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Abstract

OBJECTIVE:

To investigate whether season of birth is associated with celiac disease (CD).

STUDY DESIGN:

We performed a medical record review of 1964 patients with biopsy-proven CD at 3 teaching hospitals (2 pediatric centers and 1 adult center) between 2000 and 2010. The first positive small intestinal biopsy result defined age of diagnosis. The observed proportions of births in each season (spring [March-May], summer [June-August], fall [September-November], and winter [December-February]) were compared with the expected proportions using binomial probability tests.

RESULTS:

The mean age at diagnosis was 9.8 ± 5.0 years in the 2 pediatric centers and 43.6 ± 15.8 years in the adult center. The cohort was predominately female (69%). Overall, more patients were born in spring (27%) than in any other season: summer (25%), fall (25%), and winter (23%). In patients diagnosed before age 15 years, the spring birth excess was present in boys (33%; $P = .0005$), but not in girls (26%; $P = .43$). The sex difference in season of birth was less striking in patients with CD diagnosed at age ≥ 15 years.

CONCLUSION:

Season of birth is an environmental risk factor for CD, particularly in boys diagnosed before age 15 years. The results are consistent with a new theoretical model that integrates potential environmental factors (eg, gluten introduction, ultraviolet-B exposure, vitamin D status) and acute viral gastrointestinal infections in early childhood.

Source: Division of Pediatric Gastroenterology, Hepatology and Nutrition, Massachusetts General Hospital for Children, Boston, MA