Clinical Evaluation of Unani formulation in Gastritis- A Pilot Study

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ABSTRACT

Background and objectives: Gastritis is a painful or inflammatory state of the stomach and the mucosa covering it. The most common cause of gastritis is helicobacter pylorus. It is caused by certain infection, or by the routine use of anti-inflammatory painkiller. Unani Physician has identified various medicinal products in classical text indicated for the treatment of gastritis. Therefore, a clinical trial was conducted to evaluate the clinical efficacy and safety of Unani Formulation in gastritis on scientific parameters. **Methods:** The study was designed as single blind pilot study on 12 patients of gastritis. Unani Formulation (Amla-2 part, Asl-Us-Soos-2 part, and Badiyan-2part) was given in the form of powder at the dose of 6 g twice a day after meal for the period of 28 days. All the patients of were assessed weekly on subjective parameters (at 0, 7th, 14th, 21th, and 28th day) whereas objective parameters were assessed before and after the treatment. The outcome of intervention was analyzed using appropriate statistical methods. **Results:** The study effects on subjective parameters like pain in abdomen, epigastric burning, nausea & vomiting and early satiety were found significantly reduced significantly. The objective parameter VAS and 5 PLS was found highly significant when compared before and after with p<0.0001. The results were analyzed after using paired 't' test. **Interpretation & Conclusion:** The findings about the both parameters (subjective and objective) that the 'Unani Formulation is effective gastritis and the cure was significant. Safety parameters (SGOT, SGPT, Blood Urea and Serum Creatinine) were remains unchanged. Therefore, it can be concluded that the Unani Formulation is safe and effective in management of gastritis.

Keywords: *Gastritis, Warm-e-Meda*, Unani Formulation.

INTRODUCTION

Gastritis (*Warm-e-Meda*) is a painful or inflammatory state of the stomach and the mucosa covering it.[1] Since the antiquity it is a well-known disease.[2] This disease was identified by renowned Unani scholars by different nomenclature.i.e. *Harqat-ul-Meda, Warm-e-Meda, Iltehab-e-Meda*.[3] Gastritis is the term for inflammation of the stomach lining.[4] The membranes lining the wall of the stomach protect it against acid and germs when the protective lining becomes irritated or harmed.[5] [6] The most important cause of gastritis is helicobacter pylori.[6] It is caused by certain infection, or by the routine use of anti-inflammatory painkiller.[7] Neutrophils, macrophages, lymphocytes and plasma cells are dominant in the chronic active inflammation.[7] The inflammatory cycle in the gastric mucosa contains multiple interleukins (IL-8, IL-10 and IFN-gamma).[6] Basically gastritis is two types i.e. acute and chronic.[2,3,4] Acute gastritis is often followed by very obvious issues with the stomach and intestines, which normally go away on their own after a few days.[8] Chronic gastritis is one of the most common human life-long, severe and insidious diseases.[9] It can be estimated that more than half of the world's population is suffering from this disease to some degree, suggesting that even many hundreds of millions of people worldwide may have chronic gastritis in one form or another.[10,11,12] Over years and decades, gastritis progresses slowly to atrophic gastritis marked by a loss of regular mucosal glands either in antrum or corpus, or both.[13] *Helicobacter pylori* infection is known to be among the most common human infections worldwide; approximately 50% of the world's population is infected with *H. pylori*.[14] Over the past decades, the prevalence of chronic gastritis has declined significantly among developed populations.[9] Globally, on average, just over half of people actually suffer from chronic gastritis.[15] Prevalence of *H. pylori* infection varies significantly from country to country and in a country, region to region.[16] [17,18,19] The prevalence of this infection in India is 22%, 56% and 87% respectively in 0-4 years, 5-9 years and 10-19 years.[20,21,22]

An acute gastritis sign includes; stomach pain, feeling whole, heartburn, nausea and occasionally vomiting, belching, loss of appetite.[23] According to Unani concept, *Warm-e-Meda* is an inflammatory state of mucous membrane of stomach, which arise due to *Galba-e- Khoon* or *Galba-e- Balgham*, it also known as

