

ABSTRACT

DECREASING OF THE BLOOD GLUCOSE LEVEL ON ISOTONIC AND ISOMETRIC EXERCISE

Mukhamad Rajin

The physical exercise is strong stimulus of glucose uptake into muscle skeletal, but the influence of isometric exercise to the blood glucose level hasn't been known. This goal of this research is to prove that isometric exercise by using the energy predominant of anaerobic glycolysis can decrease the blood glucose level more than with the isotonic exercise. It is proven that isometric exercise can decrease the blood glucose level more than isotonic exercise, it can be used as base that isometric exercise like taichi, yuga can be utilized as exercise to decrease the blood glucose level and functioning area rehabilitate and also as form of exercise for old person.

The research device used Randomized Control Group Pre test the - Post test the Design. Responder selected is student Program The Athletic Hygiene Study of STKIP Jombang amounting to 20 people, with the criterion: men, age 20-23 year, healthy and [there] no contraindication in doing the physical exercise. Responder are selected randomly, which then divided into two groups there are isotonic group as a group control and isometric group as a group treat, each amounting to 10 people. Independent variable of this research is isotonic and isometric exercise done for 30 minute, that executed after 30 minute postprandial with given by drink the sugar 100 g / 300 ml. dependent variable of this research is the blood glucose level which taken 30 minute postprandial before physical exercise and 30 minute after exercise (60 minute postprandial) that expressed with set of mg / dl.

From test of the same subject of ANOVA, isotonic exercise has value of significance $P < 0,05$ (0,000). Comparison between the fast blood glucose and blood glucose 60 minute pp has value of significance $P < 0,05$ (0,000). At isometric exercise have significance $P < 0,05$ (0,000), and comparison between the fast blood glucose and blood glucose 60 minute pp have value of significance $P > 0,05$ (0,778). From result test the Multivariate have value significance 60 minute postprandial is $P < 0,05$ (0,001), and Delta pp (30'-60' postprandial) is $P < 0,05$ (0,008).

The conclusion of this research is both isotonic and isometric exercise for 30 minute (60 minute postprandial) both of the same can decrease the blood glucose level 30 minute postprandial. Isometric exercise can decrease the blood glucose level more than with isotonic exercise. Therefore based on this research, isometric exercise can be developed to regulate and decrease the blood glucose level, can be developed in the field of rehabilitating and the exercise for old person.

Keyword: Isotonic exercise, isometric exercise, the blood glucose level of postprandial.