

Effect of Individualized Nutritional Counseling on Adiponectin and Metabolic Parameters in Middle-aged Subjects

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Prevalence of obesity and diabetes has been elevated in Japan. Therefore, establishment of effective primary prevention measure for the metabolic syndrome is required. It is thought that one of the most effective measures for primary prevention of lifestyle-related disease is the individualized advice for support of healthy custom. In this study, we conducted a randomized-controlled trial to determine the effect of an individualized nutritional counseling on metabolic parameters related to lifestyle-related diseases and adiponectin in 23 male and 37 female volunteers (40-64 yr old). The trial was conducted from September 2006 to July 2007, consisting of interventions which were made every three months during 9 months. The subjects of intervention group were individually supported by dietitians to set up a goal for healthy dietary custom, taking into account the date of medical check-up and diet history questionnaire and physical activity questionnaire. The subjects of control group were provided with the date of medical check-up and diet history without any instructions.

During the 9 month period, there was a significant increase of HDL cholesterol and decrease of LDL cholesterol, AST and ALT in the intervention group, and these blood parameters at the end of the clinical trial were significantly different from those in the control group. BMI, body weight, abdominal circumference, systolic blood pressure, diastolic blood pressure, fasting blood glucose, AST, ALT and UA were significantly reduced in the intervention group, but not in the control group. A relative risk score for metabolic syndrome which was computed using five physical and biochemical parameters, i.e., BMI, blood glucose, triacylglycerol, HDL-cholesterol and blood pressure, tended to be lower in the control group. Plasma adiponectin levels were significantly elevated in both groups, but the change in plasma adiponectin level was significantly associated with the relative risk score only in the intervention group.

In conclusion, this study suggests that individualized nutritional counseling for 9 months is effective for a person with a risk for metabolic syndrome.