

ABSTRACT

The Effect of Physical Training in the Pattern of Blood Glucose Level on Depo Medroxyprogesterone Acetate (DMPA) Injected Rats

Chronic progesterone exposure impaired glucose tolerance due to muscle glucose uptake inhibition. The roles of physical training in preventing glucose intolerance during pregnancy were still unclear yet. This study was aimed to examine the effect of physical training on progesterone induced pseudo pregnant rats.

Thirty two rats were chosen and grouped in to control group (P1) and treatment group (P2). Control group was DMPA injected rats and treatment group was DMPA injected rats which also done physical training. DMPA injection was used to increase blood progesterone level similar with the peak of progesterone level during pregnancy. DMPA was administered by 20 mg intramuscularly injection. Treatment rats were trained by swimming 3 times a week at 50 % intensity of work capacity. Blood glucose levels were examined at 0, 11, 18 and 25 days of treatment.

There was not difference between control and treatment groups on glucose level until 11 days progesterone exposure, but physical training started to slow glucose level decrease during 11-18 days. Trained rats were also avoided from turning point phenomenon in the chronic progesterone exposure.

Physical training prevented turning point due to independent muscle from insulin signaling. These findings were restricted for 25 days examination and need to be verified by molecular and immunohistological examination.

Keywords: Physical training, blood glucose level, DMPA