Original Article

Chronic Idiopathic Urticaria and Helicobacter Pylori Infection: Effect of Eradication Therapy on the Relief of Symptoms

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ABSTRACT

OBJECTIVE: To find out the correlation between Chronic Idiopathic Urticaria and H.pylori infection and to observe the effect of Eradication therapy.

STUDY DESIGN: Observational study.

MATERIALS AND METHODS: 20 patients giving history of Chronic Idiopathic Urticaria were enrolled in the study. Serological testing for the presence of H. pylori infection done and were given eradication therapy (Capsule Esomeprazole 40 mg o.d, Tablet Metronidazole 400 mg t.d.s and Tablet Clarithromycin 500 mg b.i.d) for a period of 2 weeks. Clinical assessment was done at day 0, 30, 60, 90 and 120 by a scoring system (symptom evaluation scale), H.pylori status was reassessed at day 60 to confirm eradication effectiveness or to see any relapse of symptoms.

SETTING: The study was conducted by the Department of Pharmacology and Therapeutics, BMSI, JPMC with the collaboration of Department of Dermatology JPMC Karachi from May 2008 to August 2008.

RESULTS: Among 20 patients, 19 were positive for H.pylori infection and were given eradication therapy. Eradication therapy was successful in 18 patients one patient could not complete the study and there was relapse in one patient The mean SES scores decreased from 3.73 ± 0.45 on day 0 to 2.52 ± 0.51 on day 30, 1.52 ±0.51 on day 60, 1.15 ± 0.51 on days 90 and 0.47 ± 0.77 on day 120. A percentage change of 59.13% was observed with a p value of <0.002.

CONCLUSION: There is a possible role of H.pylori infection in pathogenesis of chronic idiopathic Urticaria.

KEY WORDS: Helicobacter Pylori (H.pylori, HP), Symptom evaluation scale (SES), Chronic Idiopathic Urticaria (CIU).

INTRODUCTION

Urticaria is a skin disorder characterized by rapid development of wheals surrounded by erythema lasting for 1-24 hours. It is always associated with itching. Individual lesions last from 1 to 24 hours. “Urticaria” is derived from the Latin word urticas, meaning “nettle.” Nettles belong to any plant from the genus Urtica. These plants are capable of secreting a stinging fluid that immediately affects the skin on contact.[1]

CIU is labeled as acute when symptoms are observed for less than six weeks and chronic when the period exceeds more than six weeks. It can be due to exposure to cold, solar light and heat contact. Special types includes contact allergy, It is known as idiopathic when no cause is found.[2]

It is a dermatological syndrome with raised erythmatous skin lesions accompanied by intense itching. This disorder which affects 20% of the general population has been linked with autoimmunity, but according to research of recent past there is a close relationship between helicobacter pylori infection and CIU. In developing countries CIU is endemic and is accompanied with, peptic ulcer disease, chronic gastritis, and gastric carcinoma [3]

Among the patients attending outpatient department of dermatology it is the most frequently seen skin disease, with an incidence of 1.2% to 23%[3]. Due to its evasive etiology it becomes a challenging job for the dermatologist to treat such cases. It leaves a strong impact on the quality of life of these patients leading to serious personal, occupational, social, and economic, disability comparable with any other chronic disease.[4]

In the past decade helicobacter pylori infection was considered to be one of the major etiological agents for chronic idiopathic urticaria (CIU) which induced an inflammatory process in the gastric mucosa. Sometimes there may not be involvement of gastric symptoms.[5] Several studies were performed to confirm this association.[6-12] A number of possible speculations have been put forth as a possible mechanisms of this skin disorder. One of the probable explanation might be that the CIU infection can evoke an immunological

response through mediator release leading to a non – specific increase of skin vessel sensitivity to agents increasing vascular permeability.[13] The gastric mucosa of H.pylori- infected patient shows an increased production of IL – 8, platelet – activating factor (PAF), leukotriene (LT) B4 and C4.[14], [15] and there is evident action of these mediators on the skin. It is also postulated that Urticaria patients might develop specific IgE antibodies to H.pylori [16]

Thus present study was conducted to find out the correlation of chronic Urticaria with H.pylori infection in our set of population.

