ABSTRACT

Effect of Music on Neuron Proliferation of Hippocamus in Stressed Male Mice (*Mus musculus*)

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Stress caused by activation of the *Hypothalamic Pituary Adrenal Axis* in *hypothalamus*. Glucocorticoids are released in response to stressful experiences and serve many beneficial homeostatic functions. In the hippocampus, stress and glucocorticoids inhibit neuron proliferation. Music has ability to direct behavior toward calm, divert response limbic system. The present study was designed to investigate the effect of music on hippocampal neuron proliferation in stressed mice. Fourty male mice were divided into five groups randomly, which are normal, stress, stress with Javanese, Classical, and Rock music group. Music was given 1 hour after induction of stress. Mice were induced in stress condition by footshock with 0,6 mA on 60 volt. It was given daily for 10 minutes with 30 seconds frequency for 14 days. Parameter of stress was measured with Elevated Plus Maze (EPM) and Conditioned Place Preference (CPP) on day-0 (baseline) and 14th day. Mice brain was evaluated by *haematoxyllin-eosin* staining and antibody p53 immunostaining.

Javanese Pangkur laras pelog pathet nem and classical *Mozart Adagio from Divertimento* no.7 were significantly decreased stress condition in stress parameter of EPM and CPP ($p < 0.05$ for classical and $p < 0,01$ for Javanese). But different result was occur on rock *Slipknot feat Marlyn Manson* administration. It wasn't significantly decreased stress condition in stress parameter of EPM and CPP ($p > 0.05$). Javanese *Pangkur laras pelog pathet nem* and classical *Mozart Adagio from Divertimento no.7* also increased the number of cells in hippocampus. These finding of the present study indicate that *Javanese Pangkur laras pelog pathet nem* and classical *Mozart Adagio from Divertimento no.7* were significantly decreased stress condition on mice and increased neuron proliferation in hippocampus.

Keyword : stress, footshock, Javanese music, classical music, rock music, EPM, CPP, *hippocampus*, proliferation.