ABSTRACT

THE POTENTIAL OF SSRI ANTIDEPRESSANTS TO OVERCOME MORPHINE ADDICTION

Himmah Ayu Muhimmah

Addiction is a brain disorder caused by chronic exposure of an addictive substance that triggered the release of dopamine neurotransmitter in mesocorticolimbic dopaminergic circuit that produced the reward effect. The controlled use of opioid drug may develop into compulsive drug use and addiction. Chronic opioid treatment tends to reduce basal 5-HT levels and cause the 5-HT supersensitive synapse. This research aimed to investigate the effect of SSRI antidepressants fluoxetine and paroxetine on the morphine addiction at acquisition stage. 3-4 weeks old male Balb/C mice were used. The effect of SSRI antidepressants fluoxetine and paroxetine on morphine addiction at acquisition stage was observed using conditioned place preference paradigm. The results showed that fluoxetine and paroxetine exhibited different effect on morphine addiction at acquisition stage. Morphine 10 mg/kg significantly increased the CPP score of mice. Fluoxetine 5 mg/kg and 10 mg/kg did not alter the CPP score of morphine injected mice. However, paroxetine 5 mg/kg and 10 mg/kg significantly decrease the CPP score of morphine injected mice. Therefore, it is suggested that paroxetine may potentialy attenuate the rewarding effect of morphine at acquisition stage.

Keywords: addiction, morphine, antidepressant SSRI, fluoxetine, paroxetine, conditioned place preference