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 thatthere 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 m ixture 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