

Short Stature and Celiac Disease: A Relationship to Consider Even in Patients With No Gastrointestinal Tract Symptoms

Celiac disease (CD) as a frequent cause (8.3%) of short stature in an asymptomatic group of 60 short children is reported by Cacciari et al of Bologna, Italy. Duodenal biopsies were performed on 60 children (39 boys and 21 girls, 3½ to 18 years of age) who were less than the third percentile, who had no apparent cause for their short stature, and who had no gastrointestinal symptoms. All were tested for human growth hormone (hGH) release using arginine and L-dopa, and for xylose absorption, antireticulin antibodies, hemoglobin, and serum iron. The migration inhibitory factor (MIF) was tested in those with duodenal pathology and in a limited number of the others. Anthropometric measurements and skeletal maturation were assessed in all.

Five children (two girls and three boys) had total villous atrophy. These five did not differ in delay of bone age, height SD score, weight SD score, height age/bone age, or height age/weight age from the 52 patients for whom no cause of short stature was found. Surprisingly, the height age/weight age was 1.03 ± 0.17 SD for the five children, which indicates no malnutrition for the group. Data for individuals are not given.

The data regarding antireticulin antibodies, xylose absorption tests, MIF tests, hemoglobin, and basal iron did not differentiate completely those patients with villous atrophy. For example, only three of five patients had abnormal xylose tests and antireticulin antibodies. Only two had positive MIF tests, decreased basal iron levels, or a history of frequent diarrhea during infancy. The article does not clarify whether the same patients had the same laboratory abnormalities. All five did have delayed bone age.

The authors state that the results do not allow statistical interpretation and absolute conclusions, but they do allow certain conclusions: (1) the incidence of celiac disease may be significant in a population of short children who are asymptomatic; (2) at present, the only way to produce a definite diagnosis in all children with celiac disease is to perform

intestinal biopsy; (3) if biopsies are done only in patients with a history of diarrhea in the first two years of life, and/or the presence of antireticulin antibodies, and/or an abnormal xylose test, the number of biopsies that need be done for diagnostic purposes is significantly reduced. Four of the five would have been identified by the presence of at least one of these three factors, and only 22 biopsies would have been done in the 60 patients; and (4) growth hormone (GH) secretion is normal in these patients with celiac disease.

Cacciari E, Salardi S, Lazzari R, et al: *J Peds* 1983;103:708.

Editor's comment—The data are intriguing. This is not the first report, as the authors readily state, of diagnosing celiac disease in children with short stature and without symptoms of gastrointestinal disease.

Groll et al reported that eight of 34 children with short stature and without gastrointestinal disease had intestinal biopsies characteristic of CD, and seven grew significantly on a gluten-free diet (Lancet 1980; 1:1097).

A little disturbing is the absence of repeat biopsies in either study to demonstrate alterations of histology toward normal. This would have been particularly helpful in the current study, as three of these patients had some adolescent changes during the observation period. Thus, one may not be able to exclude attributing the changes in height and weight to adolescent development.

In the United States and Canada, celiac disease is reported to occur less frequently than in Europe. It is therefore possible that we are missing asymptomatic cases. Letters to the editor concerning this topic are invited.

Bone Marrow Transplantation in the Maroteaux-Lamy Syndrome (Mucopolysaccharidosis VI)

The authors report the use of bone marrow transplantation as treatment for the severe form of Maroteaux-Lamy syndrome in a 13-year-old girl who continues to show improved biochemical and clinical status 24 months after transplantation.

Bone marrow transplantation is now the treatment of choice for many leukemias, aplastic anemias, and immunodeficiency disorders. In experienced hands, when using marrow from HLA-MLC-matched sibs, complication rates and survival times have become quite acceptable. The possibility of using bone marrow transplantation for in-born errors of metabolism has been discussed for many years. Recently, bone marrow transplantation has been used, with encouraging results, for one form of osteopetrosis (an inherited disorder with osteoclast dysfunction) to restore the marrow's osteoclast-monocyte population.

Selective enzyme deficiencies such as Maroteaux-Lamy syndrome would appear to be candidates for

this type of treatment. Maroteaux-Lamy syndrome, for which there is an animal model, is a lysosomal disorder that spares the CNS. Using the feline mucopolysaccharidosis VI model, bone marrow transplantation experiments demonstrated that transplanted reticuloendothelial and hematopoietic cells could return to almost normal the biochemical and clinical abnormalities present in affected animals.

With this background, a 13-year-old girl with the severe form of Maroteaux-Lamy syndrome was identified for bone marrow transplantation. Her disease had become life-threatening with the development of frequent apnea episodes and severe congestive heart failure. Her sister, who was HLA-DR-identical, was the bone marrow donor. The patient was pre-treated with busulfan and a graft-v-host preventive regimen.

Her response to therapy was monitored by clinical response, liver biopsy changes, white cell enzyme assays, urinary mucopolysaccha-