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Research Article

**FREQUENCY OF HELICOBACTER PYLORI INFECTION IN PATIENTS OF CHRONIC SPONTANEOUS URTICARIA**Dr. Ammara Iftikhar<sup>1</sup>, Dr. Farrakh Iqbal Ghumman<sup>2</sup>, Dr. Shafiq Ur Rehman<sup>3</sup><sup>1</sup>Tehsil Headquarter Hospital Nowshera Virkan, Gujranwala<sup>2</sup>District Headquarter Teaching Hospital, Gujranwala<sup>3</sup>Shalamar Hospital, Lahore

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**Abstract:**

**Introduction:** Chronic urticaria (CU) is a common skin disease characterized by widespread, transient wheals occurring daily or almost daily for at least 6 weeks. **Objectives of the study:** The main objective of the study is to analyse the frequency of helicobacter pylori infection in patients of chronic spontaneous urticaria. **Material and methods:** This cross-sectional study was conducted in Lahore General Hospital during March 2019 to December 2019. The data was collected from 20 patients who visited the OPD of the hospital. Infection of *H. pylori* was diagnosed by a positive C<sup>13</sup>-UBT test and sorted as group A. Meanwhile, 10 patients with gastrointestinal symptoms but without urticaria were enrolled from the Gastroenterology Department for C<sup>13</sup>-UBT examination, and the infected patients were categorized into group B. *H. pylori* infection was defined as positive results by a positive C<sup>13</sup>-UBT test. **Results:** Demographic data of *H. pylori*-infected patients with or without chronic spontaneous urticaria (CSU) was collected. In group A follow-up of 11 successfully treated patients three months later revealed complete remission of urticaria in 54.5% (6/11), partial remission in 18.2% (2/11), and no improvement in 27.3% (3/11). In longitudinal follow-up studies for a duration of 12–29 months after *H. pylori* eradication (median = 23.5 months), complete remission was found in 63.6% (7/11) and no improvement in 36.4% (4/11) of the patients. **Conclusion:** It is concluded that *H. pylori* infection is significantly, though weakly, associated with the risk of chronic urticaria.

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**INTRODUCTION:**

Chronic urticaria (CU) is a common skin disease characterized by widespread, transient wheals occurring daily or almost daily for at least 6 weeks. CU may result from several causes; hidden or overt bacterial, viral, fungal, and protozoan agents have been reported as possible initiating factors, but the etiology for most cases remains unknown and therapy is largely directed at symptomatic care [1]. Autoantibodies directed against either IgE or  $\alpha$ -chain of the high-affinity IgE receptor (Fc $\epsilon$ RI $\alpha$ ) can be detected in 30–50% of subjects with urticaria, suggesting that autoimmune mechanisms are involved in the pathogenesis of CU [2].

Chronic spontaneous urticaria (CSU) is a common skin disorder and it's characterized by recurrent development of transient, itchy, erythematous weals (hives) daily or almost daily for at least 6 weeks duration. It affects almost 0.5% to 5% of the world's population in different studies [3]. The most commonly affected age group is between 20 to 40 years and women are slightly more commonly reported than men. There are various causes and factors associated with CSU like infections and infestations, drugs, autoimmune diseases, foods and food additives, dairy products, allergens, cosmetics, alcohol and genetic predisposition [4].

HP infection has been implicated as having a causative role in CU and although their association has not been definitely established, eradication of *H. pylori* treatment mostly leads to symptom resolution. This may be due to the different tests used for detection of HP infection or recurrences shortly after successful therapy [5]. The detection of *H. pylori* in stools highlighted the possibility of stool-based diagnostic assays. A direct antigen test can differentiate between an active, as well as, latent infection; whereas, serology only detects exposure. The HpSag is FDA-approved for diagnosis of active infection in symptomatic patients and monitoring effectiveness of antibiotic therapy during the 14 days of treatment. Several studies have recently

shown that the HpSA test is comparable to other non-invasive tests for initial diagnosis of *H. pylori* infection [6].

**Objectives of the study**

The main objective of the study is to analyse the frequency of helicobacter pylori infection in patients of chronic spontaneous urticaria.

