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EDITORIAL

A tandem approach of tTGA testing: A new approach for celiac disease screening

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In this issue of the Indian Journal of Gastroenterology, Venugopal et al. [1] propose a two-tier auto-antibody testing approach, as a screening strategy for celiac disease. Making use of two sequential tests with opposing sensitivity and specificity is a new and interesting approach which could benefit patient care.

For the initial test, a highly sensitive but less specific test is used. This is followed by testing the resulting positive samples with a highly specific but less sensitive test [1]. This resulted in two transglutaminase IgA antibody (TGA) positive individuals (0.1%) within a group of 1917 healthy adults from three semi-urban areas in South India. Although it should be noted that possible IgA deficiency was not taken into account in this study.

This study illustrates the relevance of specificity and sensitivity of (diagnostic) tests and how these can have a major impact on results of clinical studies. Using only the highly sensitive test, the incidence of TGA would have been 5.89%; while with the sequential approach, the result is almost 60-fold lower. Unfortunately, only few studies so far describe in their materials and methods section the characteristics (i.e. specificity and sensitivity) of the TGA tests used. Case-control studies, as described in this issue by Venugopal and colleagues, are useful to calculate sensitivity, specificity, and receiver operator characteristics. One should keep in mind that these values may be somewhat biased because the pre-test probabilities are high in selected patient and control groups. In a population screening setting where the pre-test probability, i.e. prevalence, is (very) low, these numbers can change considerably [2]. Therefore, it would have been very interesting to know how many of the 5.89% individuals positive in the highly sensitive test had duodenal biopsy proven celiac disease. We do, however, realize that biopsies would have had, clinical, ethical, and financial consequences.

Whether in a clinical setting, where patients with complaints or at risk are tested, this approach will perform better and will be more cost effective than current clinical practice, i.e. one sensitive TGA test whether or not combined with a confirmation antibody test specific for another antigen (deamidated gliadin [DGPA] test) or testing for the natural transglutaminase (endomysium test) remains to be investigated. Such an approach could be investigated in a family screening study, which should include testing for HLA DQ2.2/2.5 and HLA-DQ8.

xIn population screening, this sequential testing approach may be highly cost effective, particular if the first test is a self-test which can be done at home without the need of health professionals and laboratories, provided that a total IgA test is included to exclude IgA deficiency. The debate about the effectiveness of screening for celiac disease in asymptomatic population is still ongoing [3, 4]. Studies using the proposed two-tier approach may be instrumental in providing data to recommend for or against population screening. In this respect, this study might be considered as a mind changing study in screening for celiac disease.

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