CELIAC DISEASE IN AT RISK GROUPS IN SOUTHERN CALIFORNIA

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Background: Celiac disease (CD) is an autoimmune enteropathy that occurs in genetically susceptible individuals who ingest gluten. CD is common in Europe and in patients with other known autoimmune disorders. However, it is perceived as rare in the USA, especially among non-Caucasians.

Aim: The aim of this study was to screen for CD in children and adults in Southern California in at-risk groups.

Methods: Subjects were enrolled in the gastroenterology and endocrinology clinics at Childrens Hospital Los Angeles, and at the annual Celiac Disease Foundation meetings. Informed consent/assent was obtained from children and their families, and a questionnaire was used to collect data on the patient's medical history, symptoms, diet and family history. Serum antigliadin IgG and IgA (AGA) and anti-tissue transglutaminase IgG and IgA (htTG) were measured by ELISA. IgA antiendomysium (AEA) antibody was detected by indirect immunofluorescence using human umbilical cord vein or monkey esophagus as substrate. Total IgA was measured on those who were only AGA IgG +. Small bowel biopsy was recommended to confirm the diagnosis in subjects who were AEA or htTG+, AGA IgG + with total IgA deficiency, or AGA+ under the age of two.

Results: Out of the 1094 subjects enrolled, 64 (6%) had serology consistent with CD and were recommended for biopsy. The majority of those with positive serology were Caucasian (78%) followed by Latino (8%), Middle Eastern, Native American and mixed ethnicities. No African Americans nor Asians had positive serology. 52% of those screened were either first or second-degree relatives of a person with CD. The most common reported co-morbid conditions in this group included Type I diabetes (20%), lactose intolerance (8%), followed by hypothyroidism, irritable bowel syndrome, osteoporosis and iron deficiency anemia (6% each). The most common reported symptoms included abdominal pain and diarrhea (36% each), gaseousness and joint pain (31% each), heartburn (22%), fatigue (20%) and constipation (19%). Of the 12 subjects who were completely asymptomatic (19%), 11 of them had first or second-degree relatives with CD. Family histories were positive for arthritis (30%) diabetes type I (25%), thyroid disease (20%), stomach or duodenal ulcers, osteoporosis or irritable bowel syndrome (13% each), and colon cancer (11%). Of the 33 who had biopsies, 24 were consistent with CD, 2 were inconsistent, and 7 were indeterminate. Biopsies were considered indeterminate due to poor orientation of the tissue, or inability of the study center to review the slides. In one child whose biopsies were indeterminate, staining for CD3 +-lymphocytes was able to confirm the diagnosis. Incidentally, two of the children with Type I diabetes and CD had clinical and histologic gastritis, +CLO test, and biopsies consistent with Helicobacter pylori infection. 31 subjects either had the biopsy pending or did not have the biopsy performed, either because the subject refused or decided to go on a gluten-free diet without confirmation of the disease.

Conclusions: CD occurs in children and adults in Southern California who belong to the at-risk groups of having another autoimmune disorder, gastrointestinal symptoms, lactose intolerance, iron deficiency anemia, osteoporosis, and first or second-degree relatives with CD. Patients in these risk groups should be screened for CD, regardless of ethnic background, family history of CD, or the presence or absence of gastrointestinal symptomatology. First and second-degree relatives of patients with CD are often asymptomatic. CD3 staining may be useful in clarifying indeterminate biopsies. Children with type I diabetes and CD may be at higher risk for H. pylori infections. Negative biopsies may be seen in patients with positive serology because of sampling error, underestimation of the histologic damage by the pathologist or because these patients are "latent" celiacs who will develop histological changes in the future.