



***Helicobacter pylori* and Uveitis: A Brief Narrative Literature Review**

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A B S T R A C T

Helicobacter pylori (*H. pylori*) is a gram-negative bacterium that typically infects the mucosa of the stomach. *H. pylori* is the most frequent causative infectious agent of chronic gastritis and peptic ulcer disease. It has also been associated with a number of extra-gastric diseases-neurological, ocular, hematologic, cardiovascular, rheumatologic, metabolic, and allergic. The possible role of *H. pylori* in the pathogenesis of uveitis is still unclear. High *H. pylori* seroprevalence has been found in some studies in patients with other ocular diseases like blepharitis, central serous chorioretinopathy, ocular adnexal lymphoma, and glaucoma. Its seroprevalence in uveitis has been investigated in very few studies. In all of them, however, it was increased. Antibodies have also been found in the anterior chamber of patients with anterior uveitis. Besides, seropositivity was also increased in studies with hypertensive uveitis. Eradication of the bacterium has anecdotally led to the subsidence of anterior uveitis in one patient. In any case, a causal relationship, either infectious or autoimmune, cannot be made at this time due to the scarcity of available research on the problem.

1. Introduction

Helicobacter pylori (*H. pylori*) is a gram-negative bacterium that typically infects the mucosa of the stomach.¹ *H. pylori* is the most frequent causative infectious agent of chronic gastritis and peptic ulcer disease, and it also partakes in gastric carcinogenesis, especially for the development of distal gastric adenocarcinoma and gastric mucosa-associated lymphoid tissue lymphoma.¹ *H. pylori* has also been associated with a number of extra-gastric diseases – neurological, ocular, hematologic, cardiovascular, rheumatologic, metabolic, and allergic.^{1,2} There are studies noting an increased risk of ischemic stroke, Alzheimer's disease, and Parkinson's disease in patients infected with *H. pylori*.¹ The bacterium has further been associated with coronary artery disease, and *H. pylori* DNA has even been found in

atherosclerotic plaques.³ Besides, *H. pylori* might have a role in the pathogenesis and the clinical course of Behçet's disease, a condition associated with uveitis.^{4,5} With the eradication of the bacterium, an improvement has been noted in the oral and genital ulcerations and the cutaneous manifestations of Behçet's.^{4,5}

The possible role of *H. pylori* in the pathogenesis of uveitis is still unclear. However, it has been demonstrated that gastric colonization with the bacterium leads to the chronic release of proinflammatory mediators from the cells of the mucosa and the stimulation and sensitization of various cell types of the immune system, thus potentiating the risks for extra-gastric inflammatory diseases.¹ Molecular mimicry might also play a role. High *H. pylori* seroprevalence has been found in some studies in patients with blepharitis, central serous

chorioretinopathy, ocular adnexal lymphoma, and glaucoma.^{1,2,6} Some authors actually report improvement in open-angle glaucoma control with the eradication of the bacterium.⁷

***H. pylori* in uveitis cases**

H. pylori seropositivity has been documented in patients with various kinds of uveitis.^{2,6} The bacterium has even been isolated from the anterior chamber fluid of such persons.² In terms of seropositivity, Perez-Cano et al. have determined a significantly higher frequency of anti-*helicobacter pylori* antibodies in 29 patients with non-granulomatous uveitis compared with controls.⁸ Kim et al. further observed an increased frequency of ocular hypertension in cases of idiopathic anterior uveitis, positive for *H. pylori* IgG.⁹

In addition, in a study on 40 cases with Possner-Schlossman syndrome from Korea, Choi et al. found a higher rate of *H. pylori* seropositivity compared to controls.¹⁰ Moreover, Otasevic et al. have isolated *H. pylori* antibodies from the anterior chamber of 3 out of 6 patients with idiopathic anterior uveitis, who also had elevated serum IgG.¹¹ Curiously, Bae et al. observed an inverse relationship between *H. pylori* seropositivity and HLA-B27 uveitis.¹² In their cohort of 106 patients with anterior uveitis, *H. pylori* seroprevalence was higher in the non-HLA-B27 cases.

On the contrary, Otasevic et al. have demonstrated increased seroprevalence in cases of acute anterior uveitis, HLA-B27-associated uveitis, and in spondyloarthropathy patients.¹³ Higher rates of *H. pylori* infection have been observed in various autoimmune diseases like Behçet's disease, psoriasis, inflammatory enteropathies, systemic lupus erythematosus, and rheumatoid arthritis, which may have uveitis in the spectrum of their manifestations.¹⁴ Regarding the role of *H. pylori* eradication in uveitis patients, there is a single case report on a 14-year-old child with recurrent bilateral iridocyclitis, which had subsided following therapy for the bacterial infection.

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2. Conclusion

Helicobacter pylori seroprevalence in uveitis has been investigated in very few studies. In all of them, however, it increased. Antibodies have also been found in the anterior chamber of patients with anterior uveitis. Besides, seropositivity was also increased in studies with hypertensive uveitis. Eradication of the bacterium has anecdotally led to the subsidence of anterior uveitis in one patient. In any case, a causal relationship, either infectious or autoimmune, cannot be made at this time due to the scarcity of available research on the problem.

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