ABSTRACT

Monosodium glutamat (MSG) has neurotoxic effects on some brain region, include hippocampus, when it was given to young animals systemically. MSG decreased a descrimination learning and defect study progress to maze trials. This study aims to know the effect of MSG administration subcutan to spatial memory and hippocampus damage.

This study used 32 male mice of 5 day old. The design was post test only control groups. Mice were then divided into 4 treatment groups. Control groups without MSG, then P1 and P2 groups treated with MSG (2 mg/g and 4 mg/g for five days continuelly 5^{th},6^{th},7^{th},8^{th} and 9^{th} day after birth). Parameters that used to measure spatial memory were a correct respon and error type A. Parameter that used to measure hippocampus damage was layer thick of hippocampus pyramidal cells of CA1 region. Data were analyzed using one-way ANAVA test and LSD test.

The results showed that MSG administration decreased correct respons and increased error type A on the P1 and P2 groups compared to control groups, significantly ($p<0,05$). These findings suggest that sistemic administration of MSG could impair spatial memory. Histological analysis of the hippocampus showed that MSG administration caused layer thickness of hippocampus pyramidal cells of CA1 region on the P1 and P2 groups compared to control groups, significantly ($p<0,05$). These findings suggest that sistemic administration of MSG could hippocampal damage.

Key words : monosodium glutamat, a correct respon, error type A, spatial memory, damage hippocampus