COELIAC DISEASE

Maulooda Abed

Coeliac Disease is a worldwide spread condition affecting 1:100-1:200 individuals. Coeliac disease, also known as celiac disease, is a common bowel condition that is caused by intolerance to a protein called gluten. Gluten is found in wheat, rye and barley, which are often used to make foods such as bread, pasta and biscuits.

It is a permanent food intolerance to ingested gluten in genetically predisposed subjects. Gluten intolerance is a unique model of autoimmune disease in which we can recognize the main environmental factor (gluten) and the more complex genetic background. It can result in malabsorption and is more common in northern Europe than the rest of the world. Almost 50% of the people are asymptomatic. Public anxiety over gluten has led to a widespread demand for gluten-free food, yet coeliac disease remains significantly underdiagnosed and some confusion remains regarding optimal diagnostic practices.

Coeliac disease presents at any age but in childhood it starts soon after starting on cereals presenting with diarrhea, malabsorption and failure to thrive. Affected children may have delayed puberty also. In such cases there is an increased risk of malignancy e.g. T cell lymphoma, small bowel carcinoma and squamous cell carcinoma of the oesophagus.

Public anxiety over gluten has led to widespread demand for gluten-free food, yet coeliac disease remains significantly underdiagnosed and some confusion remains regarding optimal diagnostic practices. Small bowel histology is the gold standard for diagnosis. High-quality commercial enzyme-linked immunosorbent assays for transglutaminase immunoglobulin A and deamidated gliadin immunoglobulin A and G are sensitive tools for screening, but almost 10% of coeliac disease is seronegative and serological testing is unreliable in the very young.

Coeliac disease(CD) antibodies may be transiently present in genetically predisposed children. To avoid unnecessary biopsies, serological mass screening procedures may be improved by repeating Anti-endomysium(EmA) and/or tissue-transglutaminase(tTGA) in initially seropositive young children after 6 months, before proceeding to biopsy. This may reduce the number of unnecessary performed biopsies with 85%.(1)

There are reports that fecal calprotectin concentration is increased in childhood CD, related to the severity of histopathologic findings. The
pathogenetic mechanism by which this happens in CD is a subject for investigation. (2)

One prospective study showed that the combined search for IgA, tTGA and IgG deamidated gliadin peptide antibodies (DGP-AGA) provides the best diagnostic accuracy for CD, allowing the identification of almost all CD cases. The serologic workup for CD screening could be significantly improved by the routine introduction of IgG DGP-AGA together with IgA tTGA. This would thus reduce the number of tests and give an obvious advantage in terms of cost-efficacy. (3)

From histological point of view intra epithelial cell infiltration by several lymphocyte subsets is becoming more and more important also for understanding pathogenesis of the disease. (4)

NICE guidelines on coeliac disease:

The advice in the NICE guideline covers (5):

People with symptoms and/or signs that suggest coeliac disease.
People with conditions that sometimes also affect people with coeliac disease such as type 1 diabetes, Down’s syndrome, or thyroid conditions.
People with close relatives (parents, children, brothers and sisters) who have coeliac disease.
It does not specifically look at people with other disorders affecting the digestive system.

NICE recommendations: When to offer testing:

Offer serological testing for coeliac disease to children and adults with any of the following signs and symptoms:
• chronic or intermittent diarrhoea
• failure to thrive or faltering growth (in children)
• persistent or unexplained gastrointestinal symptoms including nausea and vomiting
• prolonged fatigue (‘tired all the time’)
• recurrent abdominal pain, cramping or distension
• sudden or unexpected weight loss
• unexplained iron-deficiency anaemia, or other unspecified anaemia.

Offer serological testing for coeliac disease to children and adults with:
• any of the following conditions:
  – autoimmune thyroid disease
  – dermatitis herpetiformis
  – irritable bowel syndrome
− type 1 diabetes
  or
  • first-degree relatives (parents, siblings or children) with coeliac disease.

Consider offering serological testing for coeliac disease to children and adults with any of the following:

• Addison's disease
• amenorrhea
• aphthous stomatitis (mouth ulcers)
• autoimmune liver conditions
• autoimmune myocarditis
• chronic thrombocytopenia purpura
• dental enamel defects
• depression or bipolar disorder
• Down’s syndrome
• epilepsy
• low-trauma fracture
• lymphoma
• metabolic bone disease (such as rickets or osteomalacia)
• microscopic colitis
• persistent or unexplained constipation
• persistently raised liver enzymes with unknown cause
• polyneuropathy
• recurrent miscarriage
• reduced bone mineral density
• sarcoidosis
• Sjögren's syndrome
• Turner syndrome
• unexplained alopecia
• unexplained subfertility.

Coeliac disease is a global health problem that requires a multidisciplinary and increasingly cooperative multinational research effort. With greater awareness and non-dietary therapeutics, diagnosis and treatment of celiac disease will be increasingly prominent in medical practice.

REFERENCES

2. Ertekin V, Selimoğlu MA et al, Fecal Calprotectin Concentration in Celiac