

Clinical significance of borderline negative and low positive transglutaminase antibody levels in celiac disease

Authors:

Celina Turunen Beteta¹, Rakel Nurmi^{1,2}, Kalle Kurppa^{1,3,4,5}, Heini Huhtala⁶, Katri Lindfors¹, Laura Kivelä^{1,4,7}, Katri Kaukinen^{1,2}, Saana Paavola^{1,2}

Affiliations: ¹Celiac Disease Research Center, Tampere University, Tampere, Finland; ²Department of Internal Medicine, Tampere University Hospital, Wellbeing Services County of Pirkanmaa, Tampere, Finland; ³Tampere Center for Child, Adolescent, and Maternal Health Research, Tampere University, Tampere, Finland; ⁴Department of Pediatrics, Tampere University Hospital, Wellbeing Services County of Pirkanmaa, Tampere, Finland; ⁵The University Consortium of Seinäjoki, Seinäjoki, Finland; ⁶Faculty of Social Sciences, University of Tampere, Tampere, Finland; ⁷Children's Hospital, Helsinki University Hospital, Helsinki, Finland

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Abstract:

Introduction: Due to widening screening of celiac disease (CeD), Borderline negative and low positive transglutaminase 2 antibody (TGA) values have become increasingly common clinical conundrum. We investigated the significance of such findings in a large and well-defined patient cohort.

Methods: Altogether 311 IgA-competent adults with clinical suspicion or family history of CeD underwent duodenal sampling and testing for TGA and endomysial antibodies (EmA). EliA Celikey test values 7.0-14.0 U/ml were defined as low positive and values 3.0-6.9 U/ml as borderline negative. Besides conventional histology, small-bowel mucosal CeD-specific IgA deposits were determined as early markers of CeD.

Results: Altogether 39 individuals had borderline negative TGA and 36% of them were positive for EmA. Of them, 11/14 EmA-positive and 3/25 EmA-negative subjects were

diagnosed with CeD (PPV 36%). Twenty-eight subjects had low positive TGA and 79% of them were positive for EmA. All EmA-positive and 3/6 EmA-negative subjects with low positive TGA were diagnosed with CeD, providing a positive predictive value (PPV) of 89%. From the non-CeD subjects with borderline negative TGA, 48% had some signs of possible early disease, including IgA deposits, increased $\gamma\delta$ -cells and/or Marsh 1 in biopsy. All subjects with TGA $\geq 3.2x$ upper limit of normal had CeD.

Conclusions: Borderline negative TGA frequently implies CeD diagnosis, particularly in EmA-positive individuals, or it may be an indicator of early developing disease.