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Review Article

**THE CONSISTENT SYSTEMATIC REVIEW OF GASTRO
INTESTINAL DISEASES**

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Abstract:

The initiating events of chronic gastrointestinal (GI) inflammation in Crohn's disease (CD) and ulcerative colitis (UC) are not well-defined, but GI infections are implicated. The initiating events of chronic gastrointestinal (GI) inflammation in Crohn's disease (CD) and ulcerative colitis (UC) are not well-defined, but GI infections are implicated. The gastro-intestinal disorders are the most frequent conditions observed in the gastro-enterology practice. These disorders include gastric cancer, ulcerative colitis, colorectal cancer, peptic ulcer, gastroenteritis, appendicitis etc. and are occurring with increasing frequency. Various factors including changes in food habits, usage of drugs like cannabis products, malabsorption disorders, previous bowel surgery etc. have a high impact for the occurrence and prevalence of the gastro-intestinal disorders. This review discusses in detail about the various emerging gastro-intestinal disorders and their effects. The initiating events of chronic gastrointestinal (GI) inflammation in Crohn's disease (CD) and ulcerative colitis (UC) are not well-defined, but GI infections are implicated.: To define the role of GI infections in risk of incident inflammatory bowel disease (IBD) and synthesise the current body of relevant translational data to provide biological context for associations between GI infections and IBD risk. Methods: We systematically reviewed electronic databases. Clinical studies that provided risk estimates of the association between GI infections and incident IBD were included.

Key words: Gastric Cancer, Ulcerative Colitis, Colorectal Cancer, Peptic Ulcer, Gastroenteritis, Appendicitis

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INTRODUCTION:

GI infection is a common cause of gut dysbiosis, and several studies have reported an association between enteric infection, functionally altered commensal bacteria, and IBD. By contrast, some microbes such as *Helicobacter pylori* (*H pylori*) and helminths, are inversely associated with IBD, particularly CD.

A gastrointestinal disease is one that affects the gastrointestinal (GI) tract, the passage that runs from the mouth to the anus. Also known as digestive disorders, GI diseases include irritable bowel syndrome (IBS), acid reflux, indigestion, colon cancer, and hemorrhoids.

This article discusses gastrointestinal diseases. It explains the different types of functional and structural gastrointestinal disorders and details common symptoms and treatments of GI diseases.¹

What's Included in the GI Tract?

The GI tract includes the:

- Mouth
- Throat
- Esophagus (food tube)
- Stomach
- Small intestine
- Large intestine (colon)
- Rectum
- Anus

Gastrointestinal Symptoms to Never Ignore

Functional Digestive Diseases

Functional GI diseases are characterized by chronic (long-term) GI symptoms that arise due to the function or dysfunction of the digestive system. The most common functional GI diseases are reviewed below.

Irritable Bowel Syndrome

Irritable bowel syndrome (IBS) is a chronic condition that affects the large intestine. The condition is not directly connected to any other type of GI disorder. However, it can be encountered in patients with other GI disorders, like inflammatory bowel disease (IBD). IBS presents with symptoms, such as:²

- Abdominal pain and cramping
- Bloating and gas
- Constipation or diarrhea
- Physical weakness

There are three types of IBS. Each type is named for its most common complaint, including:

- Constipation predominant IBS (IBS-C)
- Diarrhea predominant IBS (IBS-D)
- IBS mixed type (IBS-M)

Roughly 10% to 15% of people in the United States experience IBS symptoms, with only about half appropriately diagnosed with IBS.²

Does IBS Cause Physical Damage to the GI Tract?

Although IBS can significantly decrease a person's quality of life, it does not increase the risk of other GI problems, nor is it likely to cause any permanent damage to the GI tract.³

Inflammatory Bowel Disease (IBD): Everything You Need to Know

Acid Reflux

Acid reflux, also known as gastroesophageal reflux disease (GERD), is a condition that develops when stomach acid flows back into the esophagus. This can happen for these two reasons:

- The lower opening that separates the esophagus from the stomach relaxes when it should not.
- The opening becomes too weak to contain the stomach acid.

