ABSTRACT

THE EFFECT OF ORAL CAFFEINE ON BLOOD GLUCOSE LEVELS OF WISTAR RATS (Rattus norvegicus) HYPERGLYCEMIA

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Introduction: The present study investigated the effect of caffeine on blood glucose, but it remained controversy. Some studies suggested that caffeine increase blood sugar levels through effects on decreased insulin sensitivity. While other studies suggested that caffeine can provide a protective effect against diabetes risk through increased insulin sensitivity. Therefore, it was necessary to conduct a study to determine the effect of oral caffeine on blood sugar levels of normal rat and hyperglycemia. Method: This study used 36 rat (Rattus norvegicus) that were divided into 4 groups. Normal and hyperglycemia untreated groups (K2 and K4) and normal and hyperglycemia treated groups (K1 and K3) which were orally administered with caffeine 3.22 mg/200 gram BW daily for three days. Blood glucose level were measured before and after treatment. The data analysis used paired t-test and effect size. Test result are considered significant when p<0.05. Result: The results showed that oral administration of caffeine had a significant effect on blood sugar levels in normal and hyperglycemic rat. The effect of caffeine on blood glucose in hyperglycemic and normal rat were 97.7% and 81.1% respectively. Conclusion: It was conclude oral administration of caffeine raised blood sugar levels in normal and hyperglycemia rat.

Keywords: Caffeine, blood glucose, hyperglycemia