

Celiac Disease and Anorexia Nervosa—An Association Well Worth Considering

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Celiac disease (CD) and anorexia nervosa (AN) are both chronic indolent conditions that are prevalent, particularly in adolescents and young adults. In this issue of *Pediatrics*, Mårild et al¹ describe a positive association between CD and AN, both before and after the diagnosis of CD, in a large population-based study of women with biopsy-proven CD. This intriguing bidirectional association could imply misdiagnosis at initial presentation, a shared genetic susceptibility, or acquired risk for 1 condition after diagnosing the other. Specifically, the authors found that in women with CD diagnosed before the age of 19 years, the odds of a previous diagnosis of AN were increased 4.5-fold, after adjusting for education level, socioeconomic status, and type 1 diabetes. In addition, those aged >20 years were at almost twice the risk of developing AN after an initial diagnosis of CD.

An important finding of this study is that misdiagnosis or delayed treatment of CD can occur during adolescence,¹ a particularly vulnerable period of growth and development. Both classic CD and AN are characterized by similar gastrointestinal symptoms, including abdominal pain, diarrhea, bloating, and failure to thrive. It is estimated that the majority of the 3 million individuals with CD in the United States are currently undiagnosed and remain untreated because CD is often asymptomatic.² The prevalence in at-risk groups has been increasing and is as high as 1:56 in symptomatic patients, 1:22 in first-degree relatives, and significantly increased in patients with various autoimmune diseases.³ The best approach to

diagnose asymptomatic or “silent” CD remains unresolved; biopsy-proven histology remains the gold standard for diagnosis.^{2,4} Given these statistics, misdiagnosis can be devastating, potentially compounding the injurious longstanding effects of treatment delay for either diagnosis and leading to progressive bone disease, possible early mortality, and overall poor quality of life.

The findings of this study¹ warrant attention both in the initial clinical assessment and ongoing reassessment of both conditions, especially in those patients not responding to traditional therapy. A 1-time serologic test for immunoglobulin A antibodies to tissue transglutaminase and total immunoglobulin A has >95% sensitivity for CD in individuals consuming at least 3 to 10 g of daily gluten.⁴ Although the results of the study by Mårild et al may lead readers to question whether all young women suspected of having AN should be screened for CD, a universal approach to CD screening is likely not cost-effective,⁵ but further research is warranted.

Eating disorders affect 5.7% of adolescent girls.⁶ Coexistence of eating disorders with autoimmune diseases, including CD, has been well documented,⁷ but the study by Mårild et al¹ adds directionality by showing that in adults previously diagnosed with CD, the risk for developing AN increases twofold. Not infrequently, an eating disorder begins with well-meaning, self-imposed attempts to “eat healthily” by eliminating foods perceived to be unhealthy. The classic

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Minnesota experiments clearly showed that dietary restriction even in previously healthy adults can lead to preoccupation with shape and weight and the medical and psychiatric complications found in patients with AN.⁸ The present study suggests that excessive focus on diet in patients with CD may lead to development of AN in susceptible individuals.

Finally, the article by Mårild et al¹ only addresses patients with biopsy-proven CD. Much larger numbers of young people are choosing to go on gluten-free diets to address a range of health issues, without objective evidence of CD. Interest in “going gluten-free” is increasing, particularly in adolescent female subjects, with 1 in 5 Americans attempting to restrict daily gluten intake.⁹ The interaction between gluten-free diets and eating disorders is an even larger issue. This important study only addresses the tip of the iceberg.

ABBREVIATIONS

AN: anorexia nervosa
CD: celiac disease

REFERENCES

1. Mårild K, Størdal K, Bulik CM, et al. Celiac disease and anorexia nervosa: a nationwide study. *Pediatrics*. 2017;139(5):e20164367
2. Rubio-Tapia A, Ludvigsson JF, Brantner TL, Murray JA, Everhart JE. The prevalence of celiac disease in the United States. *Am J Gastroenterol*. 2012;107(10):1538–1544; quiz 1537, 1545
3. Fasano A, Berti I, Gerarduzzi T, et al. Prevalence of celiac disease in at-risk and not-at-risk groups in the United States: a large multicenter study. *Arch Intern Med*. 2003;163(3):286–292
4. Rubio-Tapia A, Hill ID, Kelly CP, Calderwood AH, Murray JA; American College of Gastroenterology. ACG clinical guidelines: diagnosis and management of celiac disease. *Am J Gastroenterol*. 2013;108(5):656–676, quiz 677
5. Park KT, Tsai R, Wang L, Khavari N, Bachrach L, Bass D. Cost-effectiveness of universal serologic screening to prevent nontraumatic hip and vertebral fractures in patients with celiac disease. *Clin Gastroenterol Hepatol*. 2013;11(6):645–653
6. Smink FR, van Hoeken D, Oldehinkel AJ, Hoek HW. Prevalence and severity of DSM-5 eating disorders in a community cohort of adolescents. *Int J Eat Disord*. 2014;47(6):610–619
7. Wotton CJ, James A, Goldacre MJ. Coexistence of eating disorders and autoimmune diseases: record linkage cohort study, UK. *Int J Eat Disord*. 2016;49(7):663–672
8. Keys A. *The Biology of Human Starvation*. Minneapolis, MN: University of Minnesota Press; 1950
9. Gallup. One in five Americans include gluten-free foods in diet. Available at: www.gallup.com/poll/184307/one-five-americans-include-gluten-free-foods-diet.aspx. Accessed February 14, 2017

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