Common symptoms of acid reflux include:⁴

- Heartburn (burning sensation in the chest)
- Regurgitation (when food is spat up without any contraction of the abdominal muscles)
- Chest pain
- Nausea
- Difficulty or pain while swallowing
- Chronic cough or hoarseness

In some cases, untreated acid reflux can lead to health complications, including:⁵

- Worsened asthma
- Inflammation of the esophagus, which could cause tissue damage or erosion of the esophagus
- Ulceration of the esophagus (when parts of the esophageal tissue die and break off)
- GI bleeding
- Stricture formation that can require esophageal dilation (procedure to stretch out the esophagus)
- Barrett's esophagus (damages to lining of the esophagus), which increases the risk of esophageal cancer

How Common Is Acid Reflux?

An estimated 20% of adults experience symptoms of gastroesophageal reflux disease. It affects some 40% of children.⁶

Functional Dyspepsia

Functional dyspepsia is characterized by recurring or chronic symptoms that resemble indigestion, but occur without an organic cause. It is thought to be driven by inflammation in the upper GI tract

following an infection or allergic reaction. However, it is not yet fully understood why the condition develops at all.

Symptoms of functional dyspepsia include:⁷

- Feeling full early on during a meal and not being able to finish eating
- Feelings of fullness prior to or for a long time after a meal
- Pain or burning in the upper part of the abdomen
- Slowed gastric emptying (a process that occurs when the stomach contents are not moved into the small intestine as quickly as they should be)
- Nausea
- Heartburn
- Unintentional weight loss

Functional Dyspepsia or Something Else?

Because of the symptoms that occur with the disorder, functional dyspepsia is often confused with gastric cancer, peptic ulcers, and a condition known as reflux esophagitis, which is an injury to the esophagus caused by acid reflux.⁷

Structural Digestive Diseases

Structural GI diseases occur because there is a change or problem within the structure of the GI tract. These structural issues can occur anywhere in the GI tract.

Hemorrhoids

Hemorrhoids are swollen or inflamed veins or blood vessels in or around the anus. They develop when there is pressure on the veins. They can occur both internally and externally.

The main symptoms of hemorrhoids include:⁸

- Bright-red blood on toilet paper, in the toilet, or in your stool
- Irritation or pain around the anus
- A hard lump or swelling around the anus
- Itching in the anal area

Roughly 50% of people over the age of 50 have hemorrhoids.⁹

Who Is at Risk of Developing Hemorrhoids?

People who strain during bowel movements, sit on the toilet for a long period of time, or suffer from chronic constipation or diarrhea are more likely to get hemorrhoids. Factors associated with a higher likelihood of developing hemorrhoids include:⁹

- Eating a low-fiber diet
- Being pregnant

- Being over the age of 50

Diverticulosis

Diverticulosis is a condition that develops when bulging pouches, known as diverticula, form in the lining of the digestive tract. It is one of the most common GI structural issues.

In some cases, people with diverticulosis will go on to develop diverticulitis, which occurs when the bulging pouches become inflamed due to an infection.

While most people who have the condition will present with no symptoms, some do.¹⁰

Symptoms associated with diverticulitis include:¹¹

- Pain the lower left side of the abdomen
- Constipation or diarrhea
- Fever
- Chills
- Nausea and/or vomiting

Diverticulosis is incredibly common in the United States. It's estimated that 50% of people over the age of 60 and 70% over the age of 80 have it.¹⁰

Does Diverticulosis Always Cause Diverticulitis?

Not all cases of diverticulosis will develop into diverticulitis. Estimates show that roughly one in five to one in seven people with diverticulosis will go on to develop diverticulitis.¹²

Colitis

Colitis is the term used to describe inflammation of the colon (large intestine).

There are five types of colitis:

- **Inflammatory:** Includes ulcerative colitis, a form of inflammatory bowel disease that involves inflammation accompanied by ulcers that bleed in the inner lining of the colon.¹³ IBD also includes Crohn's disease, which can affect any part of the GI tract, including the colon.
- **Microscopic:** Microscopic colitis develops when tissue in the colon becomes inflamed on a microscopic level. The inflammation can be due to an overabundance of immune cells, known as lymphocytes, or the thickening of the colon lining due to collagen buildup.¹⁴
- **Allergic:** Allergic colitis typically occurs in infants. Although the cause is unknown, it is thought to develop due to an allergic reaction to breast milk.¹⁵
- **Ischemic:** Ischemic colitis develops when blood flow to the colon is cut off or restricted, causing inflammation and necrosis (tissue death).¹⁶

