Introduction

- Pediatric obesity is a major concern in the US, with its prevalence tripling since the 1970s.
- The Pediatric Obesity Program investigates genetic and environmental causes for obesity, as well as potential treatments to address it.
- The Healthy Lifestyles Clinic is an interdisciplinary clinic to treat children and adolescents with obesity.

Research Project: Associations of FTO and BDNF Genotypes with Dietary Intake in Children with Obesity

Objective: Determine if SNPs in the BDNF and FTO genes are associated with worse obesity and/or higher dietary intake.

Methods: 573 youth from the Healthy Lifestyle Clinic were genotyped using TaqMan SNP assays for FTO rs9939609, BDNF intronic rs12291063, and BDNF Val66Met rs6265. Appetite and dietary intake were assessed using the Dykens Eating Behavior Questionnaire and the Block Food Frequency Questionnaire. Differences in dietary intake by genotype were assessed by ANCOVAs in SPSS adjusting for age, sex, race, and BMI.

Results: FTO rs9939609 minor A allele was associated with increased BMI in females (p=0.03). BDNF rs6265 minor T allele was associated with increased hyperphagia (p=0.04). BDNF rs6265 T allele was associated with higher BMI only in African Americans (p=0.01). Carriers of BDNF rs6265 T allele (p<0.05) and FTO rs9939609 A allele (p=0.03) reported higher cheese intake. Carriers of minor BDNF intronic rs12291063 C allele reported higher fried chicken intake (p=0.02).

Conclusion: Genetic factors may predispose children with obesity to greater appetite and increased consumption of higher fat foods, and therefore may be beneficial to consider for individualized weight management.

Clinical Experience and Volunteering: Healthy Lifestyle Clinic

- shadowed patient as they met with various providers, including an exercise physiologist, dietician, behavioral health counselor, medical provider, and social worker.
- observe how the clinic provided solutions that fit within the financial and circumstantial needs of the patients with deeply personalized and individualized weight management care.
- taught patients basic cooking skills and assisted in finding and making healthy and cheap recipes in the SNACK program.

Future Research

- See if there is a connection between genotype and success in weight management program.
- Explore association between food preference and MC4R, an strongly obesity associated gene.

Conclusion

The Healthy Lifestyle Clinic at Le Bonheur provides highly individualized and specialized care for each patient, supplemented by clinical research. This internship further solidified my interest in medicine and in pursuing research that translates to improved patient care.

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