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### A brief Review on *Helicobacter pylori*, and Advanced Studies

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#### ABSTRACT

*Helicobacter pylori* were not invented many years before. Australian medical doctor Sir John Robin Warren with his colleague Dr. Barry J Marshall discovered this microorganism in 1979. This is one in all the foremost vital discoveries in human history as this being causes oftentimes abdomen ulcers. In this review paper, the life cycle of *Helicobacter pylori* has been discussed with its high prevalence rate. Mostly scientists and researchers did some important investigations on this microorganism.

#### INTRODUCTION

In our daily life activities, it has been observed that people are frequently affected by stomach pain. Mostly those people are affected who take unhygienic food outside. One of the most important causes of this stomach pain is peptic ulcer [1,2]. Peptic ulcer is divided into two types: stomach ulcer and duodenal ulcer [3]. Early and systematic treatment of these ulcers are necessary as they may cause frequently perforation of gastrointestinal tract which is life threatening.

One of the most important causes of these ulcers is *Helicobacter pylori* [5]. This microorganism was discovered in 1979 by Australian medical doctor Sir John Robin Warren and his colleague Dr. Barry J Marshall.

The prevalence of *Helicobacter pylori* is more in India compared to all over the world. Most of the people are unaware about the importance of taking hygienic and healthy food [6]. They are also unaware about the importance of hand washing before taking food [7].

Here, at first the life cycle of *Helicobacter pylori* has been discussed. Then the current condition or prevalence of this microorganism has been discussed. India scientists did some important research on *Helicobacter pylori*. Some of them will have been also discussed in this paper.

#### *Helicobacter pylori*

*Helicobacter pylori* are a kind of intestinal microscopic organisms that cause the larger part of stomach what's more, duodenal ulcers. They flourish in exceptionally acidic situations and have a remarkable method for adjusting to the unforgiving environment of the stomach [8-10].

*H. pylori* have been delegated low-potential cancer-causing agents by the World Health Organization [11-20].

#### Life cycle of *Helicobacter pylori*

*H. pylori* can make due in stomach acid since they deliver compounds that neutralize the acid. This instrument permits *H. pylori* microscopic organisms to enter the stomach and advance toward the "sheltered" territory the defensive mucous covering of the stomach divider. At the point when the bacterium is in the mucous covering of the stomach, human body's characteristic guards can't achieve it.

The resistant framework will react to a *H. pylori* disease however won't have the capacity to execute the microorganisms since they are covered up in the stomach lining. The insusceptible framework will continue sending disease warriors to the contamination site and *H. pylori* will eat the supplements gave by the body, permitting them (the microbes) to make due in stomach environment.

*H. pylori* debilitate the defensive mucous covering of the stomach and duodenum, permitting the stomach corrosive to break through to the touchy coating under [21-24] and maybe the arrangement of an ulcer inside a couple days of the underlying disease. Incidentally, it may not be the *H. pylori* microorganisms, however the irritation reaction to the microscopic organisms, that causes the ulcer to frame.

### **What causes ulcers?**

Ulcers happen when there is a separate in the mucous layer covering the stomach, permitting the gastric (stomach) corrosive and digestive compounds to assault and exasperate the real stomach muscle. *Helicobacter pylori* add to this breakdown by living in this layer and expanding the odds of it separating. Push and eating regimen may aggravate an ulcer, however, don't precipitate it.

### **Symptoms of an *H. pylori* infection**

Getting *H. pylori* contamination is not at all like coming down with a typical bug in that quick results of a disease are once in a while seen. Indeed, it is conceivable to go numerous years without discernible manifestations. At the point when indications do happen, stomach inconvenience is the most well-known. This distress is generally a dull, biting throb that travels every which way for a few days or weeks. It for the most part happens a few hours after a feast or amidst the night and is assuaged by eating, drinking milk or taking acid neutralizer pharmaceuticals.

Other symptoms include: heartburn, increased burping, weight loss, bloating and burping, and less common symptoms include: poor appetite, nausea and vomiting.

