

Project No. : 3416/2006

**Assessment of utility of serological markers in the diagnosis of
celiac disease and comparison with histopathology**

Principal worker

Lt Col Kavita Sahai

Unit

AFMC

OBJECTIVES

Celiac disease (CD), the most common food sensitive enteropathy in humans, with certain genetic makeup is caused by permanent intolerance for dietary gluten. There is prompt clinical and histologic improvement after withdrawal of gluten and relapse on reintroduction. It is now well known that the presence of auto-antibodies to a connective tissue element surrounding smooth muscle called endomysium is highly specific for CD. The target of this autoantibody is now known to be an enzyme called tissue transglutaminase (tTG). This study was planned to assess the utility of serological markers in the diagnosis of celiac disease and comparison with histopathology.

METHODOLOGY

Fifty cases who presented with clinical symptoms suggestive of Celiac Disease were included in the study and serological levels of IgA antibodies to gliadin and tissue transglutaminase were evaluated. Small intestinal biopsies were done where indicated and histology evaluated using Marsh criteria. Affected individuals were followed up for 24 months and response to gluten free diet assessed.

RESULTS

A total of 50 patients with ages ranging from 3 years to 41 years were evaluated in this study. 19 presented with diarrhea and unexplained anaemia. Eight patients presented with only anaemia, while 11 had diarrhea alone. 7 had short stature and 5 presented with failure to thrive. In addition 2 patients had extra intestinal manifestations in the form of clubbing. 17 showed positivity for anti gliadin antibody, while 9 cases were in the equivocal range. 14 cases were positive for anti-tTG antibody, while 32 were negative and 4 were equivocal. On comparing both antibodies, 13 of the 17 patients with elevated anti-Gliadin levels also had elevated anti-tTG levels. Correlation with small intestinal biopsy was attempted in these patients, however only 28 cases underwent biopsy. Most of patients were in Marsh classes III) with only 2 patients each in class II and IV. 4 patients had Marsh class I histological changes.

RECOMMENDATIONS

At least two serological markers be carried out in all cases to increase the specificity and sensitivity. Combining biopsy with positive serology gives 100% sensitivity, however in individuals with high risk symptoms and positive serology, biopsy may not be mandatory for diagnosis. Coeliac serology can be used for monitoring recovery and dietary compliance rather than a second mucosal biopsy. Gluten challenge is not to be performed routinely unless there is a specific diagnostic difficulty.