IS PEPTIC ULCER WITH HELICOBACTER INFECTION THE CAUSE OF CHRONIC URTICARIA?

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ABSTRACT

Helicobacter pylori, the most important cause of gastritis and peptic ulcer, has recently been associated with several extradigestive diseases. The aim of this study was to assess the prevalence of Helicobacter pylori infection and effects of bacterium eradication in 50 patients affected by idiopathic chronic urticaria. Helicobacter pylori was assessed by serology or biopsy and urease test or 13C urea breath test. Amoxicillin, bismuth subcitrate (Denol), metronidazole and cimetidine were given infected patients for 2 weeks. The results of therapy were assessed by urea breath test six weeks after therapy. In response to treatment urticaria clinically regressed in 16 out of 24 patients (66.6%). Thus bacterium eradication was associated with a remission of urticaria symptoms, suggesting a possible role in the pathogenesis of this disorder.

INTRODUCTION

There has been several publications regarding the association of chronic, idiopathic, and allergic disorders and infection with Helicobacter pylori during the past ten years.

Some investigators suggested that H. pylori infection displays a delayed hypersensitivity response in the stomach of animal models. The prevalence of H. pylori infection is about 80% in most developing countries and 30% in the U.S.A. Furthermore, the level of blood histamine in patients with peptic ulcer is higher than the control group. The rate of H. pylori infection was 75% in the first group and 65% in the control group. In children with bronchial asthma, most gastritis cases showed infection with H. pylori. Chronic urticaria is a skin disorder characterized by recurrent transient itchy wheals which occur daily or almost daily for at least 6 weeks. The clinical symptoms are caused by the release of histamine and other vasoactive mediators induced by the binding of an allergen to the specific receptor on mast cells. However, in most cases the trigger cannot be determined and the urticaria is considered idiopathic. The purpose of the present study was to assess the prevalence of H. pylori infection and the effect of eradication in infected patients affected by idiopathic chronic urticaria and to speculate on the possible pathogenic mechanisms involved in these cases.

MATERIALS AND METHODS

Over a period of one year (May 1998-May 1999) 50 patients (34 females and 16 males) affected with idiopathic chronic urticaria were selected for the study. The patients were selected from referrals to the Clinical Immunology Ward of Children’s Medical Center and patients from the private Farhoudi Clinic in Karaj.

All patients were thoroughly informed about the study. Patients had negative or mild reactive skin prick tests and low IgE serum levels. On enrollment each patient completed a standard questionnaire which included demographic data and clinical information with particular reference to symptoms of the upper GI tract, such as abdominal distention and epigastric pain. For patients without GI symptoms and normal endoscopy, Helicobacter pylori infection was diagnosed serologically by detection of IgG against H. pylori. Endoscopic examination was requested for patients with moderate to severe GI symptoms. Biopsy and microscopic examination of samples and urease test was used for detection of H. pylori infection in these pa-
patients. Infected patients were treated by bismuth subcitrate (Denol - 240 mg/bid or 120 mg/bid for children under 12 years old), metronidazole (500 mg/tid), amoxicillin (1g/bid) and cimetidine (400 mg/daily) or omeprazole (20 mg/bid) for 2 weeks. Control of eradication was assessed by $^{13}$C urea breath test six weeks after completion of treatment.

### RESULTS

Forty-two patients (84%) complained of GI symptoms. The major complaint was epigastric pain (60%) (Table I). The major findings in endoscopic examination were gastritis and gastroduodenitis (Table II). Twenty-five patients were infected with *H. pylori* (50%). The test results of 7 patients were not ready to be included in this article (Table III). Twenty-four patients were treated for *H. pylori* infection. In response to the treatment urticaria clinically regressed in 16 of 24 patients (66.6%). Clinical regression means the need for antihistamines was reduced or relapses of urticarial lesions either occurred later or disappeared completely. Five patients (21%) did not respond to the treatment. Three patients (12.5%) were lost for follow-up and one patient was not treated because she didn’t come regularly (Table IV). GI symptoms subsided after therapy in all patients.

The urea breath $^{13}$C test was performed for only ten patients, because of limitation of laboratory facilities. It confirmed eradication of infection in all of them.

### DISCUSSION

Although this study was performed on a limited number of patients with chronic urticaria, it provides evidence that at least some cases of idiopathic chronic urticaria may be associated with *H. pylori* infection and bacterium eradication may result in total or partial remission of clinical symptoms.
symptoms. Tebbe et al. reported 23 patients with chronic idiopathic urticaria in which 68% were infected with H. pylori, and 75% showed improvement after eradication of infection. Di Campli et al. reported 42 patients with chronic idiopathic urticaria in which 55% of them had H. pylori infection and 88% improvement after eradication of infection. Wustich et al. reported 30 patients with chronic urticaria and confirmed H. pylori infection. Twenty-six percent of their patients had clinical improvement after 14 days of treatment with amoxicillin and omeprazole. Schnyder et al. studied 46 patients with chronic idiopathic urticaria. Twelve patients (24%) were infected with H. pylori. Eradication of H. pylori was achieved in 3 patients but in only 1 was the eradication associated with the resolution of urticaria. In another study, one-hundred patients with chronic urticaria were studied. Forty-seven percent were infected with H. pylori. Disappearance (67%) or improvement of urticaria (29%) occurred in most antimicrobially-treated patients after 3-12 weeks. Liut et al. reported 107 patients with chronic idiopathic urticaria, of which 40 patients were infected with H. pylori and 30 of the infected patients had gastritis. We had 50% infection in our patients and 66.6% improvement. The pathogenic mechanisms that may explain the association between H. pylori infection and some cases of idiopathic chronic urticaria are still undetermined. However, the increasing evidence of a possible role of H. pylori in several extraintestinal diseases suggests that many factors related to the baterium and to the host could play a role in determining the clinical presentation of H. pylori infection. In fact several inflammatory mediators released during the immune response to H. pylori infection, such as IL-1, TNF-alpha, IFN-gamma, LT4 and PAF may play a part in the pathogenesis of urticarial lesions, at least in producing a nonspecific increase in sensitivity of cutaneous vascu late to vasopermeability enhancing agents. It is also known that several stimuli (such as pharmacological chemicals and bacterial toxins) can directly cause mast cell degranulation which evokes the clinical symptoms. However, some researchers believe that there is no association between H. pylori infection and chronic urticaria. Therefore, further interventional studies are necessary to confirm these results and test the validity of previous pathogenic hypotheses.

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REFERENCES