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The effects of polymorphism in β-2 adrenergic receptor, β -3 adrenergic receptor and Angiotensin Converting Enzyme genes on obesity, metabolic indicator and the Food Preference.

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Polymorphisms in a number of candidate genes have been reported to be associated with obesity. To determine the role of polymorphism of β-2 adrenergic receptor(β -2AR), β-3 adrenergic receptor(β-3AR) and Androgen converting enzyme(ACE) gene in obesity, metabolic indicator, and the score of food preference, anthropometric measurements and blood test were taken and a validated semiquantitative food preference questionnaire was administered. We genotyped Trp64Arg, Gln27Glu polymorphism and ACE Insertion/Deletion polymorphism in 161 unrelated subjects(108 male, 62 female, mean age 24.9±4.7). The percentage of the distribution β-2AR gene were Gln27Glu 15.6% and Gln27 84.4%, for β-3AR gene were Trp64 61.2% and Trp64Arg 28.8%, and for ACE gene were DD type 17.5%, ID type 52.8%, and II type 29.7%.

As a results of comparisons of body composition, there is no significant difference between different types of genes. And for metabolic indicator, there is no significant difference in gene types. We assess the difference of the score of food preference by gene polymorphisms, but there were no differences of the score among different gene types.

According to these results, we have not found that the Gln27Glu variant and Trp64Arg are associated with obesity, as well as metabolic indicator. And there was no difference of preference to specific food groups within gene polymorphism.