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'*Warm-e-Nazli*'.[24,25]

Unani Physician has identified several drugs in classical text that have been indicated by clinical experience for the treatment of gastritis and some of them have been shown to be effective in the eradication of H. pylori in vitro and in vivo studies e.g. *Badiyan, Mastagi, Mulethi, Isapgol, Kateera, Tabasheer, Pudina, Gile Armani*, where as some compounds are *Arque Ilaichi, Jawarish-e-Mastagi, Arque Badiyan, Jawarish Amla, Jawarish-e-Anarain, Qurs-e–Tabasheer, Jawarish-e-Tabasheer, Majoon-e-Zanjbeel*, etc. [26, 27,28]

In conventional medicine, gastritis treatment is possible with the combination of antibiotics and proton pump inhibitors, which are very expensive for average people and have an undesirable side effect.

Many drugs are used in the Unani medicine system to treat gastritis with promising effect and without any side effect So, we are intended to conduct a study entitled as evaluate the clinical efficacy and safety of Unani Formulation in gastritis on scientific parameters.

MATERIALS AND METHODS

Participants

Patients were identified and recruited from OPD of NIUM during 2018 was the diagnosed cases of *Warm-e-Meda* with age group: 25-60 years; both genders, patients having following signs and symptoms (i)burning in epigastric region (ii)nausea and vomiting (iii)dyspepsia (iv)abdominal pain (v) regurgitation (vi) endoscopically diagnosed cases of gastritis, patients willing to participate in the study and ready to follow the instructions whereas (i)Patient suffering from gastritis due to H-pylori (ii) patient with any systemic disease (iii)pregnant and lactating mother(iv)patient with history of peptic ulcer or gastric carcinoma(v)patient with active GI haemorrhage, obstruction and perforation and (vi) non co-operative patient

Study Design and eligibility:

This study was open observational study. An eligible patient with gastritis was enrolled for the study. At first, all participants were informed about the study protocol by being given a complete description of the objectives, benefits and potential harm of the study. Informed consent was received from the each participant who chosen to participate in the study. Total 20 subjects are screened and finally 12 subjects who met the inclusion criteria were enrolled for this pilot study.

Administration of drug:

Unani Formulation (Amla- *Emblica officinalis* Linn, Asl-us-Soos-*Glycyrrhiza glabra* Linn, and Badiyan- *Foeniculum vulgare* Mill each ingredient in equal part),[29,30,31] was given twice a day in the form of *Safoof* (powder) at the dose of 6 g twice a day after meal for the period of 28 days.

Assessments:

All the patients of were assessed weekly for subjective parameters (at 0, 7th, 14th 21th, and 28th day) where as objective parameters were assessed before and after the treatment.

Adverse Drug Effect:

During the course of trial, there is no any adverse event was recorded.

Statistical analysis:

Statistical analysis was performed using SPSS 15.0, used to analyze the data and use Microsoft word and Excel to create graphs, tables etc. The findings were statistically calculated using student t test, combined proportion test and exact Fischer test. Significance is measured at 5 per cent level. Results were based on continuous measurements as Mean $\pm$ SD (Min-Max).

RESULTS AND OBSERVATION

Baseline characteristics

The demographic characteristics of subjects were in baseline characteristics including age, genders, duration, dietary habits and temperament, (Table 1) were taken into consideration.

Primary Outcome

All the patients of were assessed weekly on subjective parameters (at 0, 7th, 14th 21th, and 28th day) where as objective parameters were assessed before and after the treatment [Table 2, 3].

Secondary Outcomes

All safety profile was found safe from baseline to end of the study without any adverse effect [Table 4].