- **Pseudomembranous:** Pseudomembranous colitis develops when a specific bacterium known as *Clostridioides difficile* (*C. diff*) overgrows in the intestine.¹⁷

The inflammatory bowel diseases (IBD), comprising Crohn's disease (CD) and ulcerative colitis (UC), are chronic, progressive, inflammatory conditions of the gastrointestinal tract. Imbalance in the gut microbial community, or dysbiosis, and the subsequent immune response, represent the critical relationship between genetic susceptibility, microbes, and environment factors, that result in IBD. Gastrointestinal pathogens – a common cause of dysbiosis – have been implicated as an environmental trigger in new onset IBD, as well as flare of existing IBD. In this article, we systematically review clinical data regarding the association between specific gastrointestinal pathogens and IBD. Numerous bacteria, viruses, fungi, and parasites have been implicated in the pathogenesis of IBD, and exacerbations of existing disease. In this article, we will also specifically discuss the less recognized microbes that have an inverse association with IBD, including certain bacterial pathogens, such as *Helicobacter pylori*, and parasites, such as *Trichuris* species. Future prospective and experimental studies are required to establish causality and clarify potential mechanisms of enteric pathogens in modifying the risk and course of IBD.

Symptoms associated with most types of colitis include:

- Cramps and abdominal pain
- Bloating
- Diarrhea
- Blood in the stool
- An urgent need to evacuate the bowels
- Fever
- Chills
- Vomiting
- Unexplainable weight loss

Colitis and IBD

Although colitis can be a form of IBD, not all types are. For example, ulcerative colitis and microscopic colitis are classified as IBD, but pseudomembranous colitis isn't. However, the *C. diff* infection rate that contributes to it is higher in patients with IBD and it usually results in worse outcomes.¹⁸

Perianal Abscesses

A perianal abscess appears as a small bump on the skin around the anus. The bump will usually be tender, red, and warm. You can see and feel these bumps on the surface of the skin. An abscess can lead

to pain when having a bowel movement and, left untreated, can lead to the development of anal fistula. They typically require surgery to treat.¹⁹

About 90% of perianal abscesses occur due to blockage or infection of anal glands. Inflammatory bowel disease is a common cause. People diagnosed with diabetes or immune suppression, like human immunodeficiency virus (HIV), also may be at higher risk.²⁰

Anal Fissures

Anal fissures are small tears in the thin and moist tissue that lines the anus, known as mucosa. They occur when the mucosa becomes stretched beyond its capacity and tears, often due to hard stool.

Symptoms associated with anal fissures include:²¹

- Pain during and/or after having a bowel movement
- Visible cuts or tears in the anal area
- Bright-red blood during or following a bowel movement

Anal fissures are often found in people with constipation, which is marked by infrequent bowel movements or stools that are difficult to pass. It can also develop in a person who has chronic bouts of diarrhea, rectal surgery, or anal sex.

In some cases, anal fissures can last up to eight to 12 weeks, which they would then be referred to as chronic.²²

Hemorrhoids and Anal Fissures

Both anal fissures and hemorrhoids are common digestive ailments. Up to 20% of people with hemorrhoids also have anal fissures.²³

Anal Fistula

An anal fistula is a type of tunnel that develops between the anus and the skin when an infection in the anal glands (sweat glands) occurs, or in patients with severe underlying perianal Crohn's disease.

Symptoms of an anal fistula include:^{24,25}

- Pain
- Pus and bloody discharge that drains from the anus
- The formation of a skin mass, known as an abscess
- Difficulty sitting down
- Fever
- Chills
- Redness around the anal opening that may be accompanied by itching or soreness

- A general feeling of fatigue or illness
- Sepsis (a life-threatening biological response to an infection in the bloodstream)

Anal Fistulas and IBS

Although anal fistulas can develop in anyone, people with IBD or chronic diarrhea or who are undergoing radiation treatment for rectal cancer are all at a higher risk for developing one.²⁴

Colon Polyps or Cancer

Colon polyps are clumps of cells that form a mass inside the colon. While most are harmless, some may turn into colon cancer within five to 15 years of their formation.²⁶ The exact cause of these growths isn't known.

