

Effect of A Unani Drug Compound in Helicobacter Pylori Positive Antral Gastritis

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ABSTRACT

Aim: We undertook this study to find out the effect of a Unani/Herbal drug compound on the antral gastritis/gastritis and its role in the eradication of H.pylori.

Methods: Study was conducted on 220 patients having Helicobacter pylori positive antral/generalized gastritis, confirmed by endoscopy and Rapid urease test. 110 patients were given Unani/Herbal drug compound (Group A) and 110 were given placebo (Group B) for 3 months. After 3 months endoscopy and RUT were repeated to assess the status of antral/generalized gastritis and eradication of Helicobacter pylori bacteria in both the groups.

Results: In our study we found the association between antral gastritis and H.pylori to be 88.7%. In group A patients showed appreciable improvements in symptoms, 96.4% patients in group A got relief from antral gastritis while in group B only 6.4% patients could get relief from gastritis and the difference is highly significant ($p < 0.0001$), in group A test drug eradicated H.pylori by 98.8% and in group B 8.8% eradication was done by placebo. The difference is highly significant ($p < 0.0001$).

Keywords: Antral, Gastritis, Endoscopy, S Helicobacter Pylori, Unani

1. INTRODUCTION

Worldwide chronic gastritis and peptic ulcer disease are most common disorders and antral gastritis is common finding during endoscopy. A close relationship between chronic gastritis and Helicobacter pylori (H.pylori) infection has been reported and about 75% patients with chronic gastritis have been found to have H.pylori infection compared to 10% in those without gastritis [1].

Since the discovery of H.pylori in 1882 BY Dr. Berry Marshall and Dr. Robin Warren in the stomach of patients with gastritis and stomach ulcers, H.pylori has been a focus of clinical and biochemical researches [2]. 50% or more of world's population harbour H.pylori in their upper

gastrointestinal tract. The infection of H.pylori is more prevalent in developing countries like in India it is as high as 80% and the incidence is decreasing in western countries due to higher hygiene standards and wide spread use of antibiotics [3], [4].

H.pylori bacteria is a common transmittable human pathogen, once infected with this bacteria most of the persons remain asymptomatic. Chief symptoms of infection include abdominal pain, bloating or fullness, dyspepsia or indigestion, decreased hunger and nausea/vomiting. In infected patients disease starts as chronic superficial gastritis, eventually it progresses to atrophic gastritis and then to gastric carcinoma in some cases. Other manifestations of H.pylori infection

include peptic ulcer disease, primary gastric B-cell lymphoma, iron deficiency anaemia and B12 deficiency [5]-[8]. The most accurate way to diagnose antral gastritis caused by *H.pylori* is to do upper gastrointestinal endoscopy followed by rapid urease test (RUT) by taking a small piece of mucosa of antrum.

The treatment regimens for *H.pylori* positive antral gastritis are available in modern medicine which include a minimum of 2 antibiotics like amoxicillin, tinidazole or clarithromycin in combination with gastric acid inhibitors [9],[10], but these regimen are not satisfactory due to some other associated problems, like the patient's compliance, side effects and bacterial resistance, higher cost and recurrence [11]-[15].

Worldwide hundreds of herbal drugs are being used in traditional medicine for eradication of *H.pylori* and to treat gastritis [16]-[24]. Unani system of medicine has vast treasure of products which have been indicated for the treatment of gastritis by Unani physicians and among them some have been shown to be effective in eradication of *H.pylori* in vitro and in vivo studies e.g.

Single drugs (Mufrid adviya): *Althaea rosa* Linn (Khatmi) [25], *Alpinia galanga* (Khulanjan) [26], *Aloe barbadensis* (Elva) [27], *Anchusa strigosa* (Gaozaban) [28], *Glycyrrhiza glabra* (Asl-us-soos) [29],[30], *Withania somnifera* (Asgand)[31], *Zingiber officinale* (Adrak) [32],[33]-[50], *Andrographis paniculata* wall (Bhui neem) [34], *Emblica officinalis* (Amla) [16],[35],[36], *Picrorhiza kurroa* (Kutki)[37], *Nigella sativa* Linn (Kalongi) [38], *Curcuma longa* Linn (Haldi) [17],[18],[39], *Berberis aristata* (Dar hald) [51]-[53], *Momordica charantia* Linn (Karela) [54], *Aegle marmelos correa* (Bael) [55], *Asparagus racemosus* (Satawar) [56], *Acacia arabica* (Samagh e arabi) [57],[58], *Myristica fragrans* Houtt (Jaiphal) [59], *Plantago ovata* (Aspghol), *Bambusa arundinacea* (Tabasheer), *Pistacia lenticus* Linn (Mastagi). [60],[40],[41]-[49]