Table 1: Distribution of the patients according to demographic details

Variables	Study group	Total (n=12)
Age in years		
25-35	3	3(25%)
36-45	2	2(16.66%)
46-55	7	7 (58.33%)
Total	**12**	**12(100%)**
Mean ± SD	**42.9±10.46**	
Gender		
Female	4	4(33.33%)
Male	8	8(66.67%)
Duration of Illness (in years)		
1	5	5(41.67%)
2	6	6(50%)
3	1	1(8.33%)
Mizaj		
Damvi	4	4(33.33%)
Balghami	8	8(66.67%)
Dietary Habits		
Mixed Diet	7	7 (58.33%)
Vegetarian	5	5(41.67%)
Total	12	**12(100%)**

[a]Student t test, [b]Fisher Exact Test, [c]Chi-Square Test, *Significant

Table 2: Evaluation of Subjective Parameters (SP) at before and after treatment

SP	0th Day	7th Day	14th Day	21st Day	28th Day	P value
PA	2.41±0.51	2.0±0.0	1.25±0.45	0.25±0.45	0.22±0.41	<0.0001
EP	2.51±0.52	2.08±0.28	1.25±0.45	0.33±0.49	0.30±0.43	<0.0001
NV	2.58±0.51	2.0±0.0	1.43±0.52	0.33±0.49	0.32±0.47	<0.0001
ES	2.5±0.52	2.0±0.0	1.41±0.51	0.25±0.45	0.23±0.40	<0.0001

By applying Kruskal-Wallis Test.

Table 3: Evaluation of Objective Parameters (OP) at before and after treatment

OP	Before Treatment	After Treatment	difference	P value
VAS	8.17±1.115	3.92±0.99	4.250	<0.0001**
5PLS	4.67±0.49	0.5±0.5	4.167	<0.0001**

Student t test (two tailed, dependent) has been used.

Table 4: Evaluation of Safety Parameters

Safety Parameters	Before Treatment	After Treatment	difference	P value
SGOT (mg/dl)	27.92±6.65	23.08±2.46	4.833	0.0276
SGPT (mg/dl)	30±3.133	23.5±1.624	6.5	<0.0001
Blood Urea (mg/dl)	28.917±3.343	23±2.594	5.917	<0.0001
Serum Creatinine (mg/dl))	0.842±0.067	0.742±0.067	0.1000	<0.0019

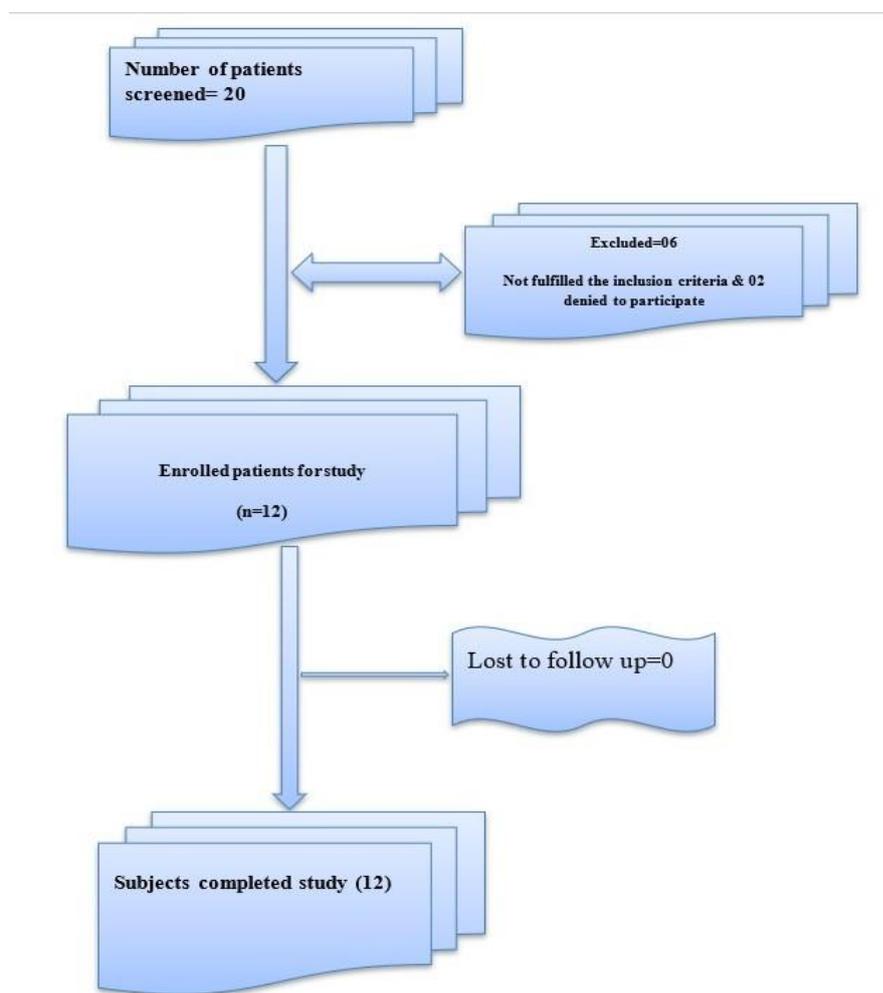Student t test (two tailed, dependent) has been used.

