

RAPID DETECTION OF COELIAC AUTOANTIBODIES IN THE OFFICE

IR Korponay-Szabó¹, TM Raivio, K Laurila², J B Kovács³, É Nemes⁴, K Kaukinen⁵, M Mäki². ¹*Paediatric Research Centre, Univ. of Tampere, Finland and Dept. of Paediatrics, Univ. of Debrecen, Debrecen, Hungary.* ²*Paediatric Research Centre, Univ. of Tampere, Tampere, Finland.* ³*Heim Pál Children's Hospital, Budapest, Hungary.* ⁴*Dept. of Paediatrics, Univ. of Debrecen, Debrecen, Hungary.* ⁵*Dept. of Internal Medicine, Univ. of Tampere, Tampere, Finland.*

Aims: Coeliac disease can present with a wide variety of clinical symptoms ranging from asymptomatic patients to severely sick ones requiring quick intervention or in whom it is challenging to exclude other causes. Detection of antibodies against transglutaminase 2 (TG2) or endomysium (EMA) are very helpful in making a positive diagnosis. We evaluated whether rapid coeliac antibody detection at the point of care can reliably sort out coeliac patients and help in planning diagnostic procedures.

Methods: Antibody testing was performed by a commercial immunochromatographic rapid test (Biocard Celiac Disease, AniBiotech, Vantaa, Finland) which detects anti-TG2 antibodies from whole blood in five minutes by their binding to self TG2 antigen contained in the red blood cells of the sample. For the initial evaluation of the test kit, stored whole blood samples from 106 patients with untreated coeliac disease and from 99 patients with normal mucosa were blindly tested. The test was then carried out in the outpatient department office on 80 prospectively enrolled subjects aged 1–59 years (including 47 first-degree relatives of coeliac patients) with the suspicion of coeliac disease using fingertip or venous EDTA blood. The results were read onsite. Serum endomysial and anti-TG2 antibodies were separately determined. Patients with positive antibody results were sent to jejunal biopsy.

Results: The Biocard test had 97% sensitivity and 91% specificity for biopsy-proved coeliac disease on stored samples. From the onsite-tested subjects 11 clinical patients and 3 family members were positive with the Biocard test. Up to now, ten of them underwent a jejunal biopsy which showed severe villous atrophy in all, whereas six other patients with negative Biocard results who had endoscopy on independent indications had normal villous structure. In the last three Biocard-positive and sick patients, biopsy was performed within 36 hours after initial admission. The Biocard test was able to show positivity at haemoglobin levels as low as 68 g/l, and results were highly concordant with EMA and laboratory anti-TG2 antibody results (kappa value 0.89 and 0.88, respectively).

Summary: Rapid coeliac antibody testing was convenient and highly efficient in detecting coeliac patients.

Conclusions: Onsite detection of anti-TG2 antibodies is useful for rapid case finding and for the appropriate and fast use of invasive tools while sparing vulnerable patients unnecessary other diagnostic procedures.

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