

Is *Helicobacter pylori* infection related to chronic idiopathic urticaria? An updated review

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Abstract

Background : There are many causes involved recently to explain the mechanism of chronic idiopathic urticarial or its resistant to treatment one of these is the presence of *Helicobacter pylori* which related to GIT infections in these patients ,multiple methods could be used to confirm the diagnosis; the most cheap and available one is the stool antigen test from stool analysis. The aim of this review article is to evaluate the effect of eradication therapy for *H.pylori* on chronic urticarial patients.

Conclusion: There is significant association of *H.pylori* infection with chronic urticaria. Eradication of *H. pylori* is a valid therapeutic option for patients with chronic idiopathic urticaria and positive stool antigen test.

Keywords: chronic idiopathic urticaria, *Helicobacter pylori*, stool antigen test.

Introduction

Urticaria is a dermatological disease affecting skin and causes wheals (orhives), associated with angiodema or not, and has a lifetime prevalence of about 9%(**Sánchez et al., 2017**).The appearance of pruritic, erythematous swellings that disappear with pressure, indicating the presence of vasodilation and superficial dermal edema, which is the main characteristic form of wheals (**Antia et al., 2018**).

Urticarial can be classified into four different types:

Acute spontaneous urticaria

Which lasts <6 weeks (**Zuberbier et al.,2014**).

Chronic spontaneous urticaria (CSU) which recurs twice weekly or more and lasts >6 weeks (**Zuberbier et al.,2014**).

Physical urticarial (chronic inducible urticaria)

This emerges due to etiological causes as dermographism, cold, heat, vibration, pressure, and solar factors. This type represent about 20-30% of urticarial (**Borlu et al., 2017**), and the last one is:

Episodic chronic urticaria

It lasts >6 weeks but recurs less than twice weekly as the type above. It should be kept in mind that both CSU and physical urticarial are commonly associated together.CSU is mostlv associated with dermatographism and

late pressure urticaria.(Kayiran et al., 2019;

Sánchez-Borges et al., 2012).

Clinical presentation of urticaria:

The standard characteristic lesion of urticarial is wheals; it is hives or swellings red to pink with various sizes and shapes and classically have central pallor with an erythematous flare. Patients explain that these lesions come and go rapidly; mostly patients explain presence of these wheals for 24 hours or less although new lesions may develop simultaneously at other sites (Bernstein et al., 2014)

Prognosis

The prognosis of acute urticaria is excellent. Because it is a self-limited disease, appears and resolves rapidly within 24 hours; and recurrence may occur within 6weeks .prognosis of chronic urticarial CU prognosis depend upon the disease that causing it and the response to treatment it recurs multiple times and after 6weeks or more.(Sánchez-Borges et al., 2015; Curto-Barredo et al.,2019).

Relationship between chronic urticaria and H.pylori

Recently a lot of studies explained the role of H.pylori organism in the pathogenesis of multiple skin diseases.CU is one of these diseases, however till now the association between urticaria and H.pylori still unknown with the presence of multiple studies. (Yoshimasuand Furukawa,2014).

One of these studies found that H.pylori organism in gastro-intestinal tract increases the permeability of stomach endothelium so increase exposure to allergens which cause allergy. Also, immune system produces

multiple antibodies in response to H.pylori antigens increase the release of histamine.(Buhner et al.,2004; Stefano et al., 2018).

The culprits in this process are the cells containing IgE in both gastric and duodenal mucosa, although the evidence of H.pylori specific IgE still limited. Presence of specific IgE to H.pyloriAg not confirmed until now. (Kim et al., 2019)Both IgG and IgA to 19-KDa H.pylori –associated lipoproteins may have a role in pathogenesis mechanism of chronic urticaria (Begolli et al., 2014)

Helicobacter pylori

H.pylori is a widespread organism that found its presentation in more than 50% if population complaining or not, its chronic infection causes multiple changes in gastric mucosa ranged from atrophy up to metaplasia associated with peptic ulcer.(Sugano et al., 2015).Most affected cases are asymptomatic with no clinical signs .Some cases complaining :nausea, vomiting , diarrhea and abdominal pain investigation is the mainstay of diagnosis they are multiple with invasive and non-invasive maneuvers

Histologic Findings

Hpylori is a gram-negative spiral flagellated micro aero-philicorganism.It produces urease enzyme. The colonization to stomach obtained mainly by flagella and the effect of urease enzyme. (Kamboj et al., 2017).

Imaging investigations

Are not helpful in diagnosis of infection, but used more in complicated cases as (peptic ulcer diseases, gastric cancer,

MALTOMA)(da Silva-Etto et al.,

2017;Conteduca et al.,2013).

Diagnosis of H.pylori

Stool antigen test: is Avery specific (98%) and sensitive (94%) obtaining its positivity from first days of infection and used in follow up of treatment.

Others like: Carbon-13ureabreath, H pylori serology and Antibiogramused also.

H.pylori eradication in chronic urticaria:

Multiple studies were performed in multiple countries to explain the relation between H.pylori and CU .They found the marked remission of urticarial symptoms after eradication of H.pylori One of these studies was in1994 on 21 urticarial patients with H.pylori infection ,remission was found in 95%of patients after treating disappearance of skin lesions in 8 of them.(Kolibasova et al .,1994; Bohmeyeret al.,1996).In the gastric mucosa, and after days of using amoxicillin and omeprazole , marked improvement was found.

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Management

Triple therapy regimens in management of H.pylori infection have been approved by US FDA and international organizations as the main therapy in cases with GIT symptoms or gastric and duodenal ulcer as

- Omeprazole amoxicillin and clarithromycin (OAC) for 10 days.
- Bismuth subsalicylate and tetracycline (BMT), metronidazole, for 14 days.
- Lansoprazole,amoxicillin clarithromycin, (LAC), for either 10 days or 14 days (Hsu et al., 2014).

Conclusion

There is association between H.pylori infection and chronic urticarial, recommending for testing in urticarial patients Eradication of H. pylori is a valid. Therapeutic option for patients with chronic idiopathic urticaria and positive stool antigen test.

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