HELICOBACTER PYLORI INFECTION ASSOCIATED WITH CHRONIC URTICARIA

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Abstract

Helicobacter pylori (H. pylori) are a gram negative bacterium, which is responsible for most cases of gastritis and peptic ulcer. It is associated with several diseases that are not related to gastrointestinal tract also. Recently, the possible association between helicobacter pylori infection and chronic urticaria (CU) is discussed in some investigations.

Since the prevalence of infected persons with H. pylori and CU in Kosovo is high, the aim of this study was to evaluate correlation between the concentrations of anti-H. Pylori antibodies (IgG and IgA) and CU.

The study population included 105 persons (18 – 65 Years old). With CU were diagnosed 62 of them. The diagnose was made by dermatologist and based on clinical features of CU. Blood samples were collected and analyzed for levels of serum IgG and IgA antibodies against H. pylori using ELISA method. Data were analyzed using Vassar-Stats system student's t-test for their level of significance. Results were considered statistically significant at $P < 0.05$.

From 62 patients with chronic urticaria, 44 (71%) had elevated titer of H. Pylori IgG antibodies. H. Pylori IgG plus IgA antibodies were found elevated in 47.13 % of patients, while only IgA antibodies were elevated in 43.55 % of patients. Among group without chronic urticaria we found elevated values of H. Pylori antibodies IgG in 39.6 % of patients. H. Pylori IgG plus IgA antibodies were higher than normal value in 41.9 %, while anti-H. Pylori IgA were increased in 37.4%. The value P=0.002 showed significant association between Helicobacter Pylori antibodies (IgG) and chronic urticaria. Statistically significant association (p=0.0085) was found in patients with both (IgG and IgA) elevated values too. The increased titer of IgA antibodies against H. pylori didn't show statistically significance.

Based on our findings these results indicate a significant relationship of elevated concentrations of IgG and IgA antibodies against H. pylori with chronic hives, confirming the possible role of H. pylori in symptoms of chronic urticaria. Appearance of hives can be result of high level of Helicobacter Pylori IgG antibodies. An overall result of our study correlates with that by other researches.

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Introduction

Helicobacter pylori are a bacterium commonly found in the stomach. This bacterium is wide spread making it the most common bacterial infection in humans.[1] Attaching to cells of the stomach, H. pylori is the most common cause of gastritis and peptic ulcer, increasing the risk of stomach cancer over the time. But, gastrointestinal tract is not the only target system of H. Pylori.[2] Several studies suggest the implication of this bacterium in pathogenesis of a variety of disorders, probably through the immune response of the organism against this infection.[3] Chronic urticaria is one of the skin diseases in which beside other factors, H. pylori

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has a role in the pathogenesis.[2, 4] According to some studies, the immune allergic mechanisms involved in peptic ulcer disease are the same kind in chronic urticaria. There are two explanations for H. pylori influence on inducing of chronic urticaria symptoms:[5]

- The increased permeability of the stomach lining due to H. pylori infection, followed by increased exposure to allergens, and
- Subsequent release of histamine in the skin, after the immune response of the organism to the H. pylori infection.

Some investigations have shown a high prevalence of H. pylori infection in patients with chronic urticaria, followed by remission of the skin lesions after eradication therapy [6]. But, other studies resulted without any significant relationship between H. pylori infection and chronic urticaria.[7]

The prevalence of infected persons with Helicobacter pylori and chronic urticaria in Kosovo is high. Therefore, the aim of this study is to evaluate the correlation between concentrations of anti-H. Pylori antibodies (IgG and IgA) and chronic urticaria.

Material and Methods

Ethical Committee approval was obtained from University Clinical Centre of Kosova, Prishtina and all participants included gave written informed consent before entering the study.

This study included one hundred and five persons age from 18 to 60 years old. Sixty two of them were diagnosed with chronic urticaria. The diagnose was made by dermatologist and based on clinical features of CU.

Laboratory Analysis

Venous Blood samples were taken from all subjects for measurement of Helicobacter Pylori IgG and IgA. A total of 10 ml blood was obtained from each participating subjects by venipuncture using tubes without anticoagulant and immediately transferred for centrifugation. All samples were centrifuged for 10 minutes at 2000 rpm, separating the cells from the serum and transferred to 1.7-ml Eppendorf tubes and stored at −20°C, until required for analysis. Serum samples were assessed using a kit with a specific high sensitivity methodology—ELISA test, according to the manufacturer's instructions (Human GmbH, Germany).

