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THE EFFECTS OF ASCORBIC ACID ON MORPHINE WITHDRAWAL SYMPTOMS IN RATS

A. Alijarahi, M. Amini, M.H. Esmaeili
Qazvin Azad University, Qazvin, Iran

Background: Recent studies indicate that the glutamatergic and Dopaminergic systems are also involved in morphine tolerance and dependence on morphine and in morphine withdrawal syndrome. Ascorbic acid (ascorbate) which is an antioxidant vitamin released from glutamatergic neurons and modulate the synaptic action of dopamine and glutamate as well as behavior. Since Ascorbate modulate the synaptic action of dopamine and glutamate, in this study the effect of Ascorbate on morphine withdrawal syndrome in rats has been investigated.

Objective: to determine the effects of Ascorbic acid on morphine withdrawal syndrome.

Methods : 30 Male rats (250-300gr) were tested in this study in two group , The first group as the control group received 3% sucrose in tap water(n=6) and the second group as the dependent group received morphine (0.1, 0.2, 0.3, 0.4mg/ml each one for 48h, and 0.4mg/ml remaining days to 21st days) and 3% sucrose in tap water (n=24) , this group divided in to 4 sub groups: ((1) morphine group, [2,3,4] morphine-Ascorbic acid groups which received AA (100,500,1000mg/kg I.P) every 48h and in the end (21st day) 30 min before naloxone administration for evaluation effects of AA on withdrawal signs.

Finding: Our results show that: Ascorbate (100, 500, 1000 mg/kg I.P) can greatly attenuates most of morphine withdrawal syndrome(but not all) dose dependently.