Influences of Mangiferin on Lipid Metabolism Pathway in High Fat Diet and Streptozotocin-induced Model in Rat

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ABSTRACT

1. Background
Some studies have reported that Mangiferin could reduce serum cholesterol or fasting blood glucose. However, patients with metabolic disease are usually suffering from hyperglycemia and hyperlipidemia simultaneously. Uni-experimental model is difficultly to explain the symptom expressions of complex disease. In addition, molecular mechanism of Mangiferin on lipid metabolism in hyperglycemia and hyperlipidemia has rarely been reported.

2. Methods
Adult SD rats were provided with high-fat diets for five weeks ad libitum and were administrated with streptozotocin (40 mg/kg, i.p) on the eighth day. The animals were grouped by random, and were administered orally with Gemfibrozil (50 mg/kg, positive control), Metformin (100 mg/kg, positive control), or Mangiferin (50, 100 and 150 mg/kg). During the experimental period, the intake-quantity of high-fat diets was monitored once a day and the body weight change was monitored once every three days. TG, TC, LDL, FFA and HDL levels was measured by an enzyme-linked immunosorbent assay method.

3. Results
Results showed the significant (P < 0.01) was increased in high density lipoprotein (HDL). On the other hand, mangiferin decreased significantly (P < 0.05) the Total cholesterol (TC), Triglycerides (TG), Low density lipoprotein (LDL), Free fatty acid (FFA), and Atherogenic index (AI) levels.

Keywords: Mangiferin, Hyperlipidemia, Hyperglycemia, Lipid Metabolism

REFERENCES