

Variants of Fat Mass Obesity Associated rs 9939609 Associated with Obesity and Eating Behavior in Adolescent of Minangkabau Ethnic

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Abstract : There are two contradicting opinions on the relationship between fat mass obesity associated (FTO) rs 9939609 variants and obesity on various ethnics and races. The first opinion agrees that there is an association between the two variables, yet another one disagree. Minangkabau ethnic had a different dietary pattern with other ethnics in Indonesia. They had higher fat and low fiber intakes compared to the other ethnics groups. There is little research in genetic factors that influence eating behavior (food preference or food selection). The objective of this study was to investigate the association between FTO rs 9939609 variants with obesity and eating behavior in adolescent girls of Minangkabau Ethnic. The research design was case control study. A total of 275 adolescent girls aged 12-15 years old (130 obese and 145 normal) were randomly chosen from four districts at West Sumatera (Padang, Padang Pariaman, Padang Panjang and Tanah Datar). Genetic variants of FTO rs 9939609 were analyzed with Tetra-primer Amplification Refractory Mutation System-Polimerase Chain Reaction (AMRS PCR), eating behavior were gathered using eating habits questionnaire, and Body Mass Index (BMI) was calculated according to BMI Z-score (WHO). The result showed that genetic variants of FTO rs 9939609 (TT, TA and AA genotype) had associated with obesity ($p = 0,013$), whereas subject with An Allele was significantly associated with obesity (odds ratio 1,62 [95% confidential interval, 1,00-2,60]). Subjects with An Allele carrier reported a higher consumption of fried food ($p < 0.05$) as compared to TT genotypes carriers. There is no association between genetic variants and meal frequency, fruit and fiber intakes $p > 0.05$. The genetic variants of FTO rs 9939609 are associated with obesity and eating behavior in adolescent of Minangkabau Ethics.

Keywords : FTO rs9939609, obesity, eating behavior, adolescents

Conference Title : ICRTOTED 2017 : International Conference on Recent Trends in Obesity Treatment and Endocrinal Disorders

Conference Location : Amsterdam, Netherlands

Conference Dates : July 10-11, 2017