International Journal of Celiac Disease, 2017, Vol. 5, No. 3, 95-96
Available online at http://pubs.sciepub.com/ijcd/5/3/6

DOI:10.12691/ijcd-5-3-6

Deamidated Gliadin Peptide Antibodies; is the Time to Use as a Routine Test for Celiac Disease

Mohammad Rostami Nejad*

Gastroenterology and Liver Diseases Research Center, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran
*Corresponding author: m.rostamii@gmail.com

Abstract Antibodies to deamidated gliadin peptides (DGP-AGA) have newly been presented into the extensive variety of serologic examinations for celiac disease (CD). In compare with the modern AGA, DGP-AGA indicated a higher sensitivity and specificity for CD and simply identified by ELISA kits. Nevertheless, even though the very favorable outcomes, DGP-AGA are not yet regularly used in the serologic checkup for CD. An antibody approach could initiate development in the diagnostic precision of serology for CD screening.

Keywords: *deamidated gliadin peptides, celiac disease, serologic checkup*

Cite This Article: Mohammad Rostami Nejad, "Deamidated Gliadin Peptide Antibodies; is the Time to Use as a Routine Test for Celiac Disease." *International Journal of Celiac Disease*, vol. 5, no. 3 (2017): 95-96. doi: 10.12691/ijcd-5-3-6.

1. Introduction

Celiac disease (CD) is a chronic inflammatory disorder in the gastrointestinal (GI) tract triggered by dietary gluten in susceptible individuals, and it is improved if the patient consumes a gluten-free diet [1]. Numerous manifestations have been described in association with CD and many organs such as liver can involve in addition to small intestine [1,2]. Several liver disorders such as autoimmune hepatitis, hypertransaminasemia, primary biliary cirrhosis (PBC), nonspecific hepatitis, primary sclerosing cholangitis (PSC), and nonalcoholic fatty liver disease (NAFLD) have been reported in patients with CD [2].

2. Antibody Approach

Gatselis et al investigated the prevalence and clinical features of IgA and IgG antibodies against deamidated gliadin peptides (anti-DGP-IgA, anti-DGP-IgG) and IgA antibodies against tissue-transglutaminase (anti-tTG-IgA) in 668 patients with chronic liver diseases and without gastrointestinal symptoms. Seropositive patients underwent small-intestinal biopsy and HLA-DQ typing. The results of this study showed that a large number of patients with chronic liver diseases of different etiology had detectable CD related autoantibodies (0.9%). IgA anti-DGP was rather being better than IgA anti-tTG at undiagnosed patients with CD in this specific group of patients [3]. Naiyer et al. reported that DGP assays that detect antibodies to the deamidated gliadin peptide seem to have greater sensitivity for the detection of celiac disease compare to anti-tTG-IgA [4]. On the other hands, Volta et al. considered 144 patients with GI and non-GI suggestive symptoms for CD using IgG and IgA DGP-AGA, IgA tTGA, IgA EmA and followed by duodenal biopsy [5]. The result of this study shows that the combined for IgA tTGA and IgG DGP-AGA provides the best diagnostic accuracy for CD and allowing the identification of all CD cases with a very high specificity but the specificity of IgA DGP-AGA was low. In compatible to this study Rashtak et al. concluded that deamidated gliadin peptide is a better diagnostic test for celiac disease and TTG IgG does not have any additional diagnostic value over DGP IgG in routine CD diagnosis [6]. In addition, IgG tTGA should be performed to identify CD in cases with IgA deficiency. In contrast, recently, Volta et al. in their review article strongly emphasis that tTG antibodies display a higher predictive value than DGP antibodies, and must be still considered the best serological test for CD screening [7].

Samaşca et al. in 2008 determined anti-DGP-IgA, anti-DGP-IgG isotypes in 102 children (31 under GFD, and 71 with clinical markers of celiac disease). The results of this study showed that for the 0-3 year's old subjects, a sensitivity and specificity was 80% and 88.4% respectively, but for older children the sensitivity reduced and specificity was remained the same [8].

Marti et al. showed a significant association between serological tests, biopsy and the point-of-care test (POCT) results and the POCT yields sensitivity and specificity was reported 100% and 86% respectively [9].

I agree with new findings which confirmed that routinely test for IgA DGP antibodies is not valuable also in patients with chronic liver disorders. However, in accordance to Hong study, I point out that IgG DGP antibodies in parallel with IgA tTGA can significantly improve the identification of CD patients [10]. The combination of these two serological tests allows the identification of those patients who would be missed by

using only IgA tTG specially those asymptomatic patents who are latent CD and infected with various liver disorders.

3. Conclusion

The routine implementation of this serological work-up for CD screening could significantly improve the diagnostic accuracy of serology for CD screening and decreasing the quantity of the required tests with noticeable benefits in terms of cost-efficacy and follow-up in early-stage celiac disease.

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