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FTO Polymorphisms and obesity in Han Chinese adolescents: A case-control study

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At mass-and obesity-associated (FTO) gene has been associated with body mass index (BMI) and obesity. This case-control study aims to assess the association of five FTO polymorphisms (rs9939609, rs8050136, rs1558902, rs3751812 and rs6499640) with obesity in Han Chinese adolescents. A total of 401 adolescents, aging from 14 to 18-years-old, recruited from public schools in central region of Wuxi, China. DNA samples were genotyped for the five polymorphisms by Sequenom Plex MassARRAY. Association of the FTO polymorphisms with BMI, serum fasting plasma glucose (FPG), fasting insulin (FIns), triglyceride (TG) and cholesterol (TC) were analyzed. There were 223 normal weights (58.7% boys, 41.3% girls) and 178 overweight (60.1% boys, 39.9% girls) in this study. Serum FPG, FIns, TG and TC were statistically significant higher than that in normal control group. BMI was higher in the rs9939609 TA+AA, rs8050136 AC+AA, rs1558902 TA+AA and rs3751812 GT+TT genotypes than in wild TT genotypes (rs9939609: $P=0.038$; rs1558902: $P=0.038$), CC genotypes (rs8050136: $P=0.024$) and GG genotypes (rs3751812: $P=0.024$), which were not significant on adjusting for multiple testing. Five polymorphisms were not significantly associated with overweight ($p>0.05$), haplotype analyses showed non-haplotype is significantly associated with a higher risk of being overweight. Moreover, there existed no significant statistical difference about FPG, FIns, TG and TC in genotype model for any SNP. Our study found BMI of subjects with an allele of FTO rs9939609 is higher than that with T allele. Further studies on other polymorphisms from FTO and increasing the sample size are needed.

Biography

Junqing Wu has completed her PhD at the age of 45 years from Fudan University. She is the Director of Dept. of Epidemiology and Social Science on Reproductive Health, Shanghai Institute of Planned Parenthood Research. She has published more than 200 papers in reputed journals and serving as tutor for doctoral students at Fudan University.

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