Abstract

Introduction: common polymorphisms (rs9939609) of the fat mass and obesity associated gene (FTO) have been linked to obesity. Objectives: our aim was to investigate the role of this polymorphism on insulin resistance, metabolic changes and weight loss secondary to a high monounsaturated fat vs a high polyunsaturated fat hypocaloric diets. Material and Methods: a sample of 233 obese subjects was enrolled in a prospective way. In the basal visit, patients were randomly allocated during 3 months to; Diet M (high monounsaturated fat hypocaloric diet) or Diet P (high polyunsaturated fat hypocaloric diet). Results: after treatment with two diets and in both genotypes, weight, fat mass and waist circumference decreased. Lower levels of body mass index (BMI), weight and fat mass were detected after Diet P in A allele carriers than TT genotype subjects. With the diet type P and in both genotypes (TT and AT + AA), total cholesterol levels (-15.3 + 35.1 mg/dl vs -11.6 + 32.1 mg/dl: p > 0.05) and LDL cholesterol levels (-11.5 + 34.1 mg/dl vs -8.5 + 30.1 mg/dl: p > 0.05) decreased. In A allele carriers a significant decreased was detected in insulin levels (-2.8 + 2.1 UI/L vs -1.3 + 8.0 UI/L: p < 0.05) and HOMA index (-1.0 + 1.3 vs -0.2 + 2.1: p > 0.05), too. With the diet M and in both genotype groups, leptin levels (-8.0 + 17.1 ng/ml vs -4.9 + 18.7 ng/ml: p > 0.05) decreased. Conclusiones: metabolic improvement secondary to weight loss was better in A carriers with a high polyunsaturated fat hypocaloric diet.

Keywords

Monounsaturated fatty acids, Polyunsaturated fatty acids, Metabolic parameters, rs9939609, Obesity.