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## **Prevalence and treatment of peptic ulcer at educational Al Hussein Hospital and review of antibiotics from global sources**

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**Abstract**--Infection with *Helicobacter pylori* (*H. pylori*) is a prevalent global infection that is a leading cause of peptic ulcer disease and stomach cancer. Determine the prevalence of *H. Pylori* in the province of Thi-Qar from 2017 to 2018. Data was collected utilizing a periscope on the second floor of Educational Al Hussein Hospital's Gastroenterology Unit for patients with gastrointestinal ulcers on the basis of age, gender, housing area, and month. A survey of the therapies utilized throughout the world was performed to get information on ulcer therapy. The current study found that the number of people infected with *H. pylori* in 2017 was higher than the number of people infected in 2018, in both sexes, with the overall number of people infected in 2017 being higher than the total number of people infected in 2018. (250). Females between the ages of 15 and 35, living in the countryside during the month of May, had a significant frequency of *H. pylori* with gastric ulcer. The treatment of stomach ulcers employed in the gastrointestinal unit of the patients was positive tests for *H.pylori* infection, Treatments were pretty similar with the global sources, but were not categorized into standard or alternative therapy, and did not employ Levofloxacin in treatment. This demonstrates the doctor's ability in selecting proper treatment in Educational Al Hussein Hospital as an alternative therapy.

**Keywords**---*helicobacter pylori*, treatment, educational, Al Hussein hospital.

## Introduction

H.pylori infection is one of the most common human infections globally; nearly half of the world's population is infected with H. pylori[1], with the majority of infected individuals asymptomatic; it acts as a cofactor to cause gastrointestinal (GI) disorders (dyspepsia) in a small but noticeable minority of infected individuals. [2] Gastric adenocarcinoma and mucosa-associated lymphoid tissue lymphoma are important consequences of H. pylori gastritis, which is the most common cause of chronic active gastritis.[3] In underdeveloped nations, H. pylori infection is one of the most common gastroenterological public health issues. [5] By the age of 20, 80 percent of the population may have been infected. In India, the prevalence of this illness in children aged 0–4, 5–9, and 10–19 years is 22 percent, 56 percent, and 87 percent, respectively. [6]

In poor countries, H. pylori infection is most common in early infancy (30–50%), followed by adulthood infection (> 90%). Until it is treated, colonization is permanent. H. pylori infection has been associated to low socioeconomic status, poor hygiene, and overcrowding [6, 7], all of which are common in developing nations. The bacteria is genetically distinct, can thrive in an acidic stomach environment, and is presently developing antibiotic resistance. Despite the fact that the epidemiological distribution of H. pylori differs across the world, the magnitude of H. pylori has been estimated to be 70.1 percent in Africa, 69.4 percent in South America, 66.6 percent in Western Asia, 34.3 percent in Western Europe, and 37.1 percent in Western Europe (North America) [8–10]. Warren and Marshall discovered curved bacilli on gastric epithelia obtained from patients with active chronic gastritis in 1983, and it has since been proven that H.pylori is responsible for a variety of gastrointestinal disorders, including peptic ulcers. [11] A peptic ulcer is a kind of ulcer that occurs when the epithelium lining surface of the stomach is exposed to acid production from the gastric glands. [12].

PPI (regular dosage), amoxicillin (1 g), and clarithromycin (500 mg) twice daily for 7-14 days is indicated as a first-line therapeutic option for H. pylori management [13]. Although their efficiency has steadily declined globally over the last decade, this is mostly due to a development in bacterial resistance, notably against clarithromycin, the major antibiotic used to treat H. pylori [14]. Quadruple therapy is indicated as an alternative first-line therapeutic option for the management of H. pylori in the ACG (American college of gastroenterology) recommendations. [13]. Because of the increasing number of medications and frequent administration (four times daily), combination capsules comprising bismuth, metronidazole, and tetracycline were developed [15]. The FDA, for example, has authorized a combination capsule (Pylera)<sup>®</sup> comprising bismuth sub citrate 140 mg, metronidazole 125 mg, and tetracycline 125 mg [16]. The study's goal is to establish the prevalence of H. Pylori in the province of Thi Qar from 2017 to 2018, as well as to find the best therapy for peptic ulcers in Educational Al Hussein Hospital and compare it to therapies used throughout the world.

## Method

On the second floor of Educationa Al Husseinl Hospital, data was collected using a periscope for patients with gastrointestinal ulcers on the basis of age, gender,

housing area, and month. A survey of the therapies utilized throughout the world was performed to get information on ulcer therapy.

