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Crohns Disease: An Overview

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Review article

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ABSTRACT

As Crohn's disease is mostly considered as the auto immune disease, there is a need to study the disease more deeply as it is also known to have no cure. It is a type of inflammatory bowel disease which is dissimilar to the Ulcerative Colitis which is also an inflammatory bowel disease.

INTRODUCTION

Inflammatory bowel disease (IBD) is a group of intestinal disorders that cause prolonged inflammation of the digestive tract. Inflammation anywhere along the digestive tract disturbs this normal process. IBD can be very painful and disruptive, and in some cases, may even be life-threatening [1-5]. The two most common diseases included in inflammatory bowel diseases are ulcerative colitis and Crohn's disease. It is important to know that Crohn's disease is not the same thing as ulcerative colitis. Crohn's disease forms inflammation in any part of the digestive tract. However, it mostly affects the tail end of the small intestine. Ulcerative colitis is only to the colon, also called the large intestine. Crohn's disease can also affect the whole thickness of the bowel wall, but ulcerative colitis only involves the innermost lining of the colon.

Symptoms of the Crohn's Disease

- Persistent Diarrhea
- Urgent need to move bowels
- Abdominal cramps
- Feeling of incomplete evacuation
- Rectal bleeding
- Constipation (can lead to bowel obstruction)

Diarrhea

Diarrhea can be defined in absolute or relative terms based on either the frequency of bowel movements or the consistency (looseness) of stools.

Abdominal Cramps

The term stomach cramps is nonspecific and is used to refer to a number of different symptoms or sensations rather than true muscle cramps of the stomach. People often refer to a "stomachache" or "abdominal cramps" to refer to pain that is perceived anywhere in the abdominal area [6-10]. As such, the list of potential causes is extremely varied. Organs of the abdomen include the stomach, small intestine, colon, liver, gallbladder, and pancreas, and problems or diseases of all of these organs may be the source of pain [11-15].

Incomplete Evacuation

Patients usually report constipation when there are changes to harder stool consistency, the presence of pellets, straining or feelings of incomplete evacuation, infrequent bowel movements and a sensation of “want to but can't.”

Rectal Bleeding

Rectal bleeding is the passage of blood through the anus. The bleeding may result in bright red blood in the stool as well as maroon colored or black stool. The bleeding also may be not visible with the human eye.

Constipation

Being constipated means your bowel movements are difficult or happen less often than normal. Almost everyone has it at some point in life, and it's usually not serious [16-20]. Still, you'll feel much better when your system is back on track.
The normal length of time between bowel movements varies widely from person to person. Some people have bowel movements three times a day. Others have them only once or twice a week. Going longer than three or more days without one is usually too long [21-25]. After three days, the stool or faeces become harder and tougher to pass.

Other symptoms associated with inflammatory bowel diseases are

- Fever
- Loss of appetite
- Weight Loss
- Fatigue
- Night sweats
- Loss of normal menstrual cycle

People suffering from Crohn’s disease often experience loss of appetite and may lose weight as a result. A feeling of weakness and fatigue is also common. Among children, Crohn's may delay growth and development.
In more critical cases, Crohn’s can lead to fissures in the lining of the anus, which may cause pain and bleeding, especially during bowel movements [25-30]. Inflammation may also leads to the formation of fistula. A fistula is a tunnel that leads from one loop of intestine to other intestine, or that connects the intestine to the bladder, vagina, or skin. This is a serious condition that requires immediate attention [31-35].

The symptoms of Crohn’s disease depends upon the part if the GI tract that is affected.
The types of Crohn’s disease are Ileocolitis, Ileitis, Gastroduodenal Crohn's disease, Jejunoileitis, Crohn's (granulomatous) colitis [36].

Ileocolitis

Ileocolitis is the most common type of Crohn’s disease. It causes inflammation in the end of the small intestine (known as the ileum) and the colon (large intestine) - most often on the right side. Around 50% of people with Crohn’s disease are diagnosed with ileocolitis. It is a life-long chronic condition which cannot currently be cured and is part of a group of conditions known as inflammatory bowel disease (IBD). Crohn’s disease causes inflammation in the gastrointestinal (GI) tract [37-42]. It most commonly affects the small intestine and the beginning of the large intestine; however it can affect any part of the GI tract from the mouth to the anus.
Crohn’s disease affects the entire thickness of the digestive tract wall and may also skip areas - meaning you could have inflammation near you mouth and also in your small bowel but nowhere in between [42-48].
It is common for people with Crohn’s disease to be diagnosed with more than one type of the condition if inflammation is present in several places in the GI tract.

Ileitis:

This type affects only the ileum. Symptoms are of ileocolitis. In severe cases, fistulas or inflammatory abscess in right lower part of abdomen may occur.

Gastroduodenal Crohn's disease

Gastroduodenal Crohn’s disease is a form of Crohn’s disease that causes inflammation to the oesophagus, stomach and/or duodenum (the first part of the small intestine). This type is not common - only up to around 5% of people with Crohn’s disease have gastroduodenal Crohn’s [48-53]. It is a lifelong chronic condition which cannot

currently be cured and is part of a group of conditions known as inflammatory bowel disease (IBD). Crohn's disease causes inflammation in the gastrointestinal (GI) tract. It most commonly affects the small intestine and the beginning of the large intestine; however it can affect any part of the GI tract from the mouth to the anus [54-60].
Crohn's disease also affect the entire thickness of the digestive tract wall and may also skip areas - meaning you could have inflammation near you mouth and also in your small bowel but nowhere in between.
It is common for people with Crohn's disease to be diagnosed with more than one type of the condition if inflammation is present in several places in the GI tract.

