

IRRITABLE BOWEL SYNDROME

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Recently updated.

Irritable bowel syndrome (IBS) is one of the functional GI (gastro-intestinal) disorders, more recently described more accurately as a DGBI (disorder of gut-brain interaction) which is a group of disorders usually defined as syndromes (ie collections of symptoms), in the absence of any known structural abnormalities, inflammatory, infectious, metabolic or neoplastic causes. The opposite of a functional GI disorder would be an organic GI disorder, where there is either a structural, inflammatory, infectious, metabolic, or neoplastic cause identified or suspected.

In the past 3-4 decades, medical practitioners, especially in this area, have moved away from the reductionist model where a single underlying biological etiology is identified, to a more integrated, **biopsychosocial** model of illness and disease (Drossman, Gastroenterology 2006; 130:1377).

This means that functional GI disorders are associated with relationships between early life events involving genetics and environment, psychosocial factors including stress, coping skills and social support, altered gut physiology in areas of motility, sensation, microscopic inflammation, and altered bacteria, and an interaction of psychosocial factors and altered gut physiology via the “brain-gut axis”, also known as the CNS-ENS (central nervous system-enteric nervous system) axis.

Some functional disorders can be primarily disorders of motor dysfunction, such as fecal incontinence, some are primarily understood as amplified central perception of normal visceral input, such as functional abdominal pain syndrome.

Irritable bowel syndrome is thought to be more complex and results from a combination of dysmotility, visceral hypersensitivity, mucosal immune dysregulation, alteration of bacterial flora, and dysregulation of the CNS-ENS (central nervous system-enteric nervous system) axis. The contribution of these different factors may vary between individuals, or within the same individual over the passage of time (Drossman, Gastroenterology 2006; 130:1379-80). Irritable bowel syndrome may have components of allodynia, and hyperalgesia, which are

two components of increased intensity of pain associated with normal (allodynia) or painful (hyperalgesia) physiological functions of the intestine such as peristalsis or distention.

Functional disorders are divided into 6 groups in adults, esophageal disorders, gastroduodenal disorders, bowel disorders, functional abdominal pain syndrome, gallbladder and sphincter of Oddi disorders, and anorectal disorders. Each of these groups has between 3 and 5 subgroups, and some of those subgroups have further subclassifications.

Irritable bowel syndrome is one of 5 different functional bowel disorders, and is defined as recurrent abdominal pain or discomfort occurring for at least 3 days per month over the preceding 3 months, associated with either improvement with defecation, onset with a change in frequency of stool, or onset with a change in the forms/appearance of the stool. Irritable bowel syndrome is sub-classified into IBS-C (constipated) with hard or lumpy stools more than 25% of the time, and loose or watery stools less than 25% of the time, IBS-D (diarrhea), loose or watery stools more than 25% of the time, and hard or lumpy stools less than 25% of the time, IBS-M (mixed), hard or lumpy stools more than 25% of the time, and loose or watery stools more than 25% of the time. (A fourth group is “unsubtyped IBS”).

If you have abdominal pain, or bloating, in the absence of any abnormality of bowel function, then IBS is not the best label for your condition, and you should read the paper on my website, entitled “BLOATING”, and the other paper entitled “functional bloating (from IFFGD)”.

The diagnosis of irritable bowel syndrome can usually be made by the history, physical examination, and a limited number of laboratory tests, including blood work, to rule out signs of organic disease such as anemia, iron deficiency, malabsorption, and inflammation. The diagnosis may or may not include endoscopic tests such as sigmoidoscopy or colonoscopy, depending on other symptoms, and the age of presentation or evaluation.

Irritable bowel syndrome is distinctly different from the other functional bowel disorders, such as functional bloating, functional constipation, functional diarrhea, and also different from functional upper GI syndromes such as

functional dyspepsia, functional vomiting, or chronic nausea, most of which are thought to arise from the stomach or duodenum.

Nevertheless, patients may experience a variety of functional GI disorders, which may vary from time to time and patient to patient.

