

ADIPONECTIN IS A GENETIC CONTRIBUTOR TO OBESITY, METABOLIC SYNDROME AND DIABETES IN ELDERLY

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BACKGROUND/AIMS: Plasma adiponectin has become an important biomarker for the metabolic syndrome (MetS). Whether adiponectin could be a genetic contributor to the MetS among the elderly is not known.

SUBJECTS/METHODS: A total of 1438 subjects over 65 (mean= 71.9±5) years old were recruited. Phenotypes related to the MetS were measured. Single-nucleotide polymorphisms (SNP) were genotyped by mass spectrometry.

RESULTS: The G allele of the SNP276 was associated with a decreased risk of obesity, the MetS and diabetes mellitus (DM). The GT genotype relative to the GG genotype had age- and gender-adjusted odds ratios of 1.32 for obesity (BMI_≥25 kg/m², *P*=0.014), of 1.33 for the MetS by modified NCEP criteria (*P*=0.011) and of 1.47 for the MetS by IDF criteria (*P*=0.001). The age, gender and BMI-adjusted odds ratios for DM of the GT and TT genotypes relative to the GG genotype were 1.28 (*p*=0.042) and 1.72 (*p*=0.013), respectively, with an obvious dosage effect (*p* for trend=0.004). Various haplotype combinations of SNP45 and SNP276 also showed increased risk for obesity, MetS and DM relative to the GG/GG haplotype combination.

DISCUSSION/CONCLUSIONS: Adiponectin is a genetic factor for obesity, MetS and DM in the elderly. The genetic effect on DM is partly independent of BMI.

Key words: adiponectin, genetics, metabolic syndrome, obesity, diabetes, elderly