



Canterbury Health Laboratories

GLUTEN SENSITIVITY TESTING

5 October 2009

Gluten Sensitivity

Coeliac disease (gluten enteropathy) is the most commonly recognised manifestation of gluten sensitivity. Gluten and its component protein gliadin are found in wheat, barley and rye and amongst some other grains.

Gluten enteropathy has a general population prevalence of 1% and is up to 10x more common in patients with autoimmune diseases. It may result in a variety of clinical disorders that have intestinal malabsorption as their common cause e.g. iron deficiency anaemia, osteoporosis. Gluten sensitive patients may also be entirely asymptomatic or more rarely develop clinical manifestations seemingly unrelated to and in the absence of enteropathy.

One non-intestinal manifestation of gluten sensitivity is the rare itchy blistering skin disease, dermatitis herpetiformis. More recently some specific but rare neurological disorders have been associated with gluten sensitivity. While there remains some controversy around the strength of the association between these disorders and the serological evidence of gluten sensitivity it seems likely that sporadic cerebellar ataxia is one such rare disorder.

Serological screening for Gluten enteropathy

Currently there are four tests commonly available; IgA antibodies to smooth muscle endomysium (IgA EMA), IgA antibodies to tissue transglutaminase (IgA tTG), IgA antibodies to gliadin (a component of gluten) and IgA antibodies to deamidated peptide (dGP). If a patient places themselves on a gluten free diet all these tests may become negative over variable periods from weeks to months, with EMA generally the last to become negative.

Because these tests are used to screen for gluten enteropathy their diagnostic sensitivity needs to be high i.e. low false negative rate (1- sensitivity). However if their false positive rate (1- specificity) is relatively high, excessive numbers of patients may be referred for unnecessary invasive diagnostic testing (small bowel biopsy). Diagnostic sensitivity and specificity are like characters on the ends of a seesaw – if one increases the other decreases. It is up to an individual laboratory to define and justify an appropriate cut-off value that maximises the clinical utility of the tests provided.

At Canterbury Health Laboratories (CHL) we make available IgA EMA, IgA tTG and IgA gliadin. As a single screening test EMA has the greatest clinical utility but is non-quantitative. A close second to EMA is IgA tTG which has the advantage of being quantitative. To maximise clinical utility in screening for gluten enteropathy, taking into account that it is now common for people to restrict their diet of their own volition, requests for coeliac screening will result in testing for both IgA EMA and IgA tTG. Screening for IgA deficiency will be done automatically using the intrinsic characteristics of these tests. Quantitation of serum IgA concentration will be performed as an additional test only in suspected cases of deficiency or if specifically requested. If IgA deficiency is confirmed IgG tTG should be tested. IgA and IgG gliadin will only be tested if specifically requested.

John O'Donnell, Clinical Immunologist
Canterbury Health Laboratories

Canterbury Health Laboratories

Ground Floor, Cnr Hagley Avenue & Tuam Street, PO Box 151, Christchurch 8140