Publication of the Month

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February 02/09: Diagnosis of Celiac Disease via Diet Response?

Celiac disease (CD) is a gluten-sensitive chronic enteropathy which is treated with a gluten-free diet. It is certainly one of the most common food intolerances. In order to either start the therapy as soon as possible or to use it as a diagnostic test, wheat is often excluded from the diet before histological and serological investigations are performed. However, subjective intolerance to cereals is not specific for CD. In the following study the authors investigated whether the clinical response of gastrointestinal symptoms to gluten withdrawal and subsequent dietary re-introduction could be an indicator of the presence of CD:

Campanella J, Biagi F, Bianchi PI, Zanellati G, Marchese A, Corazza GR
Clinical response to gluten withdrawal is not an indicator of coeliac disease
Scandinavian Journal of Gastroenterology 2008; 43: 1311-1314

705 patients presumed to be affected by CD were examined. In 180 patients the diagnosis was not based on duodenal biopsy and positive antibodies and was thus doubtful. 117 of these 180 patients agreed to undergo dietary gluten re-introduction followed by duodenal biopsies and endomysial antibody testing to either confirm or exclude the diagnosis of CD. Clinical records were available for 112 of these patients.
A diagnosis of CD was confirmed in only 51 out of 112 patients.
In 61 patients CD could be excluded because of normal duodenal biopsies and negative endomysial antibodies. 52 of these patients complained of gastrointestinal symptoms and the final diagnosis were irritable bowel syndrome (n = 22), lactose malabsorption (n = 8), infectious diarrhoea (n = 8), food allergy (n = 7), lymhocytic colitis (n = 2), gastro-esophageal reflux disease (n = 2), of small-bowel bacterial overgrowth, Crohn's disease and chronic pancreatitis (each n = 1).
Surprisingly, gastrointestinal symptoms improved in 64.7 % of CD patients and 75.0 % of non-CD patients, corresponding to a low positive predictive value of 36 %. Gluten re-introduction was followed by clinical exacerbation in 71.4 % of CD patients and 54.2 % of non-CD patients, corresponding to an even lower positive predictive value of 28 %. Thus, clinical response to either withdrawal or re-introduction of dietary gluten has no role in the diagnosis of celiac disease.

CD is characterized by features such as associated autoimmune diseases, abnormal growth and development or increased risk of malignancy that are absent in other forms of food intolerance and irritable bowel syndrome. Because of the long-term and secondary effects of inadequately treated celiac disease, doctors and patients have to be aware that adherence to the gluten-free diet is crucial.
Therefore, whenever a diagnosis of CD is suspected, it should either be confirmed or excluded with certainty. This can only be done with duodenal biopsy and celiac antibody testing, performed while the patient is on a gluten-containing diet.

The authors conclude that since experimental or diagnostic exclusion of gluten from the diet is not a double-blind challenge test, it is useless and should be discouraged because it will only make the correct diagnosis of CD even more difficult.