## Results

For the years 2017 and 2018, the total number of afflicted persons (250). According to the findings of the current study, the number of people infected with *Helicobacter pylori* in 2017 was higher than the number of people infected in 2018, in both sexes, with a total of 250 people affected.

Table 1  
Distribution of infection with *H. pylori* by years and gender

gender	2017	2018
female	100	<b>70</b>
Male	50	<b>30</b>
Total number	150	<b>100</b>

The current study showed that the number of the age groups afflicted by *Helicobacter pylori* were (15–35) years old, with (150) infected people in 2017 and (100) infected people in 2018.

Table 2  
Distribution of infection with *H. pylori* by age

age	2017	2018
15 – 35	70	<b>56</b>
35 – 55	50	<b>32</b>
> 60	30	<b>12</b>
Total number	150	<b>100</b>

The results of the present study showed that people infected with *H. pylori* were infected by housing area. The results were different for each year, with the number of injured in the countryside being the highest in 2017 (120), then reversing in 2018, with the number of injured in the countryside being the lowest (35).

Table 3  
Distribution of infection with *H. pylori* by Housing area

Housing area	2017	2018
City	70	<b>15</b>
Countryside	120	<b>35</b>
Total number	190	<b>60</b>

The results of the Current study showed more infection in months, May, June and July During 2017 and 2018.

Table 4  
Distribution of infected with *H. pylori* by months of the year

year	January	February	March	April	May	June	July	August	September	October	November	December	Total number
2017	14	5	8	12	28	30	20	15	8	5	4	3	150
2018	3	6	8	10	18	20	15	10	6	1	2	1	100

In this table(5), we (line 1, line 2) therapy by H pylori Treatment Regimens Common In Iraq, which is utilized to treat ulcer patients sent to the Educational Al Hussein Hospital's endoscopic examination Unit.

Table 5  
*H. pylori* Treatment Regimens Common in Iraq

	Therapy
Line 1	Flagyltal 500 mg + Clarithromycin 500 mg + lanzprazol cop + Amoxyl cop
Line 2	Flagyltal 500 mg + Amoxyl cop + Bismuth cop

Table (6) use the therapy. (Clarithromycin triple, Bismuth quadruple, Non bismuth based quadruple) for *H. pylori* Treatment Regimens.

Table 6  
*H. pylori* Treatment Regimens First – line Options

Therapy	Dosing	Duration (days)	Eradication
Clarithromycin triple	PPI <sup>b</sup> bid Clarithromycin (500 mg) bid Amoxicillin bid or Metronidazole (500 mg TID)	14	<b>70 - 85</b>
Bismuth quadruple	PPI bid Bismuth subcitrate (120–300 mg) / Bismuth subcitrate(300 mg) qid Metronidazole (250–500 mg) qid Tetracycline (500 mg) qid	10 - 14	<b>75 - 90</b>
Nonbismuth. Based quadruple	PPI bid Amoxicillin (1 grm) bid Clarithromycin (500 mg) bid Metronidazole	10 - 14	<b>90</b>

	(500 mg) bid		
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Table 7 use the therapy (Sequential, Hybrid) for *H. pylori* Treatment Regimens

Table 7  
H pylori Treatment Regimens (Alternative or Salvage)

Therapy	Dosing	Duration (days)	Eradication
Sequential	PPI bid and Amoxicillin (1 gm) bid, then:PPI bid Clarithromycin (500 mg) bid Metronidazole (500 mg) bid	5 – 7 then 5 – 7 (total 14)	> 84 <sup>d</sup>
Hybrid	PPI bid + Amoxicillin (1 gm) bid, then:PPI bid + Clarithromycin (500 mg) bid + Amoxicillin (1 gm) bid + Metronidazole (500 mg) bid	7, then 7 ( total 14)	88.6 <sup>d</sup>

Table (8) use the therapy (Levofloxacin triple, Levofloxacin sequential, Load Levofloxacin omeprazole, Alinia doxycycline) for *H. pylori* Treatment Regimens.

