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Research Article

**EFFECT OF HELICOBACTER PYLORI ERADICATION
THERAPY ON RELIEF OF CHRONIC IDIOPATHIC
UTRICARIA SYMPTOMS**¹Dr Muhammad Khurram Shahzad, ²Dr Raheel Tahir, ³Dr Danish Hassnain^{1,2} Department of Dermatology, Nishtar Hospital Multan, Pakistan³ Aziz Fatimah Hospital, Faisalabad**Article Received:** March 2019**Accepted:** April 2019**Published:** May 2019**Abstract:**

Objective: To know the relationship between *H. pylori* infection and chronic idiopathic urticaria and to observe the eradication therapy effects.

Study design: An observational study.

Place and duration: In the Dermatology department of Nishtar Hospital Multan in collaboration with pharmacology department for one year duration from November 2017 to November 2018.

Methods: Twenty patients with previous chronic idiopathic urticaria history were selected for the study. Serological tests were performed to determine the *H. pylori* infection presence and eradication treatment (Metronidazole 400 mg t.d.s, Clarithromycin 500 mg b.i.d and Esomeprazole 40 mg o.d) was given for 2 weeks. Clinical evaluation was performed on days 0, 1 month, 2 month, 3 month and 4 months using a scoring system (symptom rating scale). The current status of *H. pylori* was re-evaluated at 60 days to confirm any recurrence of symptoms and the efficacy of eradication therapy.

Results: In 19 of 20 patients, *H. pylori* infection was found positive and eradication treatment was given. In 18 patients, Eradication therapy was successful, 1 subject has not complete the study and one patient had recurrence. At day 0, Mean SES scores were 3.73 ± 0.45 , 2.52 ± 0.51 at 30 days, 1.52 ± 0.51 at 60 days, 1.15 ± 0.51 at 90 days and 0.47 ± 0.77 at 90 days. A change of 59.13 percent at $p < 0.002$ was observed.

Conclusion: *H. pylori* infection has a possible role in the chronic idiopathic urticaria pathogenesis.

Key Words: Chronic idiopathic urticaria (CIU), Symptom Assessment Scale (SES), Helicobacter Pylori (*H. pylori*, HP).

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INTRODUCTION:

Urticaria is a skin disease determined by the fast formation of erythema-surrounded hives ranging from 1 to 24 hours¹. The itching will always be present. From 1 to 24 hours, Individual lesion persists. "Urticaria" came from the Latin word *urtica* which means "nettle"². Nettle belongs to any plant of the genus *Urtica*³. These plants may secrete a stinging liquid immediately affecting the in contact skin. If the symptoms are noted for below than six weeks, CIU is acute and more than six weeks it will be chronic. It may be exposed to sunlight, thermal contact and cold⁴. When no cause is found, it may be idiopathic. When there is an increase in erythematous skin lesions with intense pruritus called as dermatological syndrome⁵. In 20% of the normal population it may be due to autoimmune reaction, but now recent advances shows, there is a close association between CIU and helicobacter pylori infection⁶. In developing countries, CIU is accompanied by peptic ulcer disease, gastric carcinoma and chronic gastritis and endemic⁷. It is the most common skin disease among patients coming to the dermatology department for outpatients and its incidence is between 1.2% and 23%. Because of its leakage etiology, it is a difficult task for the dermatologist to manage such cases⁸. This has a strong effect on patients the life quality leading to serious occupational, personal, economic and social disability compared to other patients' diseases. For chronic idiopathic urticaria (ICU), the main etiological agent is helicobacter pylori infection that initiated an inflammatory reaction in the gastric mucosa. Most of the times stomach symptoms are not involved. Several studies have been conducted to verify this association⁹. Several possible theories have been presented as this skin disease and their possible mechanisms. One possible theory may be that CIU infection may elicit an immune response by the release of the mediators; this results in a nonspecific increase in the sensitivity of the vessels of the skin to the vascular permeability enhancing agents¹⁰. The gastric mucosa of the patient infected with *H. pylori* increased in platelet activating factor (PAF), IL-8, C4 and leukotriene (LT) B4 production and these mediators had a significant effect on the skin. It is also suggested in urticaria for *H. pylori* specific IgE antibodies are formed.

MATERIALS AND METHODS:

This observational study was conducted in the Dermatology department of Nishtar Hospital Multan in collaboration with pharmacology department for one year duration from November 2017 to November 2018. After informed and written informed consent, 20 CIU patients (11 females and 09 males) were participate in the study. The CIU diagnosis was made when the appearance of the hives lasted more than 6 weeks and no condition or no other disease linked with urticaria was diagnosed. All subjects complete medical history, which also includes drug or food allergy was done (the data was obtained by questionnaire about their allergies and symptoms). Seventeen patients with significant medical conditions of known allergies were not included in the study. The *H. pylori* antibodies Serological detection was done to determine the presence of *H. pylori* infection at baseline (day 0). Using the ELISA technique; test was performed. This is a latex agglutination test for the antibodies formed against *H. pylori*. All *H. pylori*-positive antibodies patients (19 cases) received a three-week treatment (40 mg Esomeprazole capsule twice a day for 2 weeks, Metronidazole 400 mg tablet and Clarithromycin 500 mg tablet). On day 60, *H. pylori* infection was evaluated. For relieving symptoms using a scoring system called symptom evaluation scale 18 performed on days 0, 1 month, 2 month, 3 month and 4 months patients were analyzed. Using SPSS version 16.0 results were analyzed. Qualitative data (percentages and frequencies) were denoted as n (%). Numerical variables were mentioned as Student t test and mean \pm standard deviation. To compare ratios averages One-way ANOVA test was used. $P < 0.05$ was accepted as a significant level.

