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Comparative Analysis of dietary intakes and obesity by β -II Adrenergic receptor, Uncoupling Protein-1 and Angiotensin converting enzyme gene polymorphism in Korean young females.

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The purpose of this study was to investigate the effects of β -IIAR, UCP-1 and ACE gene polymorphism upon obesity and dietary intake in young females. Anthropometric measurements and body composition test using impedance method were taken and a dietary survey was conducted using 24-hour recall method. We screened 232 unrelated young females and detected 182 Gln27 and 34 Gln27Glu, for UCP-1 62 AA type, 114 AG type and 55 GG, and for ACE polymorphism 29 DD type, 134 ID type and 69 II type. The frequency of mutant Gln27Glu was slightly high in obese subjects than in nonobese subject(20%, 11%). But the distribution of UCP-1 gene and ACE gene polymorphism are not different in obese subjects and nonobese subjects.

As a results of comparisons of physical characteristics and body composition by β -II AR gene and UCP-1 gene polymorphism, there is no significant difference in different gene types. For ACE gene polymorphism, weight, BMI, obesity index, triceps and WHR of II type was significantly low among three types($p < 0.05$). And fat mass and body fat of II type were significantly low($P < 0.05$).

We assess the difference of dietary intake by gene polymorphism, there were no differences of nutrients intakes among different gene types. According to these results, we have not found that the β -2AR and UCP-1 variant are associated with obesity, but we have found that II homozygotes was lean than other types.