Figure 1: An overview of the study

DISCUSSION

According to the age group maximum number of patients, 7 (58.33%) were observed in age group of 46-55 years, 3(25%) in 25-35 years, and 2(16.66%) in 36-45 years with Mean ± SD: 42.9±10.46 (Table 1). This study coincide with the finding of Dumic I, et al, reported that gastritis more common among older than younger, so as far s more numbers of subjects were far between 46-55 years followed by 25-36 years of age.[32,33] In this study highest incidence of 8(66.67%) observed in male patients while 4(33.33%) are female patients (Table 1).This study finding support the claimed made by Liu ES and Dhakal OP et al, that prevalence of gastritis is more among males than in females.[34,35] Out of 12 patients 6(50%) were having disease since 2 years, 5(41.67%) were 1 year, 1(8.33%) were 3 years (Table No. 1) whereas Aditi A and Azer SA et al, reported that tendency of gastric is increase with increasing duration of illness.[36,37] 8(66.67%) patients of gastritis were *Balghami Mizaj* and, 4(33.33%) are *Damvi Mizaj* (Table 1). *Hakim Azam Khan* mentioned that *Warm-e-Meda* is more common among *Balghami Mizaj*.[3,38] Out of 12 patients 7 (58.33%) were found to be having mixed dietary habits and 5(41.67%) was pure vegetarian (Table 1). Mishra V and Appleby PN et al, reported that gastritis more common in non-vegetarians than vegetarians and had low risk of peptic ulcer in pure vegetarians than non-vegetarians.[39, 40]

Effect of test drug on subjective parameters:

Pain in Abdomen (PA):

Efficacy of Unani Formulation (UF) were assessed for pain in abdomen on the rating scale of nil, mild, moderate and severe gastritis. It was found that UF showed at 0, 7th, 14th, 21th, and 28th day are 2.41±0.51,2.0±0.0, 1.25±0.45, 0.25±0.45 and 0.22±0.41 reduction in pain in abdomen with p<0.0001. The reduction in pain in abdomen was significant statistically (Table 2). Reduction of pain in abdomen may be due to analgesic, anti-inflammatory, detergent, deobstruent property of *Amla, Asl-Us-Soos*, and *Badiyan* which are described Khazainul Advia, Makhzanul Mufradat and Unani Pharmacopoeia of India.[29,30,31] Fukai T and Raveendra KR et al reported that flavonoids from licorice extract exhibit anti-helicobactor pylori effect and reduced the abdominal discomfortness.[41,42]

Epigastric Burning (EB):

