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DIETARY MANAGEMENT OF IRRITABLE BOWEL SYNDROME

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Irritable bowel syndrome (IBS) is a functional bowel disorder characterised by symptoms of abdominal pain or discomfort that is associated with disturbed defecation.

PREVALENCE

IBS most commonly occurs between the ages of 20 and 30 years and women are twice as likely to suffer as men. It is estimated that 15% of the population will experience symptoms of IBS, with up to half of these presenting to primary care clinicians (Lee 2009). Recent trends indicate that there is a significant prevalence of IBS in older people. The true prevalence of IBS in the whole population may be higher, as it is thought that only a quarter of IBS patients seek medical advice.

CAUSES

Gut hypersensitivity, disturbed colonic motility, post-infective bowel dysfunction or a defective antinociceptive (anti-pain) system are all cited as possible causes. One study showed that the occurrence of bacterial gastroenteritis (Campylobacter, Shigella and Salmonella) in the previous 12 month period was strongly predictive of new onset IBS (Spiller 2007).

Stress commonly aggravates the disorder with 50% of IBS patients attributing the onset of IBS to a stressful event. Many patients believe that certain types of food such as lactose, gluten, coffee exacerbate their symptoms.

DIAGNOSIS

Making the correct diagnosis is crucial. A history of unexplained weight loss, rectal bleeding, family history of bowel or ovarian cancer or more frequent stool persisting for more than 6 weeks in the over 60's requires further investigation. A diagnosis should be considered if the person has abdominal pain or altered bowel frequency or stool form. This should be accompanied by two of the following four symptoms.

- Altered stool passage - straining, a feeling of incomplete evacuation and /or urgency.
- Passing of mucus.
- Abdominal bloating, distension, tension or hardness.
- Symptoms aggravated by eating.

Patients can present with other problems such as tiredness, nausea, urinary/ gynaecological symptoms, back pain, migraine and depression.

REVIEW OF ASSOCIATIONS BETWEEN DIET AND IBS

Many patient's with IBS changes their diets in order to control symptoms which can lead to an unnecessarily restrictive diet. This can lead to diets deficient in key nutrients such as vitamins or minerals.

The traditional dietary approach was to recommend a diet high in fibre but many patients find that this worsens their symptoms (Woolner 2000). Wheat, resistant starch, caffeine, fructose, sorbitol, alcohol and fizzy drinks have been documented frequently as causing problems.

DIETARY FIBRE

Fibre is defined as non-starch polysaccharides (NSP). Dietary fibre is food material that is not hydrolysed by enzymes secreted by the gastrointestinal tract.

Soluble NSP form a gel and are fermented by the colonic microbiota increasing bacterial numbers and colonic bulking activity. Soluble fibre is of benefit in patients suffering with constipation. Dietary sources include oats, psyllium, ispaghula, nuts and seeds, some fruit and vegetables (McIntyre 1997).

Insoluble NSP is not readily broken down by the gastrointestinal microbiota and it increases faecal bulk and decreases colonic transit time. It is found in wheat bran, corn, edible skins and certain vegetables. Wheat bran worsened symptoms in 55% of patients whilst only 10% reported improvement in constipation (Francis 1994).

WHEAT

Wheat is found in bread, many breakfast cereals, pasta, cakes and biscuits and is one of the major cereals consumed in Ireland. In IBS, wheat consumption is often associated with increased symptoms which may be due to the content of fibre, fructans or resistant starch. Increasing the variety of other cereals and reducing, but not necessarily, excluding wheat may be beneficial in IBS.

RESISTANT STARCHES

Resistant starch is the sum of starch and products of starch degradation not absorbed in the small intestine of healthy individuals. (Englyst and Cummings 1987) Digestibility of resistant starch in the large bowel is very variable. Anaerobic fermentation is the colonic phase of carbohydrate digestion; the main products are short chain fatty acids. Cummings et al 1996 found an average breakdown of 80-90%. The western diet contains 3-20g/day of resistant starches. Processing techniques, resistant starches used to partially replace fat and prepared chilled and frozen meals could increase consumption.

LACTOSE

One third of patients with IBS reported lactose intolerance when consuming up to 20g of lactose although only half were lactose maldigesters (Burden 2001). Undigested lactose passes into the colon where it can be fermented. Exclusion of lactose from the diet may not lead to complete symptom relief in IBS and may lead to an inadequate intake of calcium. Often people with lactose intolerance can manage 10 to 12g lactose per day if spread throughout the day. It is possible to provide a sufficient amount of dairy foods to maintain a balanced diet (Mascolo 1998).

Fructose

Incomplete fructose absorption can cause gastrointestinal symptoms of bloating, diarrhoea and abdominal discomfort (Skoog 2004). Patients with positive hydrogen breath tests for fructose are shown to benefit from a dietary fructose restriction (Sheppard 2006).

SORBITOL

Sorbitol is found naturally in fruits but it is also manufactured as a low calorie sweetener, e.g. in sugar-free chewing gum, sweets and diabetic products. In large quantities, 30g/day it causes osmotic diarrhoea but patients with IBS maybe symptomatic at lower amounts (Thomas 1992).

CAFFEINE

Caffeine has stimulatory effects on the digestive system but there is little evidence that it will cause gastrointestinal dysfunction. Advice should be targeted at patients consuming large quantities.

PROBIOTICS AND PREBIOTICS

In randomised control trials of probiotics, studies have shown improvements in abdominal pain, bloating and wind. Studies varied in the length of treatment, number, type, dosage and strengths of probiotics used. One study by Brenner 2009 showed that using *B. infantis* 35624 at dosage level of 108 cfu is effective in reducing symptoms of IBS by 4 weeks. *L. plantarum* DSM 9843 also relieved abdominal pain and discomfort.

Prebiotics are defined as a non-digestible food ingredient that affects the host by stimulating the growth and/or activity of one or more bacteria in the colon and may be beneficial. More controlled studies may be required. These include fructo-oligosaccharides (FOS), inulin, lactulose and galacto-oligosaccharides (GOS).

Synbiotics are defined as a mixture of pre and probiotics which benefits exceed the individual effects (*Bifidobacterium* and Inulin).

COLONIC FERMENTATION

Some of the symptoms of IBS such as bloating, wind and diarrhoea may be due to colonic fermentation by intestinal microflora of certain dietary constituents to short chain fatty acids and gases (Barbara 2005). The dietary constituents include non absorbed lactose, dietary fibre/non-starch polysaccharides, resistant starches and oligosaccharides from wheat and other grains.

PEPPERMINT OIL

In studies with peppermint oil was found to be better than placebo when taken 2-3 times daily. 50% of patients reported relief of symptoms although study numbers were small. (Napoli 2009)

ALOE VERA

Aloe vera is not recommended for the treatment of IBS. (NICE 2008)

RECOMMENDATIONS

Elaine has a specific interest in diet and irritable bowel syndrome. In practice she has found patients have got significant relief from symptoms by simple, practical and sustainable dietary intervention.

Dietary advice will vary depending on the symptoms such as diarrhoea and/or constipation, abdominal bloating and therefore needs to be tailored to the individual. It is advisable to receive expert professional advice on diet and nutrition for IBS, to ensure a healthy balanced diet. It is not advisable to follow restrictive diets eliminated major food groups as this may lead to vitamin and mineral deficiencies. It is important to monitor, support the patient and adjust diet if symptoms don't resolve with the initial treatment.

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