ABSTRACT

THE EFFECT OF WATER IMMERSION RESTRAIN STRESS ON THE RISK OF NICOTINE ADDICTION IN MICE (*Mus Musculus*)

Indri Widya Wardani

Addiction is a chronically relapsing disorder caused by chronic exposure of an addictive substance that triggered an increase of dopamine neurotransmitter release in mesocorticolimbic dopaminergic in brain that produced the reward effect. The repetition of abnormally increase of dopamine release promotes neuroadaptation that changed the function of that brain and thus manifested on some complex behavior that typical in addiction. The chronic stress are known as a risk factor of vulnerability to addiction.

This research aimed to investigate the effect of stress on the risk of nicotine addiction in the acquisition, extinction and reinstatement stage. This research used 24 male Balb/C. Chronic stress induced by water immersion plus restrain stress method for seven consecutive days. The dose of nicotine used is 0.5 mg/Kg, indicating efficacy in reward effect.

The effect of stress on the risk of addiction was observed using the conditioned place preference paradigm. Statistical analysis showed that nicotine group and nicotine with stress could induce reward effect, they were no difference on reward effect of nicotine with or without stres. In the period of extinction training, nicotine group showed the extinction of reward effect on day 3 until day 7, whereas in the other stress groups, the extinction was delayed. In reinstatement test, the nicotine group showed an increase although not significant in terms of the time spent by mice in the nicotine-paired chamber after the induction of reinstatement with nicotine, the stress groups showed no reinstatement of the reward effect after repeatedly injection with nicotine.

Keywords : addiction, nicotine, stress, conditioned place preference.