Efficacy of Unani Formulation were assessed for epigastric pain on the rating scale of nil, mild, moderate and severe gastritis. It was found that UF showed at 0, 7th, 14th, 21th, and 28th day are 2.51±0.52, 2.08±0.28, 1.25±0.45 0.33±0.49 and 0.30±0.43 reduction in epigastric pain. The reduction in epigastric pain was significant statistically with p<0.0001 (Table 2). Reduction of epigastric pain may be due to analgesic, *Musakkin Atash*, *Qabiz* and *Mubarrid* of *Amla, Asl-Us-Soos*, and *Badiyan* which are described Khazainul Advia, Makhzanul Mufradat and Unani Pharmacopoeia of India.[29,30,31] Varnosfaderani SK documented that, Amla hold high amount of ascorbic acid, phenols and tannins, which reduced the epigastric pain due to H2-blocker activity.[43]

Nausea & Vomiting (NV):

Efficacy of Unani Formulation were assessed for nausea and vomiting on the rating scale of nil, mild, moderate and severe gastritis. It was found that UF showed at 0, 7th, 14th, 21th, and 28th day are 2.58±0.51, 2.0±0.0, 1.43±0.52, 0.33±0.49 and 0.32±0.47 reduction in nausea and vomiting. The reduction in nausea and vomiting was significant statistically with p<0.0001 (Table 2). Reduction of nausea and vomiting may be due to analgesic, anti-inflammatory, antiemetic, sedative, detergent, property of *Amla, Asl-Us-Soos*, and *Badiyan* which are described Khazainul Advia, Makhzanul Mufradat and Unani Pharmacopoeia of India.[29,30,31] Arman MS et al found that Badiyan (*Feniculum vulgare*) exhibit antiemetic activity.[44]

Early Satiety (ES):

Efficacy of Unani Formulation were assessed for early satiety on the rating scale of nil, mild, moderate and severe gastritis. It was found that UF showed at 0, 7th, 14th, 21th, and 28th day are 2.50±0.52, 2.0±0.0, 1.41±0.51, 0.25±0.45 and 0.23±0.40 reduction in early satiety. The reduction in early satiety was significant statistically with p<0.0001 (Table 2). Reduction of early satiety may be due to analgesic, anti-inflammatory, detergent, deobstruent property of *Amla, Asl-Us-Soos*, and *Badiyan* which are described Khazainul Advia, Makhzanul Mufradat and Unani Pharmacopoeia of India.[29,30,31] One another study reported that Amla, Badiyan exhibit anti-flatulence activity.[45,46]

Effect of test drug on Objective parameters

VAS: The Mean ± SEM score for VAS for Unani Formulation on 0th day and 28th day was 8.17±1.115 and 3.92±0.99 respectively, with a difference of 4.250 which is statistically highly significant (p<0.0001). (Table 2). Reduction of pain may be due to analgesic, anti-inflammatory, detergent, deobstruent property of *Amla, Asl-Us-Soos*, and *Badiyan* which are described Khazainul Advia, Makhzanul Mufradat and Unani Pharmacopoeia of India.[29,30,31]

5PLS:The Mean ± SEM score for 5PLS for Unani Formulation on 0th day and 28th day was as 4.67±0.49 and 0.5±0.5 respectively, with a difference 4.167 which is statistically highly significant (p<0.0001). Reduction of pain may be due to analgesic, anti-inflammatory, detergent, deobstruent property of *Amla, Asl-Us-Soos*, and *Badiyan* which are described Khazainul Advia, Makhzanul Mufradat and Unani Pharmacopoeia of India.[29,30,31]

Safety and Tolerability of Unani Formulation:

The safety and tolerability of UF were assessed at pre and post treatment as per the protocol i.e. SGOT, SGPT, Blood Urea, and Serum Creatinine, were statistically analyzed. The study revealed that all the safety parameters are within the normal range values, and does not exhibit any significant difference statistically (Table 3,4).

CONCLUSION

The findings about the both parameters (subjective and objective) that the 'Unani Formulation is effective gastritis and the cure was significant. Therefore, it can be concluded that the Unani Formulation is safe and effective in management of gastritis. Limitations of the study were small sample size (pilot study) and shorter duration of clinical trial. As diverse mechanisms are involved in development of gastritis, elaborate studies are recommended to ascertain pharmacological actions of test formulation for longer duration in future studies.

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