

Prevalence of *H. Pylori* in Patients with Nasal Polyposis in Vali Asr Hospital, Southern Iran

Dear Editor,

Nasal polyp is a common chronic inflammatory disease of the sinonasal mucosa that is histologically characterized by infiltration of eosinophils and large quantities of extracellular edema. It causes considerable morbidity such as nasal obstruction, rhinorrhea and sleep disorders. Pathogenesis of nasal polyps is still debatable.^{1,2} *Helicobacter pylori* may play a role in the pathogenesis of nasal polyposis, chronic otitis media and chronic rhino-sinusitis.³ The aim of this study was to investigate any correlation between *H. pylori* infection and nasal polyposis using serological tests and the rapid urease test to determine the seