Abstract

Dyslipidemia is a major public health problem, and therefore, it is important to develop dietary strategies to diminish the prevalence of this disorder. It was recently reported that diet may play an important role in triggering insulin resistance by interacting with genetic variants at the CAPN gene locus in patients with metabolic syndrome. Nonetheless, it remains unknown whether genetic variants of genes involved in the development of type 2 diabetes are associated with variations in high-density lipoprotein cholesterol (HDL-C). The study used a single-center, prospective, cohort design. Here, we assessed the effect of four variants of the CAPN gene on HDL-C levels in response to a soy protein and soluble fiber dietary portfolio in subjects with dyslipidemia. In 31 Mexican dyslipidemic individuals, we analyzed four CAPN gene variants (rs5030952, rs2975762, rs3792267, and rs2975760) associated with type 2 diabetes. Subjects with the GG genotype of the rs2975762 variant of the CAPN gene were better responders to dietary intervention, showing increased HDL-C concentrations from the first month of treatment. HDL-C concentrations in participants with the wild type genotype increased by 17.0%, whereas the HDL-C concentration in subjects with the variant genotypes increased by only 3.22% (p = 0.03); the low-density lipoprotein cholesterol levels of GG carriers tended to decrease (-12.6%). These results indicate that Mexican dyslipidemic carriers of the rs2975762-GG genotype are better responders to this dietary intervention.

Keywords

Key words, Calpain-10, polymorphism, dietary portfolio, hypercholesterolemic, dyslipidemia.