PATIENTS AND METHODS

This study was conducted by the Department of Pharmacology and Therapeutics, BMSI, JPMC with the collaboration of Department of Dermatology JPMC Karachi from May 2008 to August 2008. 20 patients with CIU (09 males and 11 females) were included in the study after taking informed and written consent. Diagnosis of CIU was established when the occurrence of wheals lasts for more than 6 weeks and when no other disease or situation associated with Urticaria was detected. All patients were subjected to full history taking including food or drug intake allergy, (all the information was achieved by filling a questionnaire regarding their symptoms and allergies).[17]

Patients with known allergies and major medical illnesses were excluded from the study. Patients were investigated at baseline (Day 0) for the presence of H.pylori infection by serological detection of H.pylori antibodies. Test was performed by ELISA technique. This is a total antibody latex agglutination test for the detection of H. pylori antibodies. All patients with positive H. pylori antibodies (19 cases) received the triple therapy (Capsule Esomeprazole 40 mg o.d, Tablet metronidazole 400 mg t.d.s and Tablet Clarithromycin 500 mg b.i.d for a period of 2 weeks), they were again evaluated for H. pylori infection at day 60. Patients were evaluated for the relief of symptoms by a scoring system called symptom evaluation scale[18] which was carried out at day 0, 30, 60, 90 and 120.

Results were analyzed using statistical programme SPSS version 16.0. Qualitative data (frequencies and percentages) were presented as n (%). Numerical variables were expressed as mean ± standard deviation and student t-test, One way ANOVA test were applied to compare the means between the proportions. P value <0.05 were considered significant level.

RESULTS

20 patients diagnosed as CIU were enrolled in the present study; 9 males (45%) and 11 females (55%). The age of the patients ranged from 35 to 60 years with a mean ± Standard Deviation (SD) of 50 ± 10.1 years. The duration of urticaria extended from 6 months to more than 1 year with a mean ± SD of 25 ± 29.8 months (Table 1).

Patients were evaluated for effectiveness of drugs by improvement of symptoms after receiving triple therapy regimen. The patients were assessed at day 0, 30, 60, 90 and day 120 for the parameter of symptom evaluation scale.

Statistically significant improvement ($p< 0.002$) was obtained from day-0 to day-30, day-60, day 90 and day 120 in symptom evaluation scale. The mean SES scores decreased from 3.73 ± 0.45 on day 0 to 2.52 ± 0.51 on day 30, 1.52 ±0.51 on day 60, 1.15 ± 0.51 on days 90 and 0.47 ± 0.77 on day 120. A percentage change of 59.13% was observed with a p value of <0.002 (Table III, Figure I). Highly significant result was seen in the parameter of SES in the treatment period of day-0 to day-120 with a mean change of 0.47± 0.77 at day 120 from 3.73 ± 0.45 at day 0 of the study period. The percentage change of 87.39% was obtained which draws a significant p-value of 0.002. Shown in Table III.

One patient was lost to follow up and one patient developed relapse of urticaria. (Table I). Eradication therapy was successful in 18 patients one. There was significant percentage change of 90% in this group in this parameter, Shown in table IV.

TABLE I:
BASELINE CHARECTERISTICS OF PATIENTS

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

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

SES symptom evaluation scale
*P-value is statistically significant calculated by ANOVA test
** P-value is statistically moderately significant calculated by ANOVA test
NS=Non significant

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**

** Moderately Significant

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
H. pylori status	+ve	-ve	+ ve	- ve	90%
	19	01	01	18	

DISCUSSION

A gram-negative microaerophyllic, oxidase, catalase and urease-positive bacilli, H.pylori has four to six sheathed flagella at one of their poles which confer them motility[19]. Certain genetic and environmental factors have been linked in the progression of the disease. Although it resides and colonizes in the stomach but can manifest extra intestinal symptoms such as skin, present study was performed to confirm such association and it was observed that not only there is high prevalence of HP infection among our population, but eradication therapyshowed significant results in improvement of symptoms. Diagnosis was made by a serological test, although many other tests are available but for convenience purpose this test is commonly performed which is an enzyme linked immunosorbent assay detecting antibodies in serum. There are conflicting reports of association between HP infection and CIU from several westerns studies but in our study there is high prevalence of HP infection, with 95% of the patients with CIU and in infected patients there was resolution of urticarial symptoms when HP eradication therapy was given.[20, 21, 22]

H. pylori infection is one of the commonest infections of the mankind, prevalence varies in different countries. It occurs in about 20% of the Australian, 30-40% of the American and Canadian and 70% in European population. The highest prevalence was reported in Africa, Asia and South America where 70-90% of the population carry the infection[23] our study also shows similar prevalence. Although some researchers do not support this hypothesis but our study is consistent with the studies performed by many researchers [24], [25,26,27,28] according to them bacterium eradication results in improvement of Urticaria symptoms. Commonly recommended treatment options includes antihistamines as first line agents, but eradication was given to eradicate H.pylori infectio. Therapies initially included amoxicillin, omeperazole and metronidazole but did not prove to be effective but adding a macrolide resulted in better outcome, that is why Clarithromycin was given in our study with the newer proton pump inhibitor such as Esomeprazole and outcome was appreciable.[29]

CONCLUSION

While treating cases of CIU diagnostic tests to confirm H. pylori infection may be considered, as the findings suggest that anti-H Pylori treatment is significantly effective in the treatment of chronic idiopathic Urticaria.

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