

Extended Abstract

# Gut Microbiome and Colon Diseases

**Sherif El Behiry**

*Cairo University, Egypt*

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## Abstract

A plenty of research interests have focused on the gut microbiota because of its contribution to immune development, mucosal integrity and the development of diversity of intestinal and extra-intestinal disorders. It has been proved lately that a permanent alteration in microbiota composition or function (dysbiosis) may alter immune responses, metabolism, intestinal integrity and gastrointestinal motility, hence promoting a pro-inflammatory state. Alterations in the dominance and function of the gastrointestinal microbiota have a clear impact on human health and seem to have an important role in the pathogenesis of several gastrointestinal diseases, whether inflammatory, metabolic, or neoplastic ones. Our presentation will focus on latest results showing link between gut microflora and the diverse of GI diseases.

## Introduction

The human microbiome consists of microorganism, archaea, viruses and eukaryotic microbes that reside in and on our bodies. These microbes have tremendous potential to impact our physiology, each in health and in malady. They contribute metabolic functions, shield against pathogens, educate the system, and, through these basic functions, have an effect on directly or indirectly most of our physical functions. The study of the human microbiome has been furthered by technological advancements for playing culture-independent analyses. In most studies, the microorganism constituents of a microorganism population area unit known by sequencing of the 16S rRNA-encoding cistron (hereafter, 16S) followed by comparison to identified microorganism sequence databases. Metagenomic analysis by sequencing all microorganism DNA during a complicated community has the extra advantage of assessing the genetic potential of the microorganism population. Alternative methodologies to investigate the microorganism transcriptome, proteome, and metabolome offer further info at serial levels of microorganism physiology. nice progress in characterizing the structure of the microbiome recently has made-up the method for in progress and future studies on the useful interactions between the microbiota and also the host.

Studies on the perform of the microbiota are going to be crucial to understanding the role of the microbiota in human physiological condition and malady pathological process.

## Colon Diseases

Several diseases will interfere with the conventional functioning of the colon. These diseases are classified as benign (noncancerous) or malignant (cancerous). They will cause symptoms together with injury, infection, and perforation.

- Inflammatory internal organ sickness (IBD) is caused by chronic inflammation of the enteric tract. There are 2 kinds of inflammatory internal organ sickness: Crohn's disease and colitis
- Crohn's sickness and colitis area unit similar — therefore similar that they are usually mistaken for each other. each diseases cause inflammation of the liner of your epithelial duct, and each might end in severe bouts of diarrhoea and abdominal pain
- Crohn's sickness will occur anyplace in your epithelial duct, usually spreading deep into the layers of affected tissues. colitis, on the opposite hand, sometimes affects solely the innermost lining of your intestine (colon) and body part. In Crohn's sickness, inflammation causes cells within the affected areas of your internal organ to secrete massive amounts of water and salt. as a result of the colon cannot absorb this excess fluid, you develop diarrhoea. Altered enteric contractions can also contribute to loose stools. diarrhoea will vary from delicate to severe.
- Diarrhoea may be a signal of colitis. However, patients with colitis tend to expertise bloody diarrhoea and conjointly one thing known as muscle spasm. muscle spasm is that the sensation of getting to moreover one's bowels. Food moving through your can cause inflamed tissue to bleed, and your internal organ may additionally bleed on its own. you may notice bright red blood within the bowl or darker blood mixed along with your stool. ought to this occur, you want to send word your medical practitioner.

## Medical therapy

- Usually, treatment of inflammatory bowel disease begins with medical therapy. Most commonly, treatment of inflammatory bowel disease requires mesalamine or Asacol® (mesalazine), which in part also acts as an anti-inflammatory agent.
- Depending on the level of severity, inflammatory bowel disease may require immunosuppression to control the symptoms. Immunosuppression refers to using medications to depress the body's ability to generate an inflammatory response. Such medications often used include azathioprine, methotrexate, or 6-mercaptopurine.

- If initial treatment is unsuccessful, a combination of the aforementioned immunosuppression drugs may or may not be administered, depending on the patient.
- During times of acute exacerbation of inflammatory bowel disease, steroids are often used to control disease flares. Remicade® (infliximab), another type of anti-inflammatory, has been used for many years in Crohn's disease and more recently also in patients with ulcerative colitis.

#### **Surgical therapy**

- Surgery for Crohn's disease is recommended in carefully selected cases because the disease can recur in any remaining portion of the gastrointestinal tract.

- Surgery is recommended when Crohn's related complications occur. This includes infection (abscess), perforation, blockage or obstruction and possible fistula (connection between bowel and other structures).
- Of the two conditions, patients with ulcerative colitis are more likely to undergo surgery because removal of the colon and rectum will cure the disease.
- Surgery for ulcerative colitis usually entails removing the entire colon. There are different ways to remove the colon as well as different ways to put the colon back together.