**MATERIAL AND METHODS:**

This cross sectional study was conducted in Lahore General Hospital during March 2019 to December 2019. The data was collected from 20 patients who visited the OPD of the hospital. Infection of *H. pylori* was diagnosed by a positive C<sup>13</sup>-UBT test and sorted as group A. Meanwhile, 10 patients with gastrointestinal symptoms but without urticaria were enrolled from the Gastroenterology Department for C<sup>13</sup>-UBT examination, and the infected patients were categorized into group B. *H. pylori* infection was defined as positive results by a positive C<sup>13</sup>-UBT test. All the infected patients then received oral eradication therapy comprising esomeprazole (40 mg twice daily), clarithromycin (500 mg twice daily), and either amoxicillin or metronidazole (500 mg twice daily) for patients with penicillin allergy in the history.

Two-sided p-values of <0.05 were considered significant. All the statistics were performed using SPSS version 17.0.

**RESULTS:**

Demographic data of *H. pylori*-infected patients with or without chronic spontaneous urticaria (CSU) was collected. In group A follow-up of 11 successfully treated patients three months later revealed complete remission of urticaria in 54.5% (6/11), partial remission in 18.2% (2/11), and no improvement in 27.3% (3/11). In longitudinal follow-up studies for a duration of 12–29 months after *H. pylori* eradication (median = 23.5 months), complete remission was found in 63.6% (7/11) and no improvement in 36.4% (4/11) of the patients.

**Table 01: The expression of virulence factors for CSU patients in remission and nonremission status after successful *H. pylori* eradication treatment**

| Genotype         | Remission         | Non-remission     | P value |
|------------------|-------------------|-------------------|---------|
| CagA             | 5 (71.4)          | 6 (85.7)          | 1.0     |
| VacAs1/s2        | 5 (71.4)/2 (28.6) | 6 (85.7)/1 (14.3) | 1.0     |
| VacAm1/m2        | 3 (42.9)/4 (57.1) | 3 (42.9)/4 (57.1) | 1.0     |
| VacA s1m1        | 2 (28.6)          | 3 (42.9)          | 0.5     |
| CagA + VacA s1m1 | 2 (28.6)          | 3 (42.9)          | 0.5     |

**DISCUSSION:**

The role of *H. pylori* infection in CU has long been investigated with controversial results. Several authors demonstrated that *H. pylori* eradication was associated with a remission of urticaria symptoms, suggesting the possible involvement of *H. pylori* in the pathogenesis of this disorder [7]. Abdou et al. reported that the prevalence of *H. pylori* infection in chronic urticaria patients was not significantly different from that in normal control subjects, but the severity of urticarial symptoms was greater in the *H. pylori*-positive than in the *H. pylori*-negative group, and the severity of the symptoms depends on the density of bacterial infection and the intensity of the inflammatory infiltrate in the gastric biopsy, suggesting that *H. pylori* may have a role in the exacerbation of urticarial symptoms [8]. After anti-*H. pylori* therapy, 80% CU patients positive for *H. pylori* experienced complete remission of urticarial symptoms. However, Shakouri et al. utilized the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system to evaluate 10 trials on the effectiveness of *H. pylori* eradication on CU and found that the benefit of *HP* eradication in patients with CU is weak and conflicting. A study in Germany showed no evidence stating that eradication of *H. pylori* improves the outcome in patients with CU [9]. Another recent study even showed that CU can be triggered by eradication of *H. pylori*, but the pathogenetic mechanisms are far from being clear [10]. However, remission or improvement in urticarial symptoms after *HP* eradication does not necessarily indicate a causal relationship between *HP* and CU, since triple therapy might eradicate other misdiagnosed subclinical infections as well. Large, randomized, double-blinded, controlled trials are needed to establish the therapeutic utility of *H. pylori* eradication in patients with CU [11].

**CONCLUSION:**

It is concluded that *H. pylori* infection is significantly, though weakly, associated with the risk of chronic urticaria. *H. pylori* may play a role in the development and disease course of CSU. Different virulent genotypes of *H. pylori* may be irrelevant to the remission of CSU after eradication.

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