Jejunoileitis

Jejunoileitis is a form of Crohn's disease, which causes inflammation in the jejunum (the upper half of the small intestine). This form of Crohn's disease is fairly uncommon and is more commonly diagnosed in children than adults. It is a lifelong chronic condition which cannot currently be cured and is part of a group of conditions known as inflammatory bowel disease (IBD) [61-65].
Crohn's disease causes inflammation in the gastrointestinal (GI) tract. It most commonly affects the small intestine and the beginning of the large intestine; however it can affect any part of the GI tract from the mouth to the anus.
Crohn's disease can affect the entire thickness of the digestive tract wall and may also skip areas - meaning you could have inflammation near you mouth and also in your small bowel but nowhere in between [65-70].
It is common for people with Crohn's disease to be diagnosed with more than one type of the condition if inflammation is present in several places in the GI tract.

Crohn's (granulomatous) colitis

Crohn's (granulomatous) colitis occurs only in the colon (also known as the large intestine or large bowel). It is often just known as Crohn's colitis and is a form of Crohn's disease. It accounts for around 20% of Crohn's disease cases.
Crohn's colitis is a lifelong chronic condition which cannot currently be cured and is part of a group of conditions known as inflammatory bowel disease (IBD) [71-75]. Crohn's disease causes inflammation in the gastrointestinal (GI) tract. It most commonly affects the small intestine and the beginning of the large intestine, however it can affect any part of the GI tract from the mouth to the anus.
Crohn's disease can affect the entire thickness of the digestive tract wall and may also skip areas - meaning you could have inflammation near you mouth and also in your small bowel but nowhere in between [76-80].
It is common for people with Crohn's disease to be diagnosed with more than one type of the condition if inflammation is present in several places in the GI tract.
When given a diagnosis of Crohn's colitis some people believe they have both Crohn's disease and ulcerative colitis. However, this isn't the case. Crohn's colitis is a form of Crohn's disease.
Due to inflammation in the colon in Crohn's colitis bloody diarrhoea is a common symptom.

CAUSES OF CROHN'S DISEASE

Men and Women are equally likely to be affected, the disease can occur at any age. Crohn's is more prevalent among the young adults between the ages of 15 and 35.
While the exact cause of the Crohn's disease is unknown, it seems to be due to a combination of environmental factors and genetical factors.

Genetics

Crohn's has a genetic effect. Because of this, siblings of the people with Crohn's are 30 times more likely to develop Crohn's than the general population [81-85]. Over thirty genes have been associated with Crohn's; a biological function is known for most of them. There is considerable overlap between susceptibility loci for IBD and mycobacterial infections [85-90]. Recent genome-wide association studies have proven that Crohn's disease is genetically linked to coeliac disease.

Immune system

There was a prevailing talk that Crohn's disease is a primary T cell autoimmune disorder, however, a newer theory hypothesizes that Crohn's results from an impaired innate immunity [91-95]. The later study describes impaired cytokine secretion by macrophages, which is impaired innate immunity and leads to a sustained microbial-induced inflammatory response in the colon, where the bacterial load is more. Another theory is that Crohn's inflammation was caused by an overactive Th1 and Th17 cytokine response.

Environmental factors

The increased incidence of Crohn's in the industrialized world indicates an environmental component. Crohn's disease is associated with an increased intake of animal protein, milk protein and an increased ratio of omega-6 to omega-3 polyunsaturated fatty acids [95-98]. People who consume vegetable proteins appear to have a lower incidence of Crohn's disease. Consumption of fish protein has no effect. Smoking increases the risk of the return of active disease (flares). Isotretinoin is associated with Crohn's. Although stress is sometimes claimed to exacerbate Crohn's disease, there is no concrete evidence to support such claim.

Different diagnostic studies can be done for the Crohn's disease such as Endoscopy, Radiologic tests and Blood tests.

Medication

Normal antibiotics to treat any infection and amino salicylate anti-inflammatory drugs and corticosteroids to reduce inflammation.

Alternative medicine

These include diets, probiotics, fish oil and other herbal and nutritional supplements. Few scientists have suggested more research into these is needed to discriminate between effective therapies and ineffective therapies.

PROGNOSIS

Crohn's disease is a chronic condition for which there is no cure. It is characterised by periods of improvement followed by episodes when symptoms flare up. With treatment, most people achieve a healthy weight, and the mortality rate for the disease is relatively low. It can vary from being benign to very severe and people with CD could experience just one episode or have continuous symptoms [98,99]. It usually reoccurs, although some people can remain disease free for years or decades. Most people with Crohn's live a normal lifespan. However, Crohn's disease is associated with a small increase in risk of small bowel and colorectal carcinoma (bowel cancer).

CONCLUSION

The percentage of people with Crohn's disease has been determined in Norway and the United States and is similar at 6 to 7.1:100,000. The Crohn's and Colitis Foundation of America cites this number as approximately 149:100,000; NIH cites 28 to 199 per 100,000. Crohn's disease is more common in northern countries, and with higher rates still in the northern areas of these countries. The incidence of Crohn's disease is thought to be similar in Europe but lower in Asia and Africa. It also has a higher incidence in Ashkenazi Jews and smokers. Crohn's disease begins most commonly in people in their teens and 20s, and people in their 50s through to their 70s. It is rarely diagnosed in early childhood. It usually affects female children more severely than males. However, only slightly more women than men have Crohn's disease. Parents, siblings or children of people with Crohn's disease are 3 to 20 times more likely to develop the disease. Twin studies find that if one has the disease there is a 55% chance the other will too. The incidence of Crohn's disease is increasing in Europe. Patient education about use of medications, expectations of efficacy and tolerability issues and long-term management options will help achieve adherence and therapeutic success.

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