

Research Article

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Food-Specific IgG Guided Elimination Diet; Role in Irritable Bowel Syndrome?

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Abstract

Functional gastrointestinal disorders (FGIDs) are disorders of the digestive system in which symptoms cannot be explained by the presence of structural or tissue abnormality¹. Irritable bowel syndrome (IBS) is one example of a FGID and, with prevalence ranging from 12-30% in the general population, IBS is one of the most common gastrointestinal disorders². IBS is typically characterised by abdominal pain, abdominal distension (bloating) and abnormal bowel habits and the diagnosis of IBS is based on symptoms and the exclusion of other organic diseases. Subtypes of IBS are defined by symptoms and a distinction is made between IBS with pain or discomfort and predominant constipation, IBS with diarrhoea, and mixed IBS. There is no cure for IBS and management of IBS can only focus on symptom relief³. This article reviews the evidence behind a potential role for IgG-guided elimination diet for those with IBS.

Key Words: Food intolerance, Food IgG, IBS, Elimination diet, Inflammation

Pathogenesis

The pathogenesis of IBS is very complicated and multifactorial and management remains clinically challenging. IBS affects quality of life and imposes a considerable burden on patients, doctors and the healthcare system and still the overall aetiology of IBS remains elusive. In saying that, there is a growing understanding of potential mechanisms involved in IBS, and it is known that the two main risk factors for development of IBS are gastrointestinal inflammation and psychological distress⁴; IBS is increasingly viewed as a low grade inflammatory disorder⁵. Multiple factors contribute to the pathogenesis of IBS including gut hyper-permeability ("leaky gut"), intestinal microbiota (the microbiological environment in the gut or gut flora) and food intolerance. These factors in turn are thought to evoke abnormal responses in key regulators of gut function; regulators of gut function including the hypothalamus-pituitary and gut-brain axes, enteric nervous system and the immune system^{3,6}.

Recently, Zhang et al have strongly argued that mast cells (which mediate immune responses) are the "remarkable players" in the pathogenesis and pathophysiology of IBS. Mast cell activation can be triggered by many factors, both immune and non-immune, including gut flora imbalance and factors linked to psychological stress. On activation, mast cells have been linked to the chronic pain, inflammation, disturbed gut motility and the gut permeabil-

ity that IBS is associated with⁷. There is evidence that mast cells can be activated through IgG-dependent mechanisms^{8,9} and this is significant, not only in IBS, but in relation to the inflammatory component of other disorders¹⁰.

Studies have shown that people with IBS have higher levels of food-specific IgG antibodies in their blood; much more than in "healthy" subjects^{11,12,13}. This suggests that the permeability of gut is increased, raising the possibility that undigested food proteins could be responsible for the inflammation and hypersensitivity observed in many patients with IBS. One recent report showed that when those with IBS were challenged with foods to which they reported food intolerance this resulted in epithelial breaks and increased inter-villous spaces, indicative of increased intestinal permeability¹⁴; this and other studies have suggested a causative effect of food in increased gut permeability in IBS³. This may also explain why increases in gut permeability brought about by alcohol, stress, diet, inflammation or changes in the gut flora have not only been implicated in IBS but also in other low grade inflammatory conditions such as obesity, fatigue, rheumatoid arthritis, and fibromyalgia.

Elimination diet

In 2004, to date the most rigorous study involving food-specific IgG guided elimination diet and IBS, was reported by Whorwell's

team in Manchester, UK, in collaboration with the York University Health Economics Consortium¹⁵. This double blind randomised control trial, with 150 IBS subjects, compared the effects of an exclusion diet based on the results of a YorkTest food-specific IgG test to that of a sham diet. There was a statistically significant 10% reduction in symptoms for those on the true diet compared to the sham diet, rising to a 26% reduction in symptoms for those who were fully compliant. Those who did not adhere to the diet did not see these improvements. The reduction in symptoms was higher for those who had a greater number of food-specific IgG antibody reactions. Following the reintroduction of foods, more people on the IgG based elimination diet had a return of their symptoms, compared with the sham group.

Similarly encouraging results for food-specific IgG guided elimination diets in those with IBS have since been reported with common themes. For example, significant improvements reported in IBS sufferers in terms of pain severity, pain frequency, bloating severity, satisfaction with bowel habits and effect on life in general with results correlating with improvements in anxiety and depression scores¹⁶. Significant improvements reported in stool frequency, pain and IBS Quality of Life (QOL) scores¹⁷: Decrease in symptom frequency and severity and a significant increase in overall health score with symptoms totally relieved in over 30% of the cases tested¹⁸. Other studies showed improvements for sufferers of IBS with predominant diarrhoea with reduction in pain, bloating level and frequency, general feelings of distress and total symptom score¹⁹, improvements for those suffering from migraine with IBS²⁰ and also for those with IBS related to Sjogren's syndrome²¹.

In the largest study of its kind, Allergy UK commissioned a retrospective postal survey of 5236 customers, who had elevated food specific IgG levels and had purchased a YorkTest food-specific IgG-guided diet programme. 3,626 stated that they had followed the diet rigorously and 76% of those reported improvement in their condition²². Patients with gastroenterological or psychological illness showed the greatest improvements and the results were noticeably better again in those with several different symptoms. 92% of those who had followed the dietary changes rigorously and responded positively, reported a deterioration in symptoms after reintroduction of the implicated foods showing that this is a specific and targeted approach. A subset of data from the study were further analysed which identified 777 out of 3026 subjects self-reporting to have IBS. 84% of these reported improvement in their condition following the food-specific IgG-guided elimination diet (data unpublished).

Conclusion

IBS is notorious for imposing a huge economic burden on healthcare systems which is partly due to the limited number of available treatment options, but also because of the lack of a diagnostic test for the condition⁶. So can food-specific IgG-guided dietary changes be beneficial for those with IBS? Food ingestion precipitates or exacerbates IBS symptoms via several possible mechanisms and food components, particularly proteins can be pathologically involved²³. "Leaky gut" increases the probability that larger food particles can enter the blood stream and this creates the potential for those food particles (specifically proteins) to trigger a

food-specific IgG immune response. Dietary approaches to help relieve IBS, which include the elimination of, for example, wheat, fibre and high FODMAP, foods show promise²³, but do not recognise the fact that IBS food triggers a) are unlikely to be limited to these foods alone and b) differ from individual to individual. An increasing number of studies are emerging that show a correlation between food-specific-IgG guided elimination diet and improvement in a variety of conditions including IBS. The point being here that each dietary intervention, on this basis, is personalised; dependent on specific tailored food-IgG test results; and provides a unique targeted approach.

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