Article: 0359
Topic: EPO05 - "the dreamers": changes in european psychiatry over the last 10 years

Genetic Markers and Disordered Eating Amongst Adolescents – the Hunt Study

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Introduction: Disordered eating has a strong genetic component which is not fully understood.

Objective: Possible associations between certain genetic markers and disordered eating at adolescence were tested in the Nord-Trøndelag Health Study (HUNT).

Methods: Logistic regression was employed to test for association with the gene variants rs6277 (DRD2), rs569356 (OPRD1), rs10195252 (GRB14), rs35683 (GHRL), rs4074134 (BDNF), rs10838738 (MTCH2), rs1121980 (FTO), rs17782313 (MC4R) and rs11084753 (KCTD15) in participants aged 13 to19. EAT-7, a shortened version of EAT-12 was used to identify cases as those scoring above cutoff on EAT-7(456 cases) and its anorexia (EAT-A, 259 cases) and bulimia subscale (EAT-B, 433 cases), compared against 5405 controls. A haplotype analysis was performed for markers within FTO, MC4R and BDNF genes. Associations were adjusted for gender, age and BMI.

Results: In males, rs6277 showed significant association with EAT-B (OR: 1.32 ,p = 0.03) after adjustments for age and BMI.

The A-allele of rs11084753 showed positive associations with EAT-A (OR: 1.25, p = 0.01) in the combined sample. In females, after adjusting for age and BMI, the C-allele of rs10195252 was positively associated with EAT-A (OR: 1.30, p = 0.01).

After adjustments for age and BMI in females, rs10195252 showed significant association with EAT-7(OR: 1.18, p: 0.02).

Haplotype analysis on FTO gene revealed a 'collective reinforced effect' of the GCT alleles from rs1121980, rs8050136 and rs9939609, respectively, compared to rs1121980 variant alone.

Conclusion:

We found evidence in support of associations between DRD2, FTO, GRB14 and KCTD15 with disordered eating. Associations seem to vary based on gender.

https://doi.org/10.1016/S0924-9338(15)30283-2 Published online by Cambridge University Press