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The Fraction Area of Degeneration and Necrosis in The Kidney Tissue of The Hyperlipidemic Rats Model after The Intervention of Synbiotic Beverage from Kefir Milk and Date Palm Concentrate

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Objectives: This research aim is to know the effect of synbiotic beverage from kefir milk and date palm concentrate on the fraction area of degeneration and necrosis in the kidney tissue of the hyperlipidemic rats model.

Methods: Synbiotic beverage was made in accordance with good manufacturing product (GMP) standards procedure. Kefir milk (KM) is obtained from fermentation for 12 hours at room temperature between kefir grain and pasteurized cow milk with a ratio of 1:20 (100 grams of kefir grain: 2 liters of cow milk). after 12 hours the filtrate in the form of kefir milk is then combined with date palm concentrate (DPC) with ratio 50% KM: 50% DPC. This combination was re-fermented for 12 hours at room temperature. The design of this research is quasi-experimental used 15 rats divided into 3 groups (A+, A-, K). all groups were given fed ad libitum for 8 weeks. The A- and K groups were given quail egg yolk 5 ml/200 gr body weight (grBW) for 4 weeks. The next 4 weeks, group of K was given a synbiotic beverage with a dose of 5 ml/200 grBW. All rats were terminated to take kidney organ and was dissected transversally then stained using hematoxylin and eosin. The Fraction area of degeneration and necrosis was measured by ImageJ application.

Results: All data were expressed as mean standard deviation (%). The mean of fraction area (%) were 0.41 ± 0.12 (A+), 0.76 ± 0.12 (A-), 1.12 ± 0.23 (K). One way ANOVA test showed no significant differences between all groups after intervention synbiotic beverage ($p > 0.05$).

Conclusions: the intervention of synbiotic beverage from kefir milk and date palm concentrate was no significant differences on the fraction area of degeneration and necrosis in the kidney tissue of the hyperlipidemic rats model ($P > 0.05$).