ABSTRACT

Effect of Music therapy on caspase-3 activity in male brain mice (Mus musculus) caused stress condition was induced by Footshock.

Stress is a disease that difficult to manage. Stress can make a disease to get worst or cause a disease. Stress caused by activation of the Hypothalamic Pituary Adrenal Axis in hypothalamus. Music has ability to direct behavior toward calm, divert response limbic system (especially the amygdale, thalamic and hypothalamus). If music can be pursued for the treatment of stress, the application will be easy, safe, and economical. The present study was designed to investigate the effect of music for decreasing a state of stress on mice. Forty mice were divide into five groups randomly, which are normal, stress, stress with Javanese, stress with Classical, and stress with Rock music group. Music therapy was given 60 minutes after induction by footshock. Mice were induce by footshock with 0.6 mA; 60 volt. Footshock was given daily for 10 minutes (30 seconds off and 10 seconds on) during 14 days. Parameter of stress was measured on day 0 (baseline) and 14th day with Elevated Plus Maze (EPM) and Conditioned Place Preference (CPP). Mice brain was evaluated by haematoxyllin - eosin staining. Advanced with analysis of immunohistokimia.

Javanese and classical music were significantly decreased stress condition in stress parameter of EPM (Javanese ($F_{(3,28)} = 6.260 ; p < 0.05$) and classical music ($F_{(3,28)} = 6.260 ; p < 0.05$)). But different result was occur on rock music administration, wasn’t significantly decreased stress condition in stress parameter of EPM ($F_{(3,28)} = 6.260 ; p > 0.05$). On CPP parameter of stress, all type of musics were significantly decreased stress condition (Javanese ($F_{(3,28)} = 7.249 ; p < 0.05$); classical ($F_{(3,28)} = 7.249 ; p < 0.05$) and rock music ($F_{(3,28)} = 7.249 ; p < 0.05$)). Javanese, classical and rock music also increased the number of cells in hypothalamus but has no effect on the recovery of injured neuronal cells. These finding of the present study indicate that javanese and classical musics were significantly decreased stress condition on mice. Music of javanese and classical also decreased the number of caspase-3 activity that expressed of antibody caspase-3 existing in hypothalamus. It wasn’t happened in rock music therapy. These finding of the present study indicated that Javanese and classical music were significantly decreased stress condition on mice.

Keyword : stress, footshock, Javanese music, classical music, rock music, EPM, CPP, hypothalamus, caspase-3,