Abstract

Background/aims: Our aims were to establish the clinical utility of assessing the intraepithelial lymphocyte (IEL) density in intestinal biopsies from a large series of individuals and to determine the best threshold discriminating celiac disease (CD) patients and controls in two populations with different pre-test prevalence. Methods: We prospectively performed intestinal biopsy and CD-related serology in 349 subjects undergoing upper GI endoscopy. While 116 had symptoms suggestive of a small bowel disorder (high prevalence), 233 individuals were randomly selected from patients referred to endoscopy because upper GI symptoms (low prevalence). Diagnosis of CD was based on the concordance of classical histological features and a positive CD serology. Results: While 58 patients had a newly diagnosed CD (52 in the high and 6 in the low prevalence groups), 291 subjects did not meet diagnostic criteria of the disorder. Patients had a highly significant greater IEL density than controls (p<0.00001). Based on the ROC curve, a count of 22.8 IEL/100 epithelial cells had the highest performance for diagnosing CD in the overall population and for subjects in the high pre-test probability subgroup and 22.5% was the best cut-off for those diagnosed in the low risk population (area under the curves: 0.979, 0.979 and 0.993, respectively). An abnormal CD serology confirmed the diagnosis of CD in all the four patients with counts below 22.8%. Conclusions: Our study confirms that an IEL density of 22.8% is an adequate threshold to discriminate CD patients and controls in individuals irrespective of the prevalence of the disorder.

Keywords

Intraepithelial lymphocytes, celiac disease, intestinal mucosa, Malabsorption, small bowel mucosa, serology.