

Failure of three Recommended Regimens to Treat a Case of Gastritis Caused by *Helicobacter pylori*

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ABSTRACT

Helicobacter pylori (*H. pylori*) is a gram-negative pathogen that leads to chronic bacterial infection. Approximately, 50% of the world's population is affecting even though the precise route of transmission is not known. Up to 90% of people infected with *H. pylori* never experience symptoms or complications and the majority remains asymptomatic. Treatment failure can occur and physician must deal with case as recommended by guidelines. This report describes the management of a man with gastritis caused by *H. pylori* that was failed to the three recommended regimens. The patient was initially (first visit) diagnosed as a case of stomach pain (irritation) due to spicy/chilly food. Then the patient was followed regularly up to six visits approximately for 25 weeks with clinical and laboratory assessment provided by medical prescription of recommended regimens. This paper has been reported to describe an unexpected beneficial response to treatment, report unlabeled or unapproved uses of medication and show a positive personal impact despite, the lack of advanced medical facility.

Keywords: Proton pump inhibitors, Stool analysis tested positive for *H. pylori*, Urea breath test

CASE REPORT

A 42-year-old man, in Sudan; Gezira state; came with chief complaint of upper abdominal discomfort, bloating, nausea and feeling of gastric heaviness after eating spicy food since 13 days. The pain was mainly epigastric, dull, and not radiated, relieved by eating small amounts of non-spicy food and aggravated by eating chilly/spicy food. Previous history, social habits, and drug history were insignificant. No history of hospitalisation or surgical operation. A body mass index 24 kg/m², temperature 37°C, blood pressure of 131/78 mmHg, heart rate of 88 beats/minute, respiratory rate of 18 breath per minute, general and systemic examination revealed nothing significant. The laboratory investigation was not requested. The patient was initially diagnosed as a case of stomach pain (irritation) due to spicy/chilly food. He was reassured

and advised to avoid spicy/chilly food and given Mebeverine 200 mg twice a day for five days but the patient again visited the clinic after eight days with the same complaint. On the first visit, no investigations were requested. Eight days later the stool analysis and Widal Test for typhoid fever were requested which were normal and stool analysis tested positive for *H. pylori*. Seven weeks later, the test of eradication was positive. At the fourth visit stool analysis tested positive for *H. pylori*. Also, complete blood picture and renal function tests and electrolytes are normal. Seven weeks later stool analysis tested positive for *H. pylori*. On the sixth visit, stool analysis tested negative for *H. pylori*. Also, Urea Breath Test (UBT) was performed and it was negative [Table/Fig-1]. The patient was managed by using different regimens for six months under a regular follow-up.

Visit	1 st Visit	2 nd Visit	3 rd Visit	4 th Visit	5 th Visit	6 th Visit
Day	24.07.19	01.08.19	13.09.19	16.10.19	25.11.19	04.01.2020
Symptoms/ Signs	Upper abdominal discomfort, bloating, nausea and feeling of gastric heaviness after eating. No abnormal physical findings.	Same as the first visit. Symptoms might be differing from one patient to another. Other symptoms loss of appetite, anorexia, unexplained weight loss, heart burn	Abdominal discomfort No abnormal physical findings. <i>H. pylori</i> rarely cause abdominal physical findings	Same as the first visit <i>H. pylori</i> rarely cause abdominal physical findings	Upper abdominal discomfort, mild headache Clarithromycin adverse effects (nausea, diarrhea for 4 days) <i>H. pylori</i> rarely cause abdominal physical findings	Asymptomatic This indicates well response for the regimen
Investigations	Not requested No need for investigations because, it was simple diagnosis (gastric irritation due to spicy food)	Stool analysis tested positive for <i>H. pylori</i>	Stool analysis tested positive for <i>H. pylori</i> .	Stool analysis tested positive for <i>H. pylori</i> .	The stool analysis tested positive for <i>H. pylori</i> . Renal function tests and complete blood picture were normal.	Stool analysis tested negative for <i>H. pylori</i> . The urea breath test was done in another hospital in different city and it was negative. Urea Breath Test is a good one for irradiation
Treatment	Mebeverine capsule 200 mg BID for five days. Decision to give medicine works by relaxing the stomach.	(Pantoprazole 40 mg bid + Clarithromycin 500 mg bid + Metronidazole 500 mg tid) for 14 days.	(Pantoprazole 40 mg bid + Clarithromycin 500 mg bid + Metronidazole 500 mg bid + Amoxicillin 1 gram bid) for 14 days	(Pantoprazole 40 mg bid + Bismuth Subsalicylate 524 mg qid + Metronidazole 375 mg qid + Tetracycline 500 mg qid) for 14 days.	(Pantoprazole 40 mg bid + Clarithromycin 500 mg bid + Amoxicillin 1gram bid + doxycycline 100 mg daily) for 14 days.	Advised Educated Reassured No medicine
Follow-up outcome	Patient not improved. Eight days later patient came with the same complaint.	The patient improved for seven days since starting the treatment in the second visit.	The patient improved for 23 days since starting the treatment in the third visit	The patient improved for 19 days since starting the treatment in the fourth visit	Asymptomatic, This indicates well response for the regimen	Given an open appointment if needed

[Table/Fig-1]: Treatment and outcomes of the patient.