Compound drugs (Murakkab adviya): *Majoon Dabeedulward* [61], *Qurs e Satawari* [62], *Qurs e Tabasheer* [63], *Jawarish e Tabasheer* [64], *Majoon e zanjbeel*, *Jawarish e Anarain*, *Jawarish e Mastagi*, *Khameera Sandal*, *Itrifal Aftimoon*, *Sharbat e Neelofer*, *Sharbat e Anar*, *Sharbat e Unnab*. [40],[41]-[49],[65]-[74].

We undertook this study to find out the effect of a Unani drug compound (constituents given in table no. 1) on the antral gastritis/gastritis and its role in the eradication of *H.pylori*.

TABLE-1

Unani Drugs	Botanical Names	Part Used	Ratio In Each Capsule (Each Cap. Of 500 Mg)
Asl-us-soos	Glycyrrhiza glabra	Stem and bark	1 part
Aspghol musallam	Plantago ovata	Seeds	2 part
Samgh e arabi	Acacia arabica	Dries exudate	2 part
Mastagi	Pistacia lenticus	Resin	1 part

2. MATERIAL AND METHOD

This study was conducted within the duration of 2 years (during February 2011 to 2013) in the department of Surgery (Jarahat), Ajmal Khan Tibbya College, AMU, Aligarh.

This was a randomized single blind, controlled clinical trial.

2.1. Inclusion Criteria

We included the patients who met the following criteria.

- (i) Patients having following symptoms at least for 7 days.
 - a. Heart Burn
 - b. Nausea
 - c. Vomiting
 - d. Indigestion
 - e. Abdominal pain
- (ii) Patients with antral gastritis, diagnosed by endoscopy.
- (iii) *H. Pylori* positive patients, confirmed by rapid urease test (RUT).
- (iv) Age between 10 yrs. To 80 years.

2.2. Exclusion Criteria

We excluded the patients who met with any of the following criteria.

- (i) Patients who had NSAIDs or any antibiotics with in the last 4 weeks.
- (ii) Any systemic disease (Hepato-renal and pulmonary malfunction)
- (iii) Patients with prior history of pyloric stenosis gastric resection.
- (iv) Patients with prior history of peptic ulcer or gastric carcinoma.
- (v) Patients with active G.I. haemorrhage, Obstruction a perforation.
- (vi) Alcoholic Subjects.
- (vii) Pregnancy and lactation.
- (viii) Anxiety disorders.
- (ix) Bleeding disorders.
- (x) HBs Ag +ve and HIV +ve

2.3. Methodology

Permission from the institutional ethical committee was taken before starting the study. A written and well informed consent was taken from the patients before participation into the study. The patients who were having the features of chronic gastritis like heart burn, nausea/vomiting, indigestion, abdominal pain and loss of appetite were screened and they were called for endoscopy, nil orally (fasted overnight). During endoscopy the area of anomaly was documented and at the same time punch biopsy was taken from antrum of the stomach and a rapid urease test (RUT) was done from the mucosa to confirm the presence or absence of H.Pylori bacteria. Only the patients having antral gastritis and/or generalized gastritis with H. Pylori positive test (RUT) were enrolled in the study and the selected patients were divided into two groups of group A and group B. Group A was given the Unani Drug compound and group B was given the placebo. Unani drug compound and placebo were given in the dose of 2 capsules twice daily before meals with water for 3 months. In follow up all the patients were called weekly to note down the symptomatic relief and after 3 months of treatment the symptomatic relief was again noted down and endoscopy was repeated by the same endoscopist in our department, changes in the endoscopic findings were documented and RUT was repeated from the mucosa taken from the antrum by biopsy during post-treatment endoscopy for the confirmation presence/absence of H. Pylori.

2.4. Statistical Analysis

We applied Yates corrected Chi square test to analyse the results.

3. RESULTS AND OBSERVATIONS

A total of 329 patients with the complaints of heart burn, nausea/vomiting, indigestion and abdominal pain were screened and it was observed that among screened 329 patients 69.6% (229) patients were found to have antral gastritis and 5.7% (19) were having generalized gastritis and rest were having hiatus hernia, reflux oesophagitis, duodinitis, gastric ulcer in the percentage of 21.8%, 16.7%, 11.5% and 1% respectively (table no.2).

TABLE-2

Endoscopic finding	No. of patients	Percentage
Antral gastritis	229	69.6
Generalized gastritis	19	5.7
Hiatus hernia	72	21.8
Reflux oesophagitis	55	16.7
Duodinitis	38	11.5
Gastric ulcer at pylorus	03	1.0

After Rapid urease test 220 (66.80%) patients were found to be H.pylori positive antral gastritis/gastritis and rest 109 (33.20%) were H.pylori negative (table no.3), hence the study was conducted on 220 patients.

TABLE-3

Endoscopic finding	No. of pts	%	1	%	2	%
Antral /generalized gastritis	248	75.5	220	88.7	28	11.3
Other findings	81	24.4	70	86.5	11	13.5
Total	329	100.0	290	88.1	39	11.8

1. No. of pts with H.pylori +ve
2. No. of pts with H.pylori -ve

The maximum number of patients (65) were in the range of 20-30 years of age and the mean age is 36 ± 14.9 (table no.4). Among these 220 patients, 115 (52.30%) were males and 105 (47.7%) were females (table no.5). Table no.6 shows the symptomatic presentation of patients. Among 220, a maximum number of patients 208 (94.5%) were complaining of nausea/ and vomiting and abdominal pain. 89.5% (197) were having heart burn, 76.8% (169) were having loss of appetite and 71.8% (158) were having the complaint of indigestion.

TABLE-4

Age Group	No. of patients	Percentage
10-20	28	12.7
20-30	65	29.5
30-40	44	20.0
40-50	44	20.0
50-60	25	11.4
60-70	07	3.2
70-80	07	3.2
Total	220	100
Mean SD	36 ± 14.9	

TABLE-5

Sex of Patients	No. of patients	Percentage
Male	115	52.3
Female	105	47.7

TABLE-6

Symptoms	No. of patients	Percentage
Heart burn	197	89.5
Nausea/vomiting	208	94.5
Indigestion	158	71.8
Abdominal pain	208	94.5
Loss of appetite	169	76.8

These 220 patients were divide into 2 groups i.e. group A and group B of 110 patients each. Group A was prescribed Unani compound drug and group B was prescribed the placebo.

Table no.7 shows the comparative (pretreatment and post treatment) in symptomatology between group A and B. It was observed that the complaint of heart burn improved in 91.8% patients of group A, where as it improved only in 9.9% patients of group B. Complaint of nausea/vomiting improved in 94% patients of group A and it improved in just 12% of patients belonging to group B. Indigestion improved in 96.2% patients of group A and in group B it improved only in 8.9% patients. Abdominal pain was relieved in 92.5% patients of group A and just 5% of patients could get relief in group B. Complaint of loss of appetite was relieved in 92.3% patients of group A whereas in group B only 5.9% could get relief from the complaint of loss of appetite. In both the groups the difference of percentage in improvement is quite remarkable.

TABLE-7

Symptoms	Group A n=110			Group B n=110		
	1	2	3	1	2	3
Heart burn	98	8	91.8	99	89	9.9
Nausea/vomiting	100	6	94.0	108	95	12.0
Indigestion	80	3	96.2	78	71	8.9
Abdominal pain	107	8	92.5	101	96	5.0
Loss of appetite	85	4	95.3	84	71	5.9

1. No. of patient before treatment
2. No. of patient after treatment
3. Improvement in percentage

Table no.8 shows the endoscopic changes in antral gastritis/generalized gastritis after 3 months of treatment in group A and group B. It was observed that after treatment with the Unani drug compound 96.34% patients got cure from antral/generalized gastritis in group B, whereas none of the patients could get relief in group B after taking placebo. For table no 8 we applied Yates corrected chi saquare test and its value was 174.748 (d.f.=1, $p < 0.0001$) and the difference is highly significant.

TABLE-8

Status of gastritis	Group A		Group B	
	No. of patients	percentage	No. of patients	percentage
Cured	106	96.4	7	6.4
Not cured	4	3.6	103	93.6

Effect of Unani drug compound and Placebo after 3 months of therapy in eradication of *Helicobacter pylori* bacteria is shown in table no. 9.

