

and tTG (IgA) gave a better diagnostic ability, especially if there was concordance in the results of the 3 antibodies. The positive predictive value of tTG was 100%, while the negative predictive value of the 3 antibodies was 60.3%, this may offer a good strategy for disease identification with 100% specificity of the 60.3% of untreated CD patients, and for the exclusion of nearly 100% of non-celiac patients from unnecessary biopsy.

The validity of testing for serological markers in our studied group seemed to be comparable with the average international figures (14-18), except for a lower sensitivity of tTG; our data gave sensitivity 60%, while most researchers agree to a sensitivity around 90-100% even those from developing countries^(12,19,20,21). In general these antibody tests are thought to fare less well in the clinical practice setting than in the research setting^(22,23). Standardization and quality control of these tests is an important issue^(24,25), and attempting a national standardization initiative to achieve this goal specifically in developing countries^(26,27) due to the some what peculiar state of CD diagnosis there.

Tissue transglutaminase, being simpler to perform than antiendomysial antibodies, with the high concordance between the two, has been repeatedly recommended as the serology of choice in developing countries^(19, 28). According to our results, we may recommend the cumulative outcome of tTG and both Antigliadines giving better prediction of the disease in these areas.

Patients with severe H.P changes, in the studied patients, showed higher positivity of serological markers, 89.7% for tTG, 75% for IgA AGA, and 89.7% for IgG AGA antibodies, in addition those patients gave the highest titers, much above the cutoff value. This same picture has led Barker et al

⁽²⁹⁾ from Canada, and Danaldson et al⁽³⁰⁾, at the University of Utah and the University of California Irvine, in their retrospective analysis to suggest raising the cutoff value of tTG to >100 IU (in patients with normal IgA), finding that about 96-98% of such patients had positive biopsy and proved to have CD, hoping in future to avoid totally the need for biopsy⁽²⁹⁾, but still this would need further approval by other studies in order to be applied practically, and the time to abandon an intestinal biopsy in the diagnosis of CD seems not to have come yet^(2,13,21,31).

Roughly, about 10% of cases of CD are difficult to diagnose because of lack of concordance among serologic, clinical, and histologic findings⁽¹⁹⁾. Even mild mucosal changes (Marsh I, II), could be a presentation of celiac disease, and in symptomatic patients, provided other diagnostic criteria were included (HLA haplotype ...etc), GFD would be indicated⁽³²⁻³⁵⁾. While in children in developing countries, mild-moderate mucosal changes are less specific as they could be induced by persistent enteric infection or parasitic infestation...etc, the so-called environmental enteropathy

^(28,36) rather than CD, still some recent reports are appearing from these countries, that even there, CD might present with variable histological pictures and the diagnosis maybe missed or delayed if based only on severe enteropathy⁽²⁷⁾.

Behera [India], have shown that patients with malabsorption harbor more pathogenic parasites as compared to healthy controls⁽⁸⁾. Giardiasis was diagnosed by duodenal biopsy in our studied patients in 11 out of 93 cases. All the 11 patients were seronegative for tTG & IgA AGA, 3 of them showed severe mucosal changes (Marsh III), with variable reactions towards only the IgG AGA, whether