Statistical Analysis

The statistics were made with the Vassar-Stats system. These results are shown in the tabular presentation. With t-test we have compared control and patient group. The correlation of H. Pylori IgG and IgA was calculated between control group and patients. Differences were considered significant when $p < 0.05$.

Results

From 62 patients with chronic urticaria, 44 (71%) had elevated titer of H. Pylori IgG antibodies. H. Pylori IgG plus IgA antibodies were found elevated in 47.13 % of patients, while only IgA antibodies were elevated in 43.55 % of patients. Among group without chronic urticaria were found elevated values of H. Pylori antibodies IgG in 39.6 % of patients. H. Pylori IgG plus IgA antibodies were higher than normal value in 41.9 %, while anti-H. Pylori IgA were increased in 37.4%. The value P=0.002 showed significant association between Helicobacter Pylori antibodies (IgG) and chronic urticaria. Statistically significant association (p=0.0085) was found in patients with both (IgG and IgA) elevated values too. The increased titer of IgA antibodies against H. pylori didn't show statistically significance (Tab. 1).

Groups (N = 105)	H. pylori IgG	H. pylori IgA	H. pylori IgG and H. pylori IgA
With chronic urticaria (N = 62)	71.0%	43.55%	47.13%
Without chronic urticaria (N = 43)	39.6%	27.4%	31.9%
Significance level P<0.05	P =0.002	P = 0.505	P = 0.0085

Table 1. Prevalence of H. pylori IgG, IgA and IgG and IgA together in two groups.

Discussion

Recently many researchers discussed the role of H. pylori in pathogenesis of several skin diseases. Chronic urticaria is a condition characterized by hives or wheals which persists longer than 6 weeks. The etiology of chronic urticaria may be physical, secondary to an

underlying medical condition or idiopathic. Based on the frequent coexistence of H. pylori infections with chronic urticaria, researchers proposed a possible relationship between these two conditions.[8] Results of their investigations are different.[9] Based on remission of CU symptoms after H. pylori eradication therapy it was suggested that H. pylori should be included in diagnostic workup of patients with CU.[10, 11] In another study [12] it was found a high prevalence of H. pylori infection in patients with chronic urticaria, but the eradication therapy didn't improve chronic urticaria symptoms. A lack of relationship between H. pylori infection and the course of idiopathic CU was documented in a study with twenty-five patients diagnosed with CU.[13] An interesting data resulted from a study which failed to prove H. pylori infection as etiologic factor of CU, suggesting a possible role of amount of H. pylori colonization in pathogenesis of urticaria.[14] According to Abdou, H. pylori infection may be not involved directly in the etiology of CU, but may have a role in the exacerbation of urticaria symptoms. The severity of these symptoms is dependent on the density of bacterial infection and the intensity of inflammatory infiltrate in the gastric biopsy.[9] Bakos et al., studied the titer of H. pylori specific (IgG and IgA) antibodies, and the prevalence of antibodies against H. pylori-associated lipoprotein 20 (lpp20) in patients with and without urticaria of unknown etiology.[15] They suggest that IgG and IgA antibodies to H. pylori-associated lpp20 may play role in the pathogenesis of chronic urticaria. In our study we found elevated concentrations of H. pylori specific (IgG) antibodies, IgG plus IgA antibodies together and IgA antibodies alone in patients with chronic urticaria. The increased levels of IgG and IgG plus IgA antibodies yielded statistically significant unlike IgA values. Similar results were obtained in a study by Rostamy.[16] He found that anti H. pylori IgG and anti H. pylori IgG and IgA together in the CU patients were statistically associated ($P<0.002$), concluding that there is a correlation between H. pylori infection and CU, suggesting that eradication therapy of H. pylori may have a role in treatment protocol of CU. Thus, measurement of H. pylori-specific antibodies should be included in the diagnostic management of chronic urticaria to identify patients who may profit from eradication treatment.[4]

Results from our study indicate a significant relationship of elevated concentrations of IgG and IgA antibodies against H. pylori with chronic urticaria. Therefore, H. pylori infection may play a role in the pathogenesis of chronic urticaria, suggesting that appearance of hives can be result of the increased level of Helicobacter Pylori IgG antibodies. An overall result from our study is in accordance with that by other researchers.

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Declaration of Interest

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