

SEARCHING FOR CELIAC DISEASE IN THE URBAN JUNGLE: YIELD OF SMALL BOWEL BIOPSIES IN PATIENTS WITH IRON DEFICIENCY ANEMIA IN A DIVERSE URBAN POPULATION

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Background

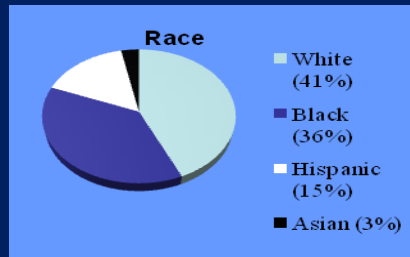
- Celiac disease is a gluten-sensitive enteropathy that occurs in genetically predisposed individuals and responds to the withdrawal of gluten from the diet
- Celiac disease is diagnosed in six to eight percent of patients with iron deficiency anemia by small bowel biopsies in numerous studies involving rural and European populations.
- There is a paucity of data on the efficacy of small bowel biopsies in diverse urban populations.
- It is a routine practice among gastroenterologists to perform random small bowel biopsies in patients with iron deficiency anemia.

Methods

- Patients who were referred for evaluation of iron deficiency anemia from 2004-2007 underwent EGD and Colonoscopy.
- Endoscopic biopsies were obtained in a routine fashion using standard-size biopsies forceps.

Results

- Of the 298 patients, 41% of patients were Caucasian, with 36% African American, 15% Hispanic, and 5% Asian.
- 80.22% of duodenal biopsies were normal, 15.38% had mild to moderate chronic inflammation, and one patient had celiac disease (0.3 %).
- The patient with celiac disease was a Caucasian female who had scalloping and fissuring of duodenal folds, diarrhea, steatorrhea, hypocalcemia and hypoalbuminemia (p<0.05).



Average Lab Values

Na+	137	Hb	9.7
K+	4.7	Hct	29.2
Ca+	8.5	Platelet	276
Phos	3.5	Iron	42.8
Mg	1.9	Ferritin	240.8
Alb	3.0	% Sat	16.4%
TSH	1.7	TIBC	309.7

Duodenal Pathology

Negative	80.2%
Inflammation	15.3%
Invasive ACA	0.3%
Focal hemosiderin	0.3%
Spirochetosis	0.3%
Partial villous atrophy	0.3%
Celiac Disease	0.3%

Discussion

- The development celiac disease requires both genetic and environmental factors. The human major histocompatibility molecules DQ2 and DQ8 are essential genetic factors for the development of celiac disease.
- These histocompatibility locus antigen (HLA) genes occur in up to 40% of the Caucasian population. Those with celiac disease develop an immunological reaction to a fragment of the gliadin molecule in gluten that is resistant to digestion.
- Villous atrophy and intraepithelial lymphocytosis are the histologic hallmarks of the disease.
- A prospective study of a large cohort of newborns in Denver defined the risk estimate for developing CD (IgA anti-TTG positive by age 5) as 1 in 104 with a relative risk in non-Hispanic white children compared with Hispanic children of 3.33, and a very low prevalence in Asians who are rarely HLA DQ2+ or DQ8+.
- The cost of duodenal biopsy in patients in our endoscopy center is an additional charge of \$1750.

Conclusion

- The yield of random small bowel biopsies in routine work up of asymptomatic patients with iron deficiency/microcytic anemia in a diverse urban population is very low.
- Duodenal sampling during esophagogastroduodenoscopy in a diverse urban hospital setting still has a diagnostic benefit in patients with clinical and laboratory signs of malabsorption in addition to iron deficiency anemia.