PERUBAHAN MORFOLOGIK SEL HEPATOSIT AKIBAT PEMBERIAN LEPTIN PADA TIKUS MODEL DIABETES MELITUS TIPE 2

SKRIPSI

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HEPATOCYTE CELL MORPHOLOGICAL CHANGES GIVING DUE TO LEPTIN IN TYPE 2 DIABETES MOUSE MODEL

ABSTRACT

**Background.** Leptin is an adipocyte-derived hormone that has metabolic effects on peripheral tissues including muscle, liver, and pancreas. It also regulates lipid and glucose metabolism as well as insulin action independently. Leptin can stimulate fatty acid oxidation and glucose uptake, inhibit glucose output and lipogenesis in liver. **Purpose.** This research was aimed to examine the hepatocyte cell morphological change due to leptin administration in type 2 diabetes mouse model. **Method.** To make type 2 diabetes, fourteen mouse was induced by a single intraperitoneal injection of STZ (100 mg/kg, i.p) and nicotinamide (240 mg/kg, i.p). The twenty one mice were divided into three groups, the negative control group (non diabetes) and positive control group (diabetes) was induced saline, and treatment group (diabetes) was induced by an intraperitoneal injection of leptin (100 μg/kg, i.p) for 7 days. On day 14, the mice were anesthetized with ether. After anesthetized, performing surgery and the liver was collected immediately. The tissue was immediately washed with saline, then fixed with formalin 10%. Subsequently made histological preparations. **Result.** Indicated significant differences on lipid vacuolisation amount between treatment groups with leptin treatment and positive groups with saline treatment by p <0.05. **Conclusion.** Leptin administration can improve morphological changes on hepatocyte cell in type 2 diabetes mouse model.

**Key words:** leptin, type 2 diabetes, liver, hepatocyte cell.