Stress, Irritable Bowel Syndrome And Inflammatory Bowel Disease

Irritable Bowel Syndrome (IBS) is characterized by chronic abdominal pain, discomfort, and irregular bowel movements. Researchers believe that this is due to the fact that nerves in the intestinal wall do not react normally to food and gas passing by, causing muscles in the colon contract erratically. As a result, food travels too slowly or too rapidly, causing constipation or diarrhea. IBS patients often experience both these symptoms regularly, in addition to abdominal pain, gas and bloating. The diagnosis requires a year's history of at least 12 weeks (not necessarily consecutive) of pain or abdominal discomfort that is relieved with defecation and/or is associated with a change in stool frequency or form. However, the diagnosis is difficult to make since unlike other gastrointestinal diseases, there are no structural changes. This, as well as the fact that symptoms are usually related to stress, has led many doctors to dismiss complaints as being psychosomatic in origin. In addition, up to 40 percent of patients have increased anxiety levels similar to those reported in other presumed "functional" disorders like fibromyalgia and chronic fatigue syndrome. IBS has also become a wastebasket diagnosis for anyone with unexplained abdominal distress or significant change in bowel habit, which is why it is the most common disorder reported by gastroenterologists.

IBS is estimated to affect one in five Americans, including 2.5 million children. The disorder tends to run in families since three out of four kids with IBS have at least one parent or sibling with gastrointestinal problems. Symptoms can start as early as five years of age but more often begin around the age of 10. Although they may temporarily disappear during early adolescence, there is usually a recurrence a few years later and the condition becomes chronic with intermittent periods of relief that vary in duration. IBS may follow an infection, suggesting that the immune system may play a role. The disorder can be managed but not cured by adding fiber to the diet and avoiding certain triggers. Lotronex was hailed as a breakthrough drug when it was released in 1999 but had to be withdrawn less than a year later because of severe side effects and several possible deaths. Zelnorm, another IBS drug introduced in 2002 with a massive publicity blitz, was also banned earlier this year for similar reasons. Because of numerous complaints, the FDA reversed itself and both drugs have since been reapproved for severe diarrhea or constipation not responsive to other medications, but with strict warnings and restrictions. Unfortunately, Lotronex worsens constipation and Zelnorm causes diarrhea. Most IBS patients suffer from both complaints, so that these drugs are two-edged swords with limited benefits and significant risks. Since there is no effective treatment, the most effective way to manage IBS is to prevent attacks. Various risk factors, triggers and influences shown below emphasize the important role of stress.
How stress can affect the development and modulation of IBS symptoms. Different stressors may trigger the onset of symptoms as well as contribute to their persistence depending on genetics and other factors. (From Mayer et al. *Am J Physiol Gastrointest Liver Physiol* 280: G519-G524, 2001)

For all these reasons, stress reduction approaches should be instituted in the management of all IBS patients. Options include various meditative and progressive muscular relaxation procedures, regular exercise (walking, jogging, yoga), insuring regular sleep, providing counseling and support and avoiding foods and stressful situations that have been found to trigger attacks. It is believed that the basic problem is that the brain and autonomic nervous system respond excessively or erratically to normal gastrointestinal sensations. A large NIH study is currently in progress to test this hypothesis in IBS patients with similar disease severity. Those in the first group are taught progressive muscle relaxation techniques to reduce tension and stress. A second group focuses on identifying situations and thought processes that aggravate their symptoms so they can learn not to overreact to challenges or "catastrophize" perceived threats. They can learn not to react overly anxiously to events in their lives--or "catastrophize". The third group is given educational materials on the physiology of IBS to determine if an understanding of this might reduce attacks. Volunteers in all three groups receive 10 weekly sessions with a psychologist and a follow-up meeting after six months. Researchers will also use sophisticated brain imaging and other techniques to investigate feedback mechanisms between the GI tract and the brain, since some studies suggest that activation of the limbic system is associated with flare-ups.

Inflammatory bowel disease (IBD) refers to a group of disorders that include ulcerative colitis, Crohn's disease, and bacterial infections. More than 600,000 Americans a year suffer from IBD symptoms such as abdominal pain, severe cramps, nausea, diarrhea or loose stools containing blood, pus and excess mucus. Ulcerative colitis causes ulcers in the lower part of the large intestine, often starting at the rectum, that frequently bleed. Crohn's disease patients have similar ulcerations throughout the small intestine, especially the ileum, and although the colon can be involved, the rectum is usually spared. What causes these disorders
has not been determined but it is believed that both result from exaggerated immune system responses to normal bacteria and food in the gut that are mistakenly perceived as being foreign. In an attempt to attack and destroy these presumed invaders, white blood cells accumulate in the lining of the bowel wall producing chronic inflammation, ulcerations and tissue damage.

There is little doubt that stress can aggravate and precipitate attacks of IBD. One study found a significant relationship between exacerbation of ulcerative colitis and long-term stress as rated on the Perceived Stress Questionnaire. In another, researchers studied patients with inactive ulcerative colitis and healthy controls. Both groups were told they were participating in a study to assess the relationship between their intelligence and their responses to stress. They were then given an IQ test to complete in 50 minutes that should have taken an hour or more while contrasting types of music were played into each ear. They were also reminded, at increasingly frequent intervals, to increase their effort to finish the test. Blood pressure, heart rate, and blood- and mucus-levels of inflammatory markers were measured before, during and after completing the test. While the cardiovascular responses were similar, systemic and mucosal inflammation were greater in the ulcerative colitis group as assessed by interleukin-6, tumor necrosis factor, natural killer cells, platelet activation, and other markers of increased immune system activity. Lifetime psychiatric diagnoses are associated with an increased incidence of Crohn’s disease. Further proof of the influence of the brain comes from the observation that if the spinal cord is severed above the level of T4, where nerves to the gut begin, ulcerative colitis patients have a complete remission. Similarly, large studies show that patients with spinal cord transection at this level, but not below, never develop ulcerative colitis. All of the above confirm René Dubos’ assertion,

"What happens in the mind of man is always reflected in the diseases of his body."

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