Irritable bowel syndrome is common, and possibly the most common reason for patients to be referred to a gastroenterologist. Irritable bowel symptoms are even more common, and we draw the distinction between symptoms which are so common, and not necessarily markers of disease, such as diarrhea or abdominal pain with severe stress, exams, public speaking etc., as opposed to chronic symptoms which are defined as a disease when they cause a patient to seek medical attention, and obviously have disrupted the normal life of the patient.

MEDICAL APPROACH AND MANAGEMENT OF IBS.

The gastroenterologist begins with a history, and identifies the symptoms, both the positive symptoms that are consistent with IBS, and the absence of other symptoms that suggest an alternative diagnosis. The history involves timing, severity, relieving and exacerbating factors, and a review of other medical, surgical, and psychological factors, as well as potential social factors including family background, beliefs, learning, support systems, and illness behaviors.

The physical exam involves the absence of any signs of organic disease, and occasionally the presence of some specific findings on examination of the abdomen, which can be highly predictive for IBS. Often the physical exam is completely normal or indicates mild diffuse tenderness over the areas of the bowel.

Laboratory studies as previously described are usually limited to blood tests, sometimes stool tests, and occasionally abdominal x-ray or abdominal ultrasound.

Endoscopic tests may include sigmoidoscopy or colonoscopy, but there is ongoing debate whether these tests are required initially, and it is my preference to reserve these tests, in most young and otherwise healthy patients, until there is a problem with response to management. Patients over 40, however, or with a family history of colorectal neoplasia (polyps or cancer), will need colonoscopy.

Management of IBS requires first a good patient-physician relationship, both at the level of the primary care practitioner (family doctor or nurse practitioner) and at the level of the gastroenterologist. The second step is providing reassurance about the absence of organic bowel disease, and many patients are concerned that they have IBD (inflammatory bowel disease) such as Crohn's disease or ulcerative colitis, or bowel/colon cancer. Anxiety about undiagnosed GI disease will often lead to exacerbation of the very GI symptoms that are causing the patient to be worried about undiagnosed GI disease.

Management of IBS then requires a good understanding of what the patient expects or is requesting, and depending on the specific symptoms, management may be dietary, psychological, pharmacological or involve multiple approaches.

In the past, management of IBS has been somewhat focused on reassurance and management of psychological factors including stress, but more recently, there has been a significant and helpful shift, in my opinion, towards dietary factors. As mentioned previously, there can be different amounts of psychosocial, motility, dietary or pain mechanisms in different patients, or even in the same patient at different times.

Management of IBS most commonly includes an attempt to regulate bowel function, and would address the main abnormality of bowel function, i.e. increasing the bowel frequency and stool softness in IBS-C, and reducing the bowel frequency and increasing stool form and firmness in IBS-D. We often use psyllium such as Metamucil, and although most patients see this as a gentle laxative for treatment of constipation, it can work very well as a binding agent to improve the diarrhea component, and obviously therefore, especially for IBS-M, psyllium can treat both extremes of bowel function. The dose should be small, and increased very slowly, and associated with generous amounts of liquid, and some patients find that psyllium constipates them, if they do not drink enough - for this reason I prefer and recommend the powder, as opposed to the capsules or the wafers. I start with 1 teaspoon daily or twice daily, and rarely increase the psyllium beyond 2 teaspoons twice daily. I find that patients on a tablespoon or two, especially if they start at this level, often develop significant bloating and discomfort, and quite quickly give up this treatment.

Management of IBS-C or IBS-D can also involve medications to address the constipation or the diarrhea.

Management of all types of IBS can include medications to address the pain, but it is considered inappropriate to prescribe opiates or narcotics, with the occasional exception of a drug such as Lomotil or codeine, for chronic diarrhea. Pain is best managed by simple measures such as Tylenol, local measures such as heating pads or warm baths, rest or relaxation, or exercise. I prefer to avoid anti-inflammatory painkillers (such as ibuprofen, Advil, Motrin, Aleve, and aspirin) because of their potential side effects of ulceration in both the upper GI tract and also in the colon. Other medications aimed primarily at pain and spasm include Buscopan, Dicyclanole (pinaverium), and Modulon.

