FULL ABSTRACT

The Effects of Oral Plain Kefir Supplementation on Proinflammatory Cytokine Properties of the Hyperglycemia Wistar Rats Induced by Streptozotocin

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Objective: to validate the effect of plain kefir to immune response in streptozotocin induced hyperglycemia rats.
Method: the experiment was using random design methodology to the pretest – posttest control group of male and female in streptozotocin (STZ) induced hyperglycemia Wistar rats. Sample were divided randomly into four groups (1) insulin treated 0.76 UI/200 g body weight, (2) plain kefir 3.6 cc per day during 30 days, (3) positive control induced by STZ, (4) negative control normal group. Blood level were measured based on the full blood measurement from vena retroorbilitas 0.1 ml with microhematokrit in the first day (pre-test) dan 30th day (posttest) with enzymatic methodology. Immune response sitokin (IL1, IL6, IL10, TNFa) were measured with ELISA. Data were managed with One Way Anova, Mann Whitney and Duncan in a significant level at ($p < 0.05$).
Result: Kefir supplementation 3.6 cc per day had significantly effect on blood glucose sitokin proinflamasi (IL1, IL6, TNFa) and sitokin antiinflamasi (IL10). Statistical analysis showed glucose reduction -111, 00 + 44,23 ml ($p<0,001$) and sitokin proinflamasi IL1around -18,62 + 23,59 and IL6 -3,21 + 7,57 mU/mL ($p<0,001$) compare to control group. Though not significant, level of TNFa decreased 1,65 + 4,62 mU/mL, except control group.
Conclusion: Kefir supplementation significantly reduced blood glucose, level of sitokin (IL1, IL6) and decreased level of TNF-a, while level of IL10 increased if compare to control group.

Keywords: Probiotic, kefir, diabetes mellitus, hyperglicemia, streptozotocin, free radical, sitokin proinflamasi.