

■ ELISA/ACT Biotechnologies LLC ■

# LRA by ELISA/ACT®

## CLINICAL PEARLS UPDATE#22

---

### *Celiac disease*

February 23, 2004

Dear Colleague:

Our clinical pearl this week is on **celiac disease (CD) diagnosis and management**. CD is a medical dilemma both in diagnosis and treatment. Recent advances have suggested the limitations of gluten or gliadin antibodies, and more specific tests (tissue transglutaminase, tTG) are available. As the following pair of articles show:

1. Other conditions (like biliary inflammation and cirrhosis) can yield a 10+% prevalence of false positive tTG tests.
2. tTG values are age and sex specific.

Perhaps most important, knowing the presence of an antibody does not tell us its function... is it blocking and protective (beneficial) or is it provoking and reactive (harmful)? **Our LRA by ELISA/ACT® has been helpful in cases where functional information about reactive antibodies and T cells are useful in managing autoimmune conditions including celiac syndromes.**

We encourage you to share this valuable clinical update newsletter with your colleagues and staff so they can learn more about how our comprehensive approach can be applied to their practice with beneficial results. Please also let us know if any of your colleagues or staff would like to be added to our email distribution list.

We are grateful for the opportunities to be of service to you and your patients.

Sincerely,

**Russ Jaffe, MD, Ph.D., CCN, NACB**  
**Lab Director**

Bizzaro N, Villalta D, Tonutti E, Doria A, Tampoia M, Bassetti D, Tozzoli R. **IgA and IgG tissue transglutaminase antibody prevalence and clinical significance in connective tissue diseases, inflammatory bowel disease, and primary biliary cirrhosis.** *Dig Dis Sci* 2003;48(12):2360-2365.

Laboratorio di Patologia Clinica, Ospedale Civile, 30027 S.Dona di Piave (VE), Italy. nbizzaro@dacos.it

An association between celiac disease (CD) and other autoimmune diseases such as connective tissue diseases (CTD), inflammatory bowel diseases (IBD), and primary biliary cirrhosis (PBC) has been reported in several studies. However, a high rate of false positives in autoantibody testing was noted, especially when tissue transglutaminase (tTG) from guinea pig liver was used. Thus, the real prevalence of CD in CTD, IBD, and PBC is unclear. In a case-control study, 400 patients with CTD, 170 with IBD, 48 with PBC, and 120 healthy subjects were investigated for CD by the analysis of IgA and IgG tTG antibodies using the more specific human recombinant tTG immunoenzymatic assay. Patients and controls with positive findings were further tested for antiendomysial antibodies by indirect immunofluorescence and HLA typing, and those found positive by either of these tests underwent duodenal biopsy to confirm a possible diagnosis of CD. Twelve patients were positive for IgA or IgG tTG antibodies, showing an overall prevalence of 1.9%. Only 1 healthy subject (0.8%) had a low level positive reaction for IgA anti-tTG. Among the 12 patients and the healthy subject, only 2 (1 SLE and 1 ulcerative colitis patient) were subsequently confirmed to be affected with CD by positive EMA, HLA, and small bowel biopsy findings. The highest rate of false positives was found in PBC patients (10.4%). For these reasons, serological screening testing for CD is not recommended in CTD patients or in subjects affected with IBD or PBC, unless there is a relevant clinical suspicion of CD.

Tiberti C, Bao F, Bonamico M, Verrienti A, Picarelli A, Di Tola M, Ferri M, Vecci E, Dotta F, Eisenbarth GS, Di Mario U. **Celiac disease-associated transglutaminase autoantibody target domains at diagnosis are age and sex dependent.** *Clin Immunol* 2003;109(3):318-324.

Department of Clinical Sciences, University La Sapienza, Rome, Italy. claudio.tiberti@uniroma1.it

The contribution of age and/or sex to the transglutaminase (tTG) autoantibody response in celiac disease (CD) is not known. To gain insights into transglutaminase humoral autoimmunity at CD diagnosis, our aim was to characterize the autoimmune response against three tTG constructs [(full-length tTG(a.a.1-687), tTG(a.a.227-687), and tTG(a.a.473-687)] and to investigate into its relationship with CD patients' age and sex. One hundred seventy-five newly diagnosed CD patients (115 females and 60 males), subdivided into different groups according to age and sex, were studied using a serum 35S-radioimmunoassay. We found that among full-length tTG autoantibody-positive CD subjects (175/175), 50.9% (89/175) and 83.4% (146/175) had autoantibodies against tTG(227-687) and tTG(473-687) domains, respectively. Female patients of less than 4 years expressed tTG(227-687)Abs in significantly higher percentage and mean autoantibody titers vs. all other groups investigated, and tTG(473-687)Abs in significantly higher titers with respect to adult female patients. Our data identify a subset of CD patients showing a strong humoral tTG immunoreactivity at diagnosis, thus suggesting that age and sex influence the anti-tTG autoantibody response.



What we have come to call autoimmunity may be the cumulative result of a blocked effort of the body to repair itself. The above articles help us understand more deeply autoimmune activities. **LRA by ELISA/ACT tests and plans** identify the reactive causes of autoimmune induction for each individual. This allows personalized plans to reduce the **reactive burden by substitution while a repair / energizing alkaline way diet, supplementation plan, and healing actions can be concurrently engaged**. These can now be considered **first line comprehensive care** and a suitable platform on which to build any immune rebuilding, resetting clinical program.