Irritable bowel syndrome can be treated by a variety of other interventions, and common areas include low-dose tricyclic antidepressants, which are now called neuromodulators, which improve pain and gut motility, as well as improving sleep, sometimes but less commonly regular dose antidepressants or anti-anxiety agents, often dietary interventions, and less commonly, treatment of gut microbiota (this area would include prebiotics and probiotics). Some patients need psychological or psychiatric interventions, but this would be a minority, and generally only the most severe patients who may have histories of depression, anxiety, previous physical or sexual abuse, or ongoing psychiatric or psychological issues above and beyond the IBS. Finally, some patients may need to explore complementary or alternative treatment options, but unfortunately the research is weak or nonexistent that these treatments make a major difference in the long run. Hypnosis or cognitive-behavioural therapy may help a subgroup of patients.

I would like to briefly expand on the dietary management, and the treatment of gut microbiota, and there may be poorly understood or unrecognized links between these two areas of treatment.

DIETARY MANAGEMENT OF IBS

IBS is frequently associated with abdominal pain or altered bowel function, related to the act of eating. The challenge is to identify if it is a specific component of the diet, or if it happens with virtually anything that stimulates the stomach and soon thereafter, the small and large intestine. The gastrocolic reflex is a normal response, with increased bowel activity (including an urge to defecate)

within 30 minutes of a meal, and the gastrocolic reflex can be abnormally vigorous or over-active in IBS, and can be a target of medical treatment.

On the other hand, many patients identify certain foods that appear to exacerbate IBS, and in our experience, these are most commonly fatty or greasy foods, red meat, and sometimes spicy foods, dairy products, possibly grains, wheat, or gluten, and more recently, possibly excess fruits or vegetables of certain types. Lactose intolerance should always be excluded by a brief period (2 weeks) of cutting out all dairy (milk, cheese, ice cream, and yogurt) and then reintroducing dairy to a significant extent to see whether this is associated with symptoms of IBS. If there is a clear link, then the patient should switch to lactose-free dairy products. In my opinion and management, it is rarely necessary or useful to perform blood or breath-tests for lactose intolerance.

IBS may be successfully managed, or at least significantly improved, by avoiding fatty or greasy foods, especially fries, hamburgers, gravy, bacon, pork, and other foods cooked or served with significant amounts of fat, oil, or butter. Red meat seems to be poorly tolerated by some patients, even when the cut of meat is relatively lean, but the worst is often a prime rib or a juicy/fatty (and therefore tasty) steak.

Some patients with IBS have been advised, or have researched themselves, that they should increase their fruit, vegetables and fiber content, and we now think that there may be “too much of a good thing”, although most North Americans have an inadequate intake of dietary fiber. A number of foods, but especially fruits and vegetables can be classified as to the content of FODMAP’s, (an acronym meaning fermentable oligosaccharides, disaccharides, monosaccharides, and polyols). These are natural sugars and other chemicals (not pesticides or contaminants), occurring in certain fruits, vegetables, and other dietary components, which may cause some patients to have increased pain, bloating, gas, and possibly diarrhea, less commonly constipation. There is a large body of solid science and research to support that high FODMAP foods may exacerbate IBS, (and even possibly IBD), and the internet provides many descriptions and lists of high and low FODMAP foods and diets – (you will easily find a “single page FODMAPS sheet, here on my website). These diets may require the assistance of a dietitian, and the good news is that it may not be an “all or nothing” situation,

but there may be certain foods on these lists that can be reduced significantly, avoided, or possibly increased, or substituted, depending on the FODMAP content.

