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Effects of exercise pre-conditioning on hippocampal cell proliferation
and memory in streptozotocin rat model for sporadic
Alzheimer's disease

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Physical activity is known to be associated with a reduced risk for dementia and Alzheimer disease. In the present study, we investigated the effects of exercise pre-conditioning on hippocampal cell proliferation and memory in intra-cerebroventricular streptozotocin induced Alzheimer's disease rats. Male (8 weeks old) Sprague-Dawley rats were used in the present study. Rats in the exercise pre-conditioning group were forced to run on a treadmill for 30 min daily for 14 days before lesioning. Rats model for Alzheimer's disease was made by injection of streptozotocin (STZ) (1.5mg/kg) into a bilateral intracerebroventricular (ICV). Passive avoidance test was performed on the 17 days after surgery in order to evaluate the memory ability. On the 18 days after surgery, the rat brains were removed, and 5-bromo-2'-deoxyuridine (BrdU) immunohistochemistry for the detection of cell proliferation were then performed. ICV STZ injected rats showed a severe deficit in memory associated with decreased cell proliferation in the hippocampus. In contrast, exercise pre-conditioning demonstrated significantly enhanced hippocampal cell proliferation and improved memory performance in ICV STZ rats. The present results have shown that exercise pre-conditioning enhances the memory of ICV STZ injected rats by increasing cell proliferation in the hippocampus. These results suggest that exercise pre-conditioning may reduce brain injury by increasing cell proliferation in Alzheimer's type dementia.

Key words : Exercise preconditioning; Intracerebroventricular streptozotocin; memory; Cell proliferation; Hippocampus

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Effect of dietary fermented defatted soybean meal additive on
growth performance in chicken (hen)

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Defatted soybean meal, a product resulting from the oil extraction process of soybeans, are the basis of a variety of soy products. Defatted soy flours are about 86% protein and have very little moisture. They contain no fiber, carbohydrates or fat. This study was conducted to investigate the utilization of defatted soybean meal as a feed in diet for chicken (hen) and to determine the effect of dietary fermented defatted soybean additive on performance in chicken(hen) for three weeks. The chicken was randomly allotted into 4 treatment; Control (Common feed), T1 (supplemented defatted soybean), T2 (supplemented fermented defatted soybean), T3 (supplemented fermented defatted soybean adding boiled paste soybean (seomoktae)). In total experimental period, feed conversion and diary feed intake were tend to be higher in T2 and T3 than others. Triglyceride and total cholesterol in serum of chicken was not significantly different in T3 (2015 and 118.8 mg/dl, respectively) with control (1596.6 and 113.6 mg/dl). But cholesterol in egg was decreased with lower significant difference in T1 (383.1 mg/100g) than control (439.1 mg/100g). The amount of linoleic acid of egg was highest in T2 (13.8 %/100g), oleic acid and DHA were no difference control (49.2 and 0.5 %/100g) with T2 (47.3 and 0.5 %/100g).

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