RESULTS:

Twenty patients with CIU were included in the analysis; 11 female (55%) and 9 male (45%). 35 to 60 years was the patients age with $\pm 50 \pm 10.1$ year mean \pm standard deviation (SD). The urticaria duration was from 6 months to 1 year, with an average $\pm 26 \pm 30.08$ months \pm standard deviation (Table 1).

**TABLE I:
BASELINE CHARECTERISTICS OF PATIENTS**

Characteristics	No of Patients (%)
Total Patients	20
Remained in study	19
Lost to follow	01
Age range	35-60
Mean age	50 ±10.1 SD
Gender	
Males	09(45%)
Female	11(55%)
Duration of Chronic Urticaria	
≥6 weeks	06(30%)
1 year	12(60%)
> 1 year	02(10%)

Subjects were analyzed to determine the efficacy of the drugs by improving the symptoms after taking triple treatment regimen, and the cases were evaluated on the days 0, 1 month, 2 month, 3 month and 4 months for the parameter of the assessment scale.

TABLE II: PERIODIC CHANGES IN SYMPTOM EVALUATION SCALE

Parameter	Day 0	Day 30	Day 60	Day 90	Day 120	P-Value			
						0-30	30-60	60-90	90-120
SES (Mean)	3.73	2.52	1.52	1.15	0.47	<0.02*	<0.005**	NS	<0.002*
SES (SEM)	± 0.45	± 0.51	±0.51	±0.37	±0.77	Percentage Change			
						Day 0-30	Day 30-60	Day 60-90	Day 90-120
						32.43	39.68	24.34	59.13

A significant statistically enhancement was noted in symptoms evaluation scale from 0 days to 1 month, from 2 months, from 3 to 4 months ($p < 0.002$). The SES Mean scores declines from 3.74 ± 0.46 on 0 day to 2.53 ± 0.50 on 1 month, on 2 months 1.52 ± 0.51 , on day 90 it was 1.15 ± 0.51 and on 120 days it was 0.47 ± 0.77 . A p value of < 0.002 to 59.13% percent change (Table III).

TABLE III: MEAN CHANGE IN SYMPTOM EVALUATION SCALE IN FROM DAY 0-120

Symptom Evaluation Scale	Day-0	Day-120	Percentage change	P-value
Mean ± SEM	3.73 ± 0.45	0.47 ± 0.77	87.39%	0.002**

In the SES parameter, an average change of 3.73 ± 0.45 was observed in the treatment period from 0 days to 120 days, on the 120th day at a mean of 0.47 ± 0.77 and at 3.73. A 87.39% change in the working time with a p value of 0.002 was obtained. It is shown in Table III. During follow-up, one patient died and recurrence of urticaria noted in one patient. (Table I). In 18 patients the eradication therapy was successful. In this parameter shown in Table IV, there was a significant change in this group by 90%.

TABLE IV: ASSESMENT OF H.PYLORI STATUS AT DAY O AND DAY 60

Parameter	Day O No of patients		Day 60 No of Patients		% Change
	+ve	-ve	+ ve	- ve	
H. pylori status	19	01	01	18	90%

DISCUSSION:

A gram-negative microaerophilic, oxidase, catalase and positive urease bacillus, H. pylori has four to six flagella, one of which allows them to move¹¹. Certain genetic and environmental factors have been linked to disease progression. Although it remained in the stomach and colonized, it may show extra intestinal symptoms such as in the skin, but this study was performed to confirm this association and it was observed that HP infection was prevalent in our population and there was also destruction therapy¹². Significant results have been shown to improve symptoms. Diagnosis was made by a serological assay, but for reasons of fitness, this test is generally performed as an immunoenzymatic test that detects antibodies in the serum, although there are many other tests. Several western studies have reports of contradictory association between HP infection and CIU, but in our study there was a high prevalence of HP infection, 95% of CIU patients and a solution of symptoms in infected patients¹³. H. pylori infection is one of the most common infections of humanity, its prevalence varies in different countries. It is seen in about 20% of the Australian population, 30-40% of the American and Canadian population, and 70% in Europe¹⁴. The highest prevalence was recorded in Africa, Asia and South America, where 70% to 90% of the population was infected. Our study also showed a similar prevalence. Although some researchers do not support this hypothesis, our study is consistent with studies conducted by many investigators according to the results of bacterial destruction in the treatment of urticaria symptoms¹⁵. Antihistamines are the first-line agents among the commonly recommended treatment options, but eradication has been performed to eliminate H. pylori infection. Therapies initially included amoxicillin, omeperazole and metronidazole, but they were not effective, but adding a macrolide gave a better result. It was noteworthy.

CONCLUSION:

Although CIU diagnostic tests may be considered to confirm H. pylori infection, the findings supposed

that anti-H Pylori treatment is effective significantly in the chronic idiopathic urticaria treatment.

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