Finally, and partly related to the FODMAP's theory, many patients feel that a gluten-free or gluten-reduced diet has helped them manage their IBS symptoms. While a number of patients appear to have non-celiac gluten sensitivity, this is a very controversial area, and the gluten-free diet is expensive, can be nutritionally inadequate, and can put patients at risk for inadequate calories, or other components of the diet (see the paper on my website from MacLean's about the "dangers of the gluten-free diet"). While celiac disease has symptoms and signs very similar to IBS, we are not currently enthusiastic about the use of the gluten-free diet for IBS. This is intensely controversial, and often comes up when patients seek advice from complementary/alternative practitioners such as naturopaths or "nutritionists" (this latter term does not apply to registered dietitians).

The last area of dietary management in IBS is related to the diagnosis and treatment of food allergies. This is an intensely controversial area, but unfortunately, while frequently suspected or even diagnosed by patients, or more commonly by alternative practitioners, a true food allergy, in a conventional medical sense, is a serious illness, associated with either wheezing or rash, sometimes hives, or swelling of mouth, face or eyes, and usually is associated with either eggs, soy products, fish or shellfish products, pea- and tree-nuts, or dairy protein components, as opposed to lactose.

IBS is classically associated with food intolerances, rather than food allergies.

The much more controversial area (and unfortunate in my opinion) consists of "food allergies", often diagnosed by blood tests (especially IgG allergy blood tests, often sold by naturopaths), and there is very little science behind this area of diagnosis and treatment. Many leading allergy and immunology organizations have written statements discounting this area and "technology", as being unproven, expensive, and misleading.

In summary, it is rare, if ever, that we would diagnose a true food allergy as a cause for IBS, although there are other potentially allergic or immunological upper GI disorders, including celiac disease, and eosinophilic esophagitis.

MODIFYING GUT MICROBIOTA FOR TREATMENT OF IBS

There has been a tremendous research interest in the gut microbiota, in many diseases, including IBS, IBD, and a variety of other gut and liver diseases, and now other diseases outside of the GI tract, including heart disease, obesity, and possibly psychological or psychiatric disease.

While IBS patients may have differences in the gut microbiota, compared to asymptomatic control individuals, there are no good ways to diagnose this imbalance, and the gut microbiota cannot be assessed by simple stool cultures, or diagnostic tests for yeast or other parasites in the stool. At the current time, there is still no good evidence for probiotics significantly improving IBS long-term, but there is a tremendous market, and there is a wide range of different probiotics on the market. It remains unclear which species or groups of species should be provided for treatment of IBS. There is some very limited evidence to support probiotics such as Align, Tuzen, and perhaps Activia, but unfortunately all currently available probiotic therapies produce effects only while they are continually taken, and there has been no effective mechanism for altering gut microbiota long-term. For the same reason, antibiotics have been used, and in the United States, and more recently in Canada, there is a significant interest in small intestinal bacterial overgrowth, leading to studies of rifaximin, but this drug is not currently available in Canada for treatment of IBS. While some patients and physicians are enthusiastic, there is an equal or larger number who do not believe in the evidence provided.

Prebiotics are chemicals which are thought to feed the “good bacteria”. The 2 leading prebiotics are oligofructose (from various sources including oat hull fibre), and inulin (from various sources including chicory root). Ironically these are also found in the list of high FODMAPs foods, and at times can lead to significant bloating, gas, and diarrhea. They are used as “fiber supplements” in a variety of dietary products, including some breakfast cereals, some breads, some granola bars, and some pasta products (eg Catelli Smart pasta). They are often used for “fiber-enriched” products and should be distinguished from “high-fiber” products (for further discussion of this topic, see the video, entitled “Informing our patients-communicating the difference between marketing and medicine” found

on the CDHF (Canadian Digestive Health Foundation) website – link=
www.CDHF.ca/Marketing&Medicine).

Good luck with your journey of discovery and understanding of your IBS. More information is available from the AGA at <https://patient.gastro.org/irritable-bowel-syndrome-ibs/>, and also from CAG, CDHF, ACG and the GI Society (“badgut.org”), all on my website under Professional Societies, or the Self Help section.