only sucrose in their water. This study utilized the elevated plus-maze model to evaluate anxiogenic-like behavior in rats. Four fundamental behavior patterns were recorded for 5 minutes: the time spent on open arms, the number of entries into open arms, stretched-attend posture and defecation. Immediately after test, the locomotor activity of each animal was tested by using an automated activity monitor system. The data were analyzed by independent t-test and two-way analysis of variance (ANOVA).

Results: Finding indicated that the time spent on open arms and the numbers of entries into open arms were significantly shorter in morphine dependence group than control group ($P<0.05$). Also, the numbers of stretched-attend posture and defecation were significantly higher in morphine group ($P<0.05$). Whereas, there were no significant differences between groups in locomotor activity.

Conclusion: This study showed that dependent rats may rapidly predispose anxiogenic- like effects in stressful conditions and without the effect on motor activity.

Keywords: Morphine dependence, Anxiety, Rat

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Received 14 Aug 2007 **Revised** 16 Feb 2008 **Accepted** 15 Apr 2008