TABLE-9

Groups	No. of patients who became <i>H.pylori</i> negative after treatment		No. of patients who remained <i>H.pylori</i> positive after treatment	
	No. of patients	percentage	No. of patients	percentage
Group A	101	91.81	9	8.18
Group B	6	5.45	104	94.54

Among 110 patients of group A, 101 patients became *H.pylori* negative and 9 patients remained positive, hence in group A the Unani drug compound eradicated the *H.pylori* bacteria in 91.8% of patients. In group B, after 3 months just 6 patients became *H.pylori* negative and 104 patients remained positive thus placebo could not eradicate *Helicobacter pylori* in 94.54% patients. On applying Yates corrected Chi square test, its value was 160.774 (d.f.=1, $p < 0.0001$) and the difference is highly significant.

4. DISCUSSION

The bacteria *H.pylori* has revolutionized the approach of acid peptic disease as it has been found to play an important role in gastritis, peptic ulcer disease and recently in gastric cancer [2],[75],[76]. The antral colonization with *H.pylori* organism has been reported from every corner of the world especially from developing and under developing countries [77]. Romshoo GH, et al [78] found the association between *H.pylori* infection to be 90% and in our study we found the association to be 88.7% which is almost similar.

The aim of this study was to demonstrate the effect of Unani drug compound containing “*Glycyrrhiza glabra* (Asl–us-soos), *Plantago ovata* (Asapghol musallam), *Acacia arabica* (Samghe arabi) and *Pistacia lenticus* (Mastagi)” in the treatment of antral gastritis and eradicating *H. pylori* bacteria from the stomach, which is a major cause. *Glycyrrhiza glabra* (Asl–us-soos)/Licorice reduces stomach secretion, produces thick protective mucus for stomach lining which protect it from inflammation, gastritis and peptic ulceration [79], it contains flavonoids thus it possesses anti-inflammatory and

antibacterial effect [80] and Krausse, R et al, in their study found that Licorice extract produced a potent effect against strain of *H.pylori* that are resistant against clarithromycin [81], Marjan Rahnama et al in a study showed the eradication effect of Licorice against *H.pylori* to be 70% [82]. The authors concluded that the study provides hope that Licorice can form the basis for an alternative treatment for *H.pylori* [83]. *Plantago ovata* (Asapghol musallam) water soluble seed husk polysaccharides promoted proliferation of human epithelial cells through growth factor receptors [84] and mucopolysaccharides derived from the husk of *Plantago ovata* showed wound cleansing and wound healing properties in guinea pigs [85], hence it is effective in healing of peptic ulcers and inflammation. In an in vitro study Castillo-Juarez et al and Nabati et al [86], [87] reported that *Plantago ovata* (Asapghol musallam) has anti-*H.pylori* activity. *Acacia arabica* (Samghe arabi) is shown to be protective against stress-induced gastric ulcer in vitro [88]. M. Amin et al [89] in an in vitro study found *Acacia nilotica* extract to be bactericidal against *H.pylori* and this anti-*H.pylori* activity may be attributed to the hydrolysable tannins, saponins, glycosides, phenols, terpenes and flavonoids [90]. *Pistacia lenticus* (Mastagi)/Mastic gum is cytoprotective and has mild anti secretory effect [91], it is effective for healing gastric and duodenal ulcer [92], [93] and Mastic gum has shown anti-*H.pylori* effect not only in vitro but in clinical trial as well [94], [95], [96]. Among all these studies, most of them are done in vitro.

In our study we observed that the Unani drug compound relieved the symptoms effectively in experimental group compared to placebo control group in 3 months and post treatment endoscopy revealed that this combination of Unani drug effectively cured 96.4% patients with antral/generalized gastritis and it was found to be highly significant. Each drug among *Glycyrrhiza glabra* (Asl–us-soos), *Plantago ovata* (Asapghol musallam), *Acacia Arabica* (Samgh arabi) and *Pistacia lenticus* (Mastagi) has been proved to be effective in treating gastritis and to possess antibacterial effect against *H.pylori* bacteria and in our study we found that the experimental Unani drug compound eradicated the bacteria in 91.81% subjects and the results were highly significant.

5. CONCLUSION

There are various drugs in Unani system of medicine for the management of gastritis and which possess Anti-H.pylori effect as well as their efficacy had been confirmed through various in vitro studies but these drugs lack human studies. In our study we found the Unani drug compound containing Glycyrrhiza glabra (Asl-us-soos), Plantago ovata (Asapghol musallam), Acacia Arabica (Samghe arabi) and Pistacia lenticus (Mastagi) to be effective in treating antral gastritis and eradicating H.pylori bacteria and it is recommended to conduct more clinical trials to prove their efficacy and obtain more conclusive results.

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