Table 8  
*H pylori* Treatment Regimens Levofloxacin – Containing (Alternative or Salvage)

Therapy	Dosing	Duration (days)	Eradication
Levofloxacin triple	PPI bid Levofloxacin (500 mg) Amoxicillin (1 gm) bid	10 - 14	<b>79 – 81<sup>d</sup></b>
Levofloxacin sequential	PPI <sup>d</sup> bid + and Amoxicillin (1 gm) bid, then:PPI bid + Levofloxacin (500 mg) bid + Metronidazole (500 mg) bid	5 – 7 than 5 – 7 (total 14)	<b>83.6 – 87.4<sup>d</sup></b>
Load Levofloxacin omeprazole, Alinia doxycycline	PPI ( double dose qd) Levofloxacin (250 mg) qd Nitazoxanide (Alinia) (500 mg) bid (or Metronidazole 500 mg bid ) Doxycycline (100 mg) qd	7 - 10	<b>89<sup>d</sup></b>

## Discussion

Infection with *Helicobacter pylori* is a worldwide disease that causes severe illness and mortality. [17, 18] Several research have been conducted since the discovery of *H. pylori* to determine the prevalence of *H. pylori* among Gastroduodenal symptoms. Human *H. pylori* patients were , a finding differed in from that of Hajiani et al., (2008)[19] for *H. pylori* positivity, where male just a marginal preponderance. In a research by Yasir et al., (2014)[20], the prevalence of male gender over female in *H. Pylori* positive individuals was discovered. [20] This related to the men have greater infection rates to women, and the evidence association between sex and bacteria infection. It's conceivable that antimicrobials used for other disorders are more likely to remove infection in women.

This study found a higher incidence of stomach ulcer in young individuals aged 15 to 35 years, compared to peptic ulcers in those aged 35 to 55 years, which was similar with Dong et al., (2004)[21], who found older patients with gastric ulcer than peptic ulcer. [21] This might be due to a reduction in defense components such mucus, bicarbonate production, and prostaglandins, all of which are capable of healing through their atrophic impact .[22]. In this investigation, we discovered a greater prevalence of stomach ulcers in *H. pylori* infected individuals than in people who did not have *H. pylori* infection. Chao Wu et al., for example, observed similar findings (2008). [23] This might mean that *H. Pylori* infection was the primary environmental risk factor in patients with stomach and duodenal ulcers .[24]. Teaching Al Hussain Hospital's current therapy for stomach ulcers is identical to what is utilized internationally. This demonstrates the doctor's ability to identify suitable therapy as well as a continual monitoring of treatment progress throughout the world. However, the study revealed that levofloxacin was not employed. The lack of a variety of therapies makes ulcer healing difficult, but when all available treatment options are applied, the treatment is simple and the infection rate is lowered, according to international sources.

The doctor should be informed on the most recent therapy. In order to eliminate the patient's danger of *H.pylori* infection, which can lead to stomach cancer if treatment is delayed. The standard therapy [a 7-day of treatment couesd proton-pump inhibitors], was recommended as the 1-line for infection of *H. pylori*, has lost of efficacy, with rates in most insufficient. [25]. In low clarithromycin resistance -containing or bismuth-containing (salts, PPIs, and azole) quadruple are recommended as 1-line treatment, the latest Guidelines developed by the *Helicobacter* Group. Improved outcomes in first-line treatment can be obtained in a variety of ways, including increasing PPI doses, prolonging therapy, and adding an medication (such as probiotics) [26], or switching the second drug from amoxicillin to metronidazole. The bismuth quadruple has been proposed as a one-line in treatment clarithromycin resistance. If this therapy is not available, non-bismuth quadruple therapy (three antibiotics + PPIs) and so-called "sequential therapy" are used instead (that includes five days of PPIs plus amoxicillin followed by five more days of PPIs plus tinidazole and clarithromycin) [26] have been suggested. Other-line of treatment include l-floxacin-based droge or containing therapy [26]. The fact empirical medications have been following failure of other-line [27], current the published Guidelines [26] the antibiotic susceptibility testing

to subsequent therapy scenario, when practicable. The thrombocytopenic, iron show anemia, and ulcer in individuals that low-dose of commencing with a inhibition steroidal. Patients should antibiotic exposure when choosing a antibiotic plan to H. pylori, and the information must be factored into the decision.

### **Conclusion**

- A significant frequency of H. pylori with stomach ulcer was discovered in females aged 15 to 35 in the nation in May 2017.
- The treatment of stomach ulcers utilized in the gastrointestinal unit of the patients was positive tests for H.pylori infection, Treatments were fairly comparable to worldwide sources, but were not split according to standard or alternative therapy, and did not use Levofloxacin in treatment

### **Recommendations**

Complete the full course For treatment and early diagnosis of bacteria in order to avoid the development of ulcers to cancer.

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