

Abstract

Background: About 30% of patients treated with second generation antipsychotics (SGA) experience weight gain. Although there is evidence that the FTO gene is associated with obesity its role in antipsychotic induced weight gain is not so clear.

Methods: A genetic association study was carried out to identify the association between FTO rs9939609 and antipsychotic induced weight gain. Sample consisted of 180 cases and 120 controls. Cases were patients diagnosed with schizophrenia or schizoaffective disorder, treated with second-generation antipsychotics for a minimum of 3 months, and had gained at least 10% of body weight. Controls were patients with schizophrenia treated with second-generation antipsychotics for a minimum of 3 months but had not gained $\geq 10\%$ of body weight. Genomic DNA was extracted from whole blood. Polymerase chain reaction of the samples was done. Real-time quantitative PCR (qPCR) was carried out using BIO-RAD CFX96 Touch TM PCR detection system.

Results: Females were significantly more among cases (58.3%) than controls (35%). Cases (52.4%) were significantly more likely to be overweight or obese than controls (13.8%). Genotype distribution was in Hardy-Weinberg equilibrium ($p=0.43$). Cochran-Armitage trend test was not significant. Risk of antipsychotic induced weight gain in the AA genotype [OR 1.69 (95% CI 0.74-3.86)] and AT genotype [OR 1.1 (95% CI 0.67-1.79)] were not significantly higher than the TT genotype. Recessive model showed that AA/AT genotypes were at significantly higher risk of being obese/overweight [OR 1.84 (95% CI 1.05-3.2)].

Conclusions: There was no significant association between FTO rs9939609 and antipsychotic induced weight gain. AA/AT genotypes had significantly higher risk of overweight/obesity.