Diet and Inflammatory Bowel Disease

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Diet and its relationship to health is probably more contentious than child rearing. Everyone feels they are experts and therefore can avoid a rational discussion of their beliefs and dogma.

In spite of this minefield, we need to understand the available data to reassure patients and their families that their disease is manageable without descending into the false beliefs of their local Health Guru.

Diet needs to be considered from different sides:

Do dietary factors cause:

	Answer
IBD (Crohn's Disease and/or Ulcerative Colitis)	NO
Symptoms	YES
Onset and flares of disease	NO
Induction of remission	NO
Avoid long term complications	NO
Prevent colon cancer	NO

So first what is Inflammatory Bowel Disease?

The name says it all! It is a condition where the wall of the gastrointestinal tract becomes inflamed. The disease is characterized by the immune system attacking the gut wall for reasons that are not clear to us. In fact, the bowel may simply be suffering collateral damage due to a deranged immune system. This is the case in IBD while in others who have joint disease it is Rheumatoid Arthritis and in others it is a skin disease like, Psoriasis. This is a critical factor in understanding these diseases. It is not the target organ that is responsible for the disease, it is the immune system. Treatment therefore has to be aimed at the immune system to really influence the disease. Everything else is simply palliative. Often critically important, but in the end palliative.

This is a bit like warm sunshine to treat Tuberculosis before the appropriate antibiotics are discovered. Useful but now archaic,

There are two main varieties of IBD:

Crohn's Disease which can extend from the mouth to the anus. The area involved has an influx of inflammatory cells that cause patchy swollen tissue and mucosal ulcers. These ulcers are often small and scattered. The thickened wall tends to fibrose down to cause a narrowed bowel and deep ulcers which can extend into surrounding tissue causing fistula. While the disease occurs from the top to bottom of the gut it is most common in the ileum at the end of the small bowel, and in the colon.

In Ulcerative Colitis the mucosa carries the brunt of the disease with superficial spreading ulcers over the whole wall of the colon. The bowel wall tends to get thinner rather than thicker, as in Crohn's Disease.

This disease distribution explains the symptoms experienced. In Crohn's Disease the inflammatory load makes the patient systemically ill and the narrow bowel crampy. In Ulcerative Colitis the extent of superficial ulceration causes the classical bloody diarrhoea.

In addition to these gastrointestinal symptoms the auto immune onslaught may cause skin rashes and arthritis which usually but not always improve as the disease comes under control.

For the past 100 years diet has been recognized to be an important factor. Nuts cause pain and bowel obstruction in Crohn's Disease patients while lactose causes diarrhoea in those with lactose intolerance. However, the real advance was the observation that nil per mouth and Total Parenteral Nutrition (TPN) invariably settled the symptoms down. There was also an improvement in the disease process so that for some patients TPN became lifesaving. Interestingly other auto immune diseases such as Rheumatoid Arthritis also showed some benefit. This phase of bowel rest led to trials of enteral feeding which had a similar temporary benefit. The explanation was a reduction in the antigen load and a reduction in the auto immune storm that was thought to be central to these diseases. At the time the only effective therapy was corticosteroids which had horrendous side effects particularly in children. Because of this, the low antigen diet became standard treatment for children, but adults were less compliant and would rather have a course of prednisone. The advent of specific therapy such as the anti-Tumour Necrosis Factor (anti-TNF) drugs (eg Infliximab and Adalumimab) meant that dietary manipulation like sunshine for tuberculosis was relegated to the back burner.

In spite of these advances some patients and their medical advisors like the idea of dietary manipulation. It puts them in charge of their disease. It is safe and has a certain wholistic appeal against modern food production and "Big Pharma" who are driving this therapeutic revolution. The preferred diet usually excludes processed food and gluten This is despite the very processed nature of the helpful enteral feeds.

There is no good evidence that enteral or parenteral feeding are better than standard medical therapy such as anti-TNFs in inducing remission in IBD.

What is, however, in no doubt, is the physical effect of food on the gastrointestinal tract. There are three aspects to this, effect on the microbiome, the effect on absorption of nutrients and the obstructive strictures of Crohn's Disease.

Firstly, there is no convincing evidence that IBD is caused by defects in the microbiome. This is the term used to summarize the totality of the inhabitants of the colon. This jungle of bacteria and fungi are unique to the person carrying them around. We have had these stowaways for 300 000 years and we still do not know their names or indeed their functions. This balance of bacteria has been shown to be different in the subtypes of IBD but their etiological significance needs further study. As less than 70% of the microbiome has been identified properly it is arrogant for us to talk of good and bad intestinal bacteria beyond recognizing that Cholera and Typhoid are bad news.

While the balance may well be disturbed in our patients, its primary role in etiology awaits more data. The interesting observation that children exposed to bowel infections get less IBD and that breast milk also has protective qualities supports the antigen / immunity axis that many of us think must be a factor in the etiology, but an interesting concept is not a proof. Related to this microbiome is the role of prebiotics and probiotics. The former is the foodstuff for our intestinal fauna and flora. The latter is an oral therapeutic addition to the microbiome in the hope that it will improve the "balance". None of these have been conclusively shown to put or keep patients in remission by themselves.

Secondly the absorption of nutrients is affected by what we ingest, our normal enzyme production and intestinal motility. Liquified and enteral diets facilitate efficient absorption and are a useful part of our armamentarium. This can be short term or long term but are essentially used to assist nutrition rather than affect the immune system. Malabsorption as seen with shortened bowel can be complicated by the irritation of unabsorbed bile salts which may require special therapy. All these effects are important nutritionally but again the disease process is something else.

Thirdly, the physical nature of what is ingested can lead to hard pieces blocking narrow sections of the bowel. Nuts, coconut and raisins are the classic troublemakers but simply highlight the need for corrective medication or in some cases surgical release. The role of surgery is reserved for patients with failed medical management of their disease.

Fortunately, the new specific medications are making mutilating surgical resection a rare necessity. There is currently rapid improvement in our use of modern specific agents. New inflammatory agents are being identified and antibodies created to address the inflammatory cascade. The use of the correct dose of agent on the basis of almost daily drug measurement reduces the incidence of failed medical therapy.

This amplifies the need for the early use and adequate dosage of modern medication. The old regimen of routine mesalamine, corticosteroids, immunosuppression and surgery are unacceptable relics of the 1970's.

In summary, diet is the essential factor in healthy nutrition. To get and keep patients adequately fed the dietician may play a very useful role in sick patients but to expect nutrition to control the deranged immune system, avoid strictures and prevent colonic cancer is a farfetched pious hope and hope is never a strategy.