

## **Influence of Helicobacter pylori on Small Intestinal Bacterial Overgrowth (SIBO) Etiology and Pathogenesis**

SIBO develops when there is dysfunction in intestinal motility and a decrease in gastric acid secretion, known as hypochlorhydria. This allows a large percentage of ingested bacteria (up to 60%) to migrate and colonize the small intestine.

**The causes of SIBO** are varied and can include:

- Irritable Bowel Syndrome (IBS).
- Prolonged use of proton pump inhibitors (PPIs).
- Helicobacter pylori infection.

### **Symptoms**

The symptoms of SIBO include:

- Abdominal pain and bloating.
- Gas and heavy digestion.
- Heartburn and diarrhea.

In more severe cases, SIBO can lead to:

- Malabsorption of nutrients.
- Weight loss.
- Vitamin deficiencies.

Additionally, symptoms can extend beyond the digestive system, including:

- Brain fog.
- Joint pain.
- Painful menstruation.
- Lack of energy.

### **SIBO: The Diagnostic Challenge**

Diagnosing SIBO can be a real challenge because:

- Blood tests do not provide relevant information.
- Ultrasound and scans are not helpful.

The lactulose breath test is the most commonly used tool as it is non-invasive, although it has certain limitations.

### **The Link Between Helicobacter pylori and SIBO**

This article focuses on the relationship between H. pylori and bacterial overgrowth (SIBO). H. pylori can reduce stomach acidity by raising gastric pH, creating an environment conducive to the development of SIBO.

The changes induced by H. pylori can lead to a decrease in hydrochloric acid (HCl) production. This acid, which is secreted in response to food, especially proteins, plays essential roles such as:

- Breaking down food.
- Facilitating nutrient absorption.
- Acting as a natural defence against pathogens.

### **Importance of Gastric pH**

Gastric pH is measured on a scale of 0 to 14, where 0 is extremely acidic. Under normal conditions:

- In a healthy person, the fasting pH of the stomach is between 1 and 2.
- In people with gastritis, the pH can rise to 7.
- In people taking PPIs, the pH ranges from 3 to 7, which is considered hypochlorhydria.

An acidic environment is crucial not only for proper digestion but also to prevent pathogens from passing into the intestine.

**Reference:** Study on the relationship between *H. pylori* and SIBO.