

ABSTRACT

The Effect of High Fat Diet Variation on Serum Triglyceride Levels and Liver Histology in the Development of NAFLD Models in Mice

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Nonalcoholic fatty liver disease (NAFLD) is highly prevalent worldwide. Among risk factors for the development of NAFLD is excessive lipid intake. The NAFLD model is induced by high fat diet contain SFA, MUFA, and ω -6 PUFA. This study aim to asses effect of high fat diet variation on serum triglyceride levels and liver histology in the development of NAFLD models in mice. Thirty-six male mice (Balb/c) were fed a high-fat diet containing beef tallow 45%, beef tallow 60%, vegetable ghee, animal ghee + corn oil, vegetable ghee + corn oil for 28 days and compared to a control group fed a chow diet. All of mice were fed a high fat diet in the form of pellets, about 8-12 grams *ad libitum*. Body weight and food intake were measured every day. Triglyceride serum were measured on the last day and liver histology were performed. This study showed that all high fat diets disturbed the triglycerides serum profile, beef tallow had the highest triglycerides serum, followed by vegetable ghee, animal ghee + corn oil, and vegetable ghee + corn oil. NAFLD model development can be achieved in all group mice were fed high-fat diet. Beef tallow 60% had the worst liver histology. However, the effect of varying amounts of fat and duration of feeding on various types of HFD should be investigated and their effects on the development of NAFLD.

Keywords: NAFLD, high fat diet, liver histology, triglycerides serum, mice