Many people with colon polyps don't present with symptoms. However, when symptoms do develop, they can include:²⁷

- Rectal bleeding
- Abdominal pain
- Blockage or other change in bowel habits (including diarrhea, more rarely)
- Polyp tissue that emerges from the anus

If the polyps do turn into cancer, they can present with other symptoms such as:²⁸

- Changes in bowel habits
- Narrowing of the stool
- Diarrhea or constipation
- Feeling that you didn't empty your bowels after having a bowel movement
- Rectal bleeding
- Bloody stool
- Cramping and abdominal pain
- Weakness and fatigue
- Unexplained weight loss

The three types of polyps are:

- Hyperplastic
- Pseudopolyps
- Adenomatous polyps

Each type of polyp has a different cancer risk. Hyperplastic and pseudopolyps come with lower risk, while adenomatous polyps come with the highest. Roughly 14% of adenomatous polyps will develop into cancer after 10 years.²⁹

Colon Polyps and Your Cancer Risk

Signs and Symptoms

General signs and symptoms associated with many GI diseases include:³⁰

- Gas and bloating

- Constipation or diarrhea
- Fecal incontinence (inability to control bowel movements, leading to the involuntary leaking of feces)
- Bleeding from the anus or blood in the stool
- Heartburn
- Nausea and/or vomiting
- Abdominal pain and cramps
- Unintentional weight loss
- Weight gain with no known cause
- Changes in appetite

Diagnosis and Treatment

Diagnosing and treating gastrointestinal disease will vary widely depending on the type, cause, and severity of the condition.

When it comes to diagnosing these conditions, your healthcare provider will gather your health history, lifestyle habits, and symptoms to determine what tests are needed to further investigate the issue.

Several tests may be used to diagnose a GI condition, including:³⁰

- Colonoscopy
- Upper GI endoscopy
- Capsule endoscopy
- Endoscopic retrograde cholangiopancreatography (ERCP)
- Endoscopic ultrasound

Treating the issue will only be done following a proper diagnosis.

In some cases, changing your diet and lifestyle habits may be enough to help relieve some types of gastrointestinal conditions. If diet and lifestyle changes aren't enough, your healthcare provider will likely prescribe medication specific to your condition.

For example, if a bacterial infection is to blame for your symptoms, antibiotics may be used. However, if you have a lifelong, chronic condition, other forms of medication may be needed to help curb pain and other symptoms.

Some medications used to treat various digestive conditions include:

- Antacids for acid reflux
- Antidiarrheals for chronic diarrhea
- Stool softeners or laxatives for chronic constipation
- Prescription medications for symptoms caused by anxiety³¹

- Antidepressants for symptoms of IBS³²
- Medications designed to reduce inflammation of the colon³³

When to Call Your Healthcare Provider

If you are experiencing mild GI symptoms, you may not need medical attention. However, if the symptoms persist for longer than a few days, are disrupting your day-to-day life, and are not caused by an existing illness, you should contact your healthcare provider for treatment.

Preventing Gastrointestinal Disease

While not all GI diseases can be prevented, the best way to keep them at bay is by living a healthy lifestyle. This includes:

- Eating a healthy diet with fruits, vegetables, and the proper amount of fiber
- Getting quality sleep
- Staying hydrated by drinking enough water

High levels of stress may also be associated with the onset of certain GI disease, so limiting stress whenever possible and practicing stress-reduction techniques may be helpful in preventing digestive diseases.³⁴

Physical activity, specifically light physical activity, has also been shown to improve GI disease symptoms in some people. There's some research evidence, for example, that exercise may support liver function, reduce insulin resistance, or help people living with pancreatic cancer.³⁵

SUMMARY AND CONCLUSION:

There are several different types of GI diseases that can affect the health of your digestive tract and how well your body digests food. The two main types of GI disease—functional and structural—are different, but can present with similar symptoms.

For the most part, most GI diseases are manageable, though they can present with debilitating symptoms and a lower quality of life. Common symptoms include chronic constipation or diarrhea, abdominal pain, nausea and/or vomiting, and bleeding.

Because there are so many different GI diseases, all with varying symptoms, it's important to see a healthcare provider for a proper diagnosis. Treatment will vary significantly based on the diagnosis, so getting it right is essential to managing your GI disease.

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