

POSITIVE AND NEGATIVE PREDICTIVE VALUES OF A COMBINATION OF CELIAC DISEASE SEROLOGY TESTS AS COMPARED TO INTESTINAL HISTOLOGY DAMAGE. Sonia Niveloni², Deborah Kryszak¹, María L. Moreno², Valeria Familiari¹, Anna Sapone¹, Emilia Sugai, Ana Cabanne, Zulema Kogan, Horacio Vazquez, Eduardo Mauriño², Carlo Catassi¹, Alessio Fasano¹, Julio C. Bai² ¹Mucosal Biology research Center and Center for Celiac Research, University of Maryland School of Medicine, Baltimore, MD (USA). ² Department of Medicine, Hospital de Gastroenterología “Dr. C. Bonorino Udaondo, Buenos Aires, Argentina.

Background: Currently, the gold standard for the diagnosis of celiac disease (CD) is an upper GI endoscopy (EGD) with an intestinal biopsy. During the past few years, several non-invasive serological screening tools for CD have been developed. To establish the true sensitivity and specificity of these serological tests, either alone or in combination, and to develop possible non-invasive CD diagnostic algorithms alternative to EGD, a study design in which an intestinal biopsy is the entry criterion is necessary. **Aims:** To establish the positive predicted value (PPV) and negative predicted value (NPV) of a combination of serological tests for CD using an intestinal biopsy as a gold standard. **Methods:** Sixty-eight consecutive patients (average age 38 yrs, range 18-80) referred by the Small Bowel disorders clinic to EGD and intestinal biopsy because of suspicion of intestinal disorders (chronic diarrhea, weight loss, abdominal distention, recurrent abdominal pain, and/or anemia) were enrolled between August 2004 and July 2005 (Group A). During the same period, a random sample of patients (n=98, average age 47 yrs, range 23-73) undergoing to an EGD for symptoms or disorders not related to CD was also enrolled (Group B). All duodenal biopsies were blindly scored using the modified Marsh criteria by pathologists (AC and ZK). At the time of the procedure, a serum sample was also obtained to check for serum anti-actin antibodies (AAA), anti-tissue transglutaminase antibodies (TTG), and zonulin levels. **Results:** Thirty-three of the 68 patients from group A (48%) and 1/98 (1%) from group B showed histological findings compatible with CD (Marsh IIIa-IIIc). Of the 34 CD patients identified, 27 tested positive to all three tests, 4 tested positive to TTG and zonulin, and 3 tested positive to zonulin alone. The combination of AAA, TTG, and zonulin tests showed a sensitivity of 79%, a PPV of 100%, and a NPV of 100%. **Conclusions:** In subject experiencing malabsorptive symptoms, the combination of positive AAA, TTG, and zonulin can be used to rule in CD without the necessity to perform an EGD. This approach would have allowed avoiding an invasive procedure in 38% of the cases of malabsorption enrolled in this study, an approach that could translate in cost saving and better patient's acceptance. The combination of negative AAA, TTG, and zonulin rules out CD without the necessity of any additional study. In these cases, an EGD could be still necessary to rule out other causes of malabsorption.