If someone suspects that he or she has an ulcer and experience any of the following symptoms, a doctor should be called right away.

- Persistent stomach pain
- Black stools sometimes bloody stools may appear
- Vomiting/Blood vomiting's

By Using antibiotics people may recover within two to three weeks. But in severe conditions it takes much longer time to recover [25-30].

### **The illnesses caused by *H. pylori***

*H. pylori* microbes have been connected with various diseases, includes: duodenal ulcers, stomach ulcers, stomach cancer and acid reflux. *H. pylori* diseases have likewise been connected with bringing about gastritis (irritation of the stomach) in grown-ups and kids.

Tainted persons have a two to six-fold expanded danger of creating stomach malignancy and lymphoma contrasted and their uninfected counterparts [31-33].

Anemia will also occur when there is a prolonged bleeding. Depending on the amount of bleeding, haematemesis, melena may occur.

### **Diagnosis of *H. pylori* infection**

If associate lesion is found, the doctor can check the patient for. This *H. pylori* check is very important because treatment for associate lesion caused by *H. pylori* is totally different from that for associate lesion caused by NSAIDs [34].

An *H. pylori* infection is diagnosed through blood, breath, stool, and tissue tests (endoscopy). Blood tests are the foremost common as they're one in all the smallest amount invasive tests available [35]. If a biopsy comes back positive for *H. pylori* and any clarification continues to be available, a doctor can then proceed with alternative tests, admire the breath check or associate endoscopy [36-43].

### **Route of transmission of *H. pylori***

While it is not known for beyond any doubt how the microorganisms spread, it is trusted that *H. pylori* are transmitted orally [44-46]. The most likely way the bacterium is spread is through the fecal-oral or oral-oral course. Transmission by means of the fecal-oral course would happen through the ingestion of waste-polluted nourishment or water [47-49]. Microscopic organisms from a tainted individual may wind up in the nourishment or water of an uninfected individual through ill-advised water and sewage treatment [50] or disgraceful sustenance taking care of. The oral-oral course would happen through mouth-to-mouth contact.

It is regularly asked why a few patients get to be symptomatic while others don't. Danger of disease increments with: a family history of ulcers, presentation to polluted sources (e.g. taking tainted sustenance), poor sanitation [51-64], and swarmed living conditions.

The presence of ecological *H. pylori* stores has been recommended and epidemiological studies demonstrate that water can be a wellspring of *H. pylori* disease. Concentrates on have demonstrated that there is a noteworthy connection between individuals who have Peptic Ulcer Disease [65-68] and *H. pylori* microscopic organisms pollution in their private well. Analysts found that a high rate of wells (85%) that have coliform microorganisms additionally have the *H. pylori* microbes [69] and that 65% of private well water tests and 75% of surface water tests contained the *H. pylori* microbes [70-76].

There is a requirement for a methodical review of ecological and consumable (fit to drink) waters for the nearness of *Helicobacter pylori*, as its nearness in source or treated waters has significant general wellbeing and epidemiological ramifications. The potential nearness of the life form in source water requires the documentation of treatment and sterilization methods to keep the disease of drinking water customers [77-83].

## CONCLUSION

In the aspect of health problems in India and as well as Public Health importance [84-91], *Helicobacter pylori* is one of the most important microorganisms for India. In this paper, in brief the life cycle of *H. pylori*, its transmission with prevalence in India and some recently done microbiological research of *H. pylori* were discussed. It is true that India needs to give more emphasis on microbiological research for its improvement and development. Besides this, people should be more aware about their food and hygiene. Even at urban areas of India [92-94], still many literate people are not aware about the importance of proper hand washing before taking and preparation of food. Prevention is always better than cure. When people are healthy, most of them are unaware about how a healthy life should be maintained and how diseases can be prevented. It is the high time for India to give emphasis more on preventive medicine [95-100] and to grow social awareness against *H. pylori*. Giving more importance on education and healthy life style [94] can be its important solution.

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