The Study of Destructive Effects of Exposure to WIN 55212-2, an Agonist of Cannabinoid Receptor, during Pregnancy on CNS Function of Rats' Offspring

Shabani, M.[1], Janahmadi, M.[2], Razavinasab, M.[3]

Abstract

Introduction: Cannabinoid consumption including hashish and WIN55212-2 during pregnancy has destructive affect on the development of fetus and the performance of CNS. **Method:** WIN treated group received daily 0.5 or 1mg/kg WIN suspended in 1% tween 80 saline (s.c.) at a volume of 1 ml/kg from days 5 to 20 of pregnancy. Third, fifth and seventh weeks after birth, the effects of maternal WIN consumption on infants body weight, mortality, histological changes, motor performance and memory function were assessed. **Results:** Prenatal WIN consumption associated with atrophy of cerebellum cortex in granular and Purkinje cells layers. WIN treatment of pregnant rats produced a significant decrease in the rearing frequency of the offspring, but significantly increased the grooming frequency at 22, 36 and 50 days of age. During the acquisition trials, approach latencies were not significantly different between all groups of rats (50 days old).When the trial was repeated 24 hours and seven days later (retention trial), the avoidance latencies of the WIN-exposed group were significantly shorter than those of control and sham animals. The mortality percent was increased significantly and litter size was decreased significantly in WIN (1mg/kg) treated rats compared to the control, sham and WIN (0/5 mg/kg) treatment groups. **Conclusion:** These findings suggest that prenatal exposure to WIN, cannabinoid agonist, induces possibly a long-term alteration on histological, motor performance and learning and memory parameters.

Key Words: hashish, win55212-2, fetal period, motor activity, memory

1. Author-in-chief: Assistant Professor of Kerman University of Medical Sciences. E-mail: Shabanimoh@yahoo.com
2. Professor of Shahid Beheshti University of Medical Sciences, physiology department
3. Researcher, Kerman neuroscience research center