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Mini Review

Specific Antibodies for Coeliac Disease in Patients with Crohn's Disease in Two University Centers in Poland

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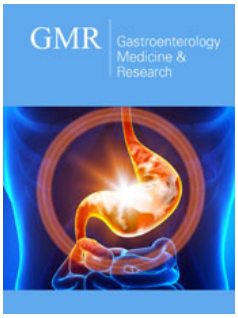

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Abstract

The previous studies assessing prevalence of coeliac disease in patients with Crohn's disease have produced conflicting results. Moreover, anti-tissue transglutaminase antibodies which are implemented in the diagnostic scheme of coeliac disease seem to have limited value for the diagnosis in Crohn's disease patients. So, we would like to share with the readers our experience of the study in 104 Crohn's disease patients, who were tested for anti-tissue transglutaminase antibodies, anti-tTG, anti-deamidated gliadin peptides antibodies, anti-DGP and anti-endomysium antibodies, EMA. We think that coeliac disease occurs among Polish patients with Crohn's disease with comparable prevalence to the general population. Moreover, anti-tTG, anti-DGP and EMA seem to be equally valuable for coeliac disease screening in patients with Crohn's disease.

Keywords: Coeliac disease; Crohn's disease; Screening

Introduction

Coeliac disease (CeD) and Crohn's disease (CD) are both chronic immune-mediated inflammatory bowel disorders, which manifest with overlapping gastrointestinal and extraintestinal symptoms such as chronic diarrhea, abdominal pain and failure to thrive. Both conditions may be associated with similar small intestinal lesions, including villous atrophy and intraepithelial lymphocytosis. These clinical and histopathological features make it challenging to diagnose CeD in CD patients [1].

The previous studies assessing the prevalence of CeD in patients with CD have produced conflicting results. Some authors believe that despite the increased positivity for serum coeliac-specific antibodies in CeD, no true association between both CeD and CD exists [1-3]. However, according to the recently published systematic review the risk for CeD among adult patients with inflammatory bowel disease is twice as high as in general population and this effect seems to be comparable for ulcerative colitis and CD. In contrast, the prevalence of inflammatory bowel disease in CeD patients has been described as eleven times higher than in general population [4]. In children, there are only a few case reports and small sample studies assessing coeliac serology in pediatric patients with CD [5,6]. As genetic factors are involved in the pathogenesis of both CD and CeD, some authors have tried to identify share common risk loci. The HLA-DQ2 and HLA-DQ8 alleles contributing to the CeD risk have been recently ruled out as the high-risk alleles for inflammatory bowel diseases and some of them, namely HLA-DQ8 may even protect from the development of CD [7]. However, four non-HLA loci: PTPN2, IL18RAP, TAGAP, and PUS 10 have all demonstrated genome-wide association with both CeD and CD [8]. Interestingly, coexisting CeD seems not to have an effect on the natural course or phenotype of CD [9].

Currently, the serological screening for CeD is based on highly sensitive and specific antibodies belonging to IgA and IgG classes, namely anti-tissue transglutaminase antibodies (anti-tTG), anti-endomysium antibodies (EMA) and anti-deamidated gliadin peptide antibodies (anti-DGP). The most sensitive serological marker for CeD is represented by IgA-tTG, therefore, it has been implemented in the diagnostic scheme of the disease. On the other hand, IgA-EMA have the highest diagnostic specificity if tested in expert laboratories [10].

Conflicting results concerning the diagnostic accuracy of these antibodies for the CeD diagnosis in patients with autoimmune disorders other than CeD have been reported. A high rate of false-positive coeliac-specific anti-tTG in patients with inflammatory bowel diseases has previously been confirmed [2,11]. Interestingly, the diagnostic utility of food-related antibodies, namely anti-DGP, has been shown to be comparable or even higher in CeD patients when compared to the standard tissue transglutaminase testing [12].

We would like to share with the readers the results of our prospective study in 104 consecutive pediatric and adult patients with CD diagnosed according to clinical, radiological, endoscopic and histopathological criteria (39 females, 65 males, mean age 26.3 years, range 8-64 years) from two tertiary university units in Bydgoszcz, Poland. In order to evaluate the occurrence of specific antibodies for CeD in all patients we assessed anti-tTG and anti-DGP measured by chemiluminescence assay (Thermo Fisher) and EMA measured by indirect immunofluorescence in both IgA and IgG classes. Anti-tTG and anti-DGP concentrations > 10 units (AU/mL) and EMA titer > 1:5 were considered as positive. Among the studied patients only one adult 38-year-old woman had elevated IgA-tTG (>100 AU/ml), IgA-DGP (>100 AU/ml), IgG-DGP (98 AU/ml) and IgA-EMA (1:3200) and eventually duodenal biopsy revealed chronic duodenal inflammation corresponding to Marsh 3c mucosal lesions. All the other patients displayed negative results in all types of antibodies. Hence, the prevalence of serologically identified CeD was 1 in 104 which is comparable to the general population in Poland (1:124) [13]. On this basis, we concluded that the prevalence of CeD among Polish patients with CD is to low to motivate screening for this condition in the regular workup of patients with Crohn's disease. Moreover, anti-tTG, anti-DGP and EMA seem to be equally valuable for CeD screening in patients with CD.

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