ABSTRACT

Diabetes is a disease characterized by the rise of blood sugar above normal. The number of people suffering from diabetes is increasing each year so it needs proper prevention. Chromium is a cofactor in improving the insulin action to transfer glucose into the cells. In addition to chromium, vitamin C and vitamin E also play a role in the prevention of diabetes, which serve as antioxidants that can capture free radicals and prevent a chain reaction so that it will not lead to cell damage. This study aims to determine the effect of chromium, vitamin C, and vitamin E on blood sugar and insulin of Wistar rats induced by alloxan. This research is a laboratory experimental using 20 male rats of Rattus Novergicus Strain Wistar type for 6 weeks. The independent variables consisted of five treatment groups namely normal diet, normal diet+1 g/hr chromium, normal diet+2 mg/day of vitamin C, normal diet+0.5 mg/day of vitamin E, normal diet+1 g/hr chromium+2 mg/day of vitamin C+0.5 mg/day of vitamin E. The dependent variable is blood sugar and insulin levels. To know the differences of each treatment, One Way Anova statistical test was used followed by Post Hoc Tukey HSD test with p <0.05. The results showed that there is a significant differences in blood sugar and insulin (p = 0.000) in the control group, 1, 2, and 4, but there are 3 groups in the control group showed that there is no significant difference in blood sugar (p = 0.718) and insulin (p=0.145). Thus, it can be said that the administration of chromium, vitamin C, and a mixture of chromium, vitamin C, vitamin E gives effect on blood sugar and insulin, while the administration of vitamin E alone gives no effect on blood sugar and insulin.

Keywords: Blood sugar, Insulin, Chromium, Vitamin C, Vitamin E