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PART 2

WHAT ARE CROHN'S AND U.C. REALLY?

What are the Characteristics of Crohn's and U.C.?

Crohn's Disease and Ulcerative Colitis are two somewhat similar chronic conditions that affect mainly the large intestine.

While both Crohn's disease and U.C are characterized by chronic inflammation and damage to the intestines, In Crohn's disease there are healthy parts of the intestine mixed in between inflamed areas (called "skip lesions") while in ulcerative colitis there is continuous inflammation of the colon. Also, ulcerative colitis only affects the inner most lining of the colon while Crohn's disease can affect all the layers of the bowel walls.

There is debate on whether Crohn's disease should actually be classified as an autoimmune disease or not. U.C. is almost always classified as an autoimmune disorder. In both conditions the immune system is definitely not working like it should.

Right off the bat, I want to make sure that you are not thinking that these conditions mean that you have an "overactive" immune system, or that you need to "lower your immune system".

The issue is more of a "dis-regulated" immune system, not an "overactive" one.

By thinking of these conditions as an "overactive" immune system, it would make sense that it would be beneficial to lower your immune system with drugs such as corticosteroids (i.e. stress hormones). However, research shows that steroid use only has a temporary benefit, after which they fail to help or the patient becomes dependent upon them, needed to increase the dosage to get the same effect:

"*Steroids may be temporarily effective, but subsequently may make patients steroid-dependent, resulting in long-term treatment and increased risks of adverse drug reactions. Therefore, it is important to withdraw steroids as early as possible in treatment of UC.*"[1]

Side effects from prolonged steroid use include weight gain, reduced glucose tolerance, reduced bone density, cataract, and progression of atherosclerosis, among others.[1]

Suppressing the immune system is usually not a good long term strategy. While suppressing the immune system decreases the inflammation temporarily, it also decreases any healing that can occur.

Common Symptoms

The most common symptoms for Crohn's disease include:

Diarrhea, fever, fatigue, abdominal pain and cramping, blood in your stool, mouth sores, reduced appetite, weight loss, and pain or drainage near or around the anus due to inflammation from a tunnel into the skin (fistula).
Other signs and symptoms can include inflammation of skin, eyes and joints, and inflammation of the liver or bile ducts.[2]

The most common symptoms for U.C. include:

Diarrhea (often with blood or pus), abdominal pain and cramping, rectal pain, rectal bleeding, passing small amount of blood with stool, urgency to defecate, inability to defecate despite urgency, weight loss, fatigue, and fever.[3]

The rectal bleeding tends to be much worse in U.C., and if the condition is bad enough, some people need to get surgery to remove part of their colon (pelvic pouch or ileal pouch anal anastomosis surgery).

If you've been struggling with any (or all) of these symptoms, I completely understand how frustrated you probably are, and are worried that this is how the rest of your life is going to be.

HANG IN THERE! There are many natural options for you to choose from that can help with what you are going through!

How does Crohn's look at the microscopic level and exactly "how" is the immune system dysregulated?

This page is about Crohn's disease. For U.C., skip to the next page.

The immune system is not simply "activated" or not. Instead there are hundreds of immune-messengers called "cytokines" that instruct the body on how to respond to a situation. Some cytokines can actually help and are anti-inflammatory for different conditions. For various disease conditions, there are different primary cytokines that are involved. When there is an **imbalance** in the types of cytokines and the responses from them, chronic inflammation can set in.

We want to restore the balance of these signaling molecules, not just shut down the whole system. In fact, there is mounting evidence that chronic Crohn's disease might be associated with an **already lowered immune system**, where the body isn't able to repair the damage quickly, and so the inflammation continues chronically.[5]

Initial studies conducted almost 20 years ago showed that Crohn's disease inflammation is caused by an IL-12-driven **Th1 response** which resulted in the generation of **IFN-γ** which was the main inflammatory mediator.

However, more recent research shows that a **Th17** response is the main cause of Crohn's disease inflammation through the production of **IL-17**. IFN-γ is still a major pro-inflammatory cytokine in Crohn's disease although it may arise from both the Th1 and Th17 cell-mediated responses at different phases of the inflammatory process.[4]

This means that we want to look for options that can tame down the excess TH1 & TH17 response. Once we do that, IL-17 and IFN-γ will naturally decrease.

We also want to look for things that can enhance the "**resolution**" of inflammation, not just lower it. You see, there are some substances, like cortisol, that shut down the entire immune system. However, there are other substances, called "specialized pro-resolving mediators" that actually enhance the resolution of the inflammation. That means they help to actually solve the problem. We will get to these soon!

How does U.C. look at the microscopic level and exactly "how" is the immune system dysregulated?

The immune system is not simply "activated" or not. Instead there are hundreds of immune-messengers called "cytokines" that instruct the body on how to respond to a situation. Some cytokines can actually help and are anti-inflammatory for different conditions. For various disease conditions, there are different primary cytokines that are involved. When there is an **imbalance** in the types of cytokines and the responses from them, chronic inflammation can set in.

In fact, there might even be parts of an immune response deficiency in U.C., with and under-performing TLR4[7] response which then might need the inflammation to become chronic to resolve the issue.

While Crohn's disease is associated more with a Th1 response, U.C. is more strongly associated with an overactive **Th2** response. The cytokines profile in U.C. is complex: The classical pro-inflammatory cytokines, such as IL-1, IL-6, and TNF-α , are involved in the inflammation of UC, but the Th2 cytokines, IL-10 and IL-13, play a key role (although there is little IL-4, which is a typical Th2 cytokine).[8] With U.C., we want to slightly dampen the overactive Th2 response.

One aspect of the immune system that we want to upregulate are the T-regulatory cells (Treg cells). Treg cells help improve oral tolerance, meaning that the intestines become less reactive to not only to the things we eat, but to our own body as well.[9,10]

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