Obesity-2013

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Obesity & Weight Management

December 02-04, 2013 Hampton Inn Tropicana, Las Vegas, USA

The *Serotonin 2A receptor* (*SER 2A*) gene polymorphism and its association with obesity and dyslipidemia in semi urban subjects of Tamilnadu, South India

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Abstract

Serotonin is a neurotransmitter that regulates many physiological processes such as appetite, hunger, hormone secretion and sleep [(1)]. Abnormalities in the serotonin transmission pathway have been implicated in obesity but no studies in Asian Indians of South India have been conducted so far. In this case - control study (obese cases *n= 208,* non obese subjects *n= 166,* age group 20 - 45 years) on unrelated semi urban subjects of Tamilnadu, India, the association of *-1438 G/A* polymorphism in the promoter region of serotonin receptor gene was analyzed for its association with obesity and hypertriglyceridemia. Genotyping was performed by polymerase chain reaction (PCR) and restriction fragment length polymorphism (RFLP) analysis. Three genotypes namely GG, GA and AA were obtained. The frequency of GG genotype (0.49) was higher in obese females than non obese females (0.46). In non obese males, the GA genotype frequency (0.53) was higher than obese males (0.43). The frequencies were in Hardy Weinberg equilibrium ($P < 0.05$). In reference to clinical profile, subjects with GG genotype had eight times higher risk of developing obesity and four times higher for developing hypertriglyceridemia than subjects with GA. The results warrant longitudinal studies to deciphere the effects on this polymorphism on diet, physical activity and metabolic rates in obese subjects of Tamilnadu, South India.

Biography

Shajith anoop has a Masters degree in applied microbiology and has completed Ph.D in Environmental Sciences from Bharathiar University, Coimbatore, India. He has presented research papers in Obesity at National and International conferences. His areas of research interest include Clinical trials and Gene – Nutrient interaction in Obesity. He is keen in collaborative research in Obesity and Type two Diabetes.