Abstract

The effectiveness of Ampicillin as Gut microbiota manipulation in reducing blood glucose concentration.

Background: *The importance of showing the effectiveness of gut microbiota manipulation in reducing blood glucose concentration.*

Objective: *proving that High Fat Diet and Streptozotocin (HFD+STZ) diabetic rat model will significantly increase blood glucose concentration meanwhile also showing that Gut microbiota manipulation by Antibiotic administration of Ampicillin (20 mg/ kg BW) can reduce blood glucose concentration.*

Method: *Pure Experimental research method by using 18 wistar rat (Rattus norvegicus) divided into 3 groups: Control negative, HFD+STZ without antibiotic administration as control positive and HFD+STZ with antibiotic administration then utilize random glucose test as a parameter. Analysis of variance (ANOVA) was used to prove the difference between each group. The first ANOVA analyze the percentage of the increasing result of Random Glucose Test (RGT) 2 to RGT 1. The second ANOVA analyze the percentage of the decreasing result of Random Glucose Test (RGT) 3 to RGT 2*

Results:*Significant difference between HFD+STZ diabetic rat model group and negative control group (p value<0.001). Moreover, There is also a very significant difference between HFD+STZ with antibiotic administration group (Group C) and control positive group (Group B) which can be showed by p-value of 0.004.*

Conclusion: *HFD+STZ Diabetic rat model can significantly increase blood glucose concentration of Wistar rat. Moreover, Antibiotic administration of Ampicillin (20 mg/kg body weight) proved to be effective in reduction blood glucose concentration of* HFD+STZ *Diabetic wistar rat model.*

Keywords: *Gut microbiota*, *Ampicillin*, *Diabetic rat model* and HFD+STZ