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Ketogenic Diet Impact on Hyperinsulinemic Non-Diabetic Obese Patients

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Obesity has become a serious chronic disease worldwide. It is generally believed that high fat diets may lead to the development of obesity and several other diseases such as coronary artery disease, diabetes and cancer. Current nutritional approaches to obesity generally rely on reduction in dietary fat and have failed to show sustained long-term effects. Contrary to the common notion, a high intake of carbohydrates was found to increase the levels of triacylglycerols, total cholesterol, and low-density lipoprotein (LDL) cholesterol and decrease the level of high-density lipoprotein (HDL) cholesterol. A high ratio of triacylglycerols to HDL is an important predictor of heart attack and may be associated with hyperinsulinemia. Elevated insulin levels are associated with an increased risk of ischemic heart disease in men and increases the risk of type II diabetes mellitus. Moreover, Hyperinsulinemia is an important contributor to the development of fatty liver. Few studies investigated the long-term effect of a ketogenic diet in obesity-associated diseases as hyperinsulinemia. Ketogenic diet is a diet that consists of high-quality high fat, moderate protein and very low concentrations of carbohydrate (20–50 g/d). Such diet has been referred to as low-carbohydrate ketogenic diet (LCKD). Ketosis is a state that occurs as a result of general shift of metabolism from a “gluco-centric” (glucose) to an “adipo-centric” (ketone bodies, fatty acids) metabolism. Thus, a ketogenic diet is a good regulator of the body’s calorie intake and mimics the effect of starvation in the body.

The purpose of the present study was to investigate the effect of long term use of ketogenic diet as a natural therapy for obesity, on regulating insulin level and also its effect on reducing the risk factors for heart disease in hyperinsulinemic non-diabetic obese patients. Our results support our hypothesis that maintaining an adequate level of insulin sensitivity and low plasma insulin concentrations through ketogenic diet may be of value in losing weight, preventing type II diabetes, lowering serum level of glutamic pyruvic transaminase (GPT), improving lipid profile and reducing the risk of heart disease.