DISCUSSION

Helicobacter pylori is a common worldwide infection. Half of the world's population is affected [1]. The disease is very infectious, and the accurate route of transmission is not clearly understood [2,3]. The majority of infected people around 90% does not have symptoms and complications [4]. The majority remains asymptomatic [5]. The symptoms may include bitter taste, abdominal pain, vomiting and nausea [6,7]. Abdominal pain and nausea are associated with acute gastritis [6]. Chronic gastritis is asymptomatic or bloating, gastric pain, nausea, vomiting, belching and Non-Ulcer Dyspepsia (NUD) can develop [6,8]. Gastritis due to *H. pylori* is the main cause of peptic ulcer disease by 20-10% [6,9,10]. The faecal-oral or oral-oral are the main routes of transmission [11].

The preferable diagnostic methods include UBT, faecal antigen assay, tissue biopsy [7]. UBT is highly sensitive and specific and the best choice for those who suffer from alarming symptoms in addition to that is the best test for the eradication of *H. pylori*, then the stool is an alternative for UBT [12,13]. The serological test can be used for the past infection and isn't useful for monitoring of the effectiveness and can be used without the hold up of Proton Pump Inhibitors (PPIs), antibiotic or bismuth [12,14]. Antibiotic and bismuth should be stopped 30 days and PPIs 14 days before the eradication test for *H. pylori* to avoid a false negative [12].

Treatment Options

The management of this case depends on different regimens [5,12,14-19].

First line includes many regimens for 14 days as following Clarithromycin 500 mg BID + PPI BID +either amoxicillin 1000 mg BID or metronidazole 500 mg BID; Clarithromycin is well-tolerated and safest; Clarithromycin-resistance and penicillin allergy managed by bismuth quadruple therapy. The Food and Drug Administration (FDA) has approved Pylera that contains 140 mg of bismuth subcitrate potassium+ 125 mg of tetracycline + 125 mg of metronidazole and PPI [5,12,14-19] and second-line levofloxacin 250 mg BID or 500 mg once a day + amoxicillin 1000 mg BID + PPI BID for 14 days. PPI double dose once a day + levofloxacin 250 mg once a day +doxycycline 100 mg once a day + either nitazoxanide 500 mg BID or metronidazole 500 mg BID for 7-10 days. Levofloxacin is a rescue treatment can be used if the first line has failed [16].

The disease can cause complications such as peptic ulcer disease, gastric lymphoma, and gastric cancer [5]. The case demonstrates the failure of three recommended regimens. The report included follow-up of the patient from the first to sixth visit. In all visits history, examination, investigations, advice, and medicine according to the guideline s recommended by the Canadian Association of Gastroenterology (CAG) in the 2016 was taken [14] and United States (US) Pharm in Collaboration [16] with American College of Gastroenterology [15].

Finally, important events such as testing and prescribing as per guidelines, drug adherence, education and follow-up appropriately should be done. In addition to that, the three options of the first-line therapy were failed to treat gastritis except (Pantoprazole 40 mg bid + clarithromycin 500 mg bid + amoxicillin 1gram bid + doxycycline 100 mg daily) for 14 days. The lack of facilities such as endoscopy, biopsy, UBT, and levofloxacin restricted the case management. Doxycycline can be used as a second line with PPI, Levofloxacin and metronidazole [16]. Regimens containing doxycycline are compelling in eradicating *H. pylori* [20].

We think the gastric pain (irritation) was due to spicy food and chilly taken as a usual habit in our food cooking. Also, the disease

(typhoid fever) is widespread in Sudan and usually presents with upper abdominal pain. In addition to that gastritis due to *H. pylori* occurs because of food and water contamination, lack of health education and inappropriate treatment.

CONCLUSION(S)

The patient was treated and followed-up approximately for six months without responses and treated with an unexpected beneficial response to treatment, unlabeled or unapproved uses of medication and shows a positive personal impact. The eradication test should be performed at 4 to 8 weeks following therapy. Although failure can take place but, the guidelines should be followed in each case management. Referral to gastroenterology is the main part of management if the patient is not responding to the available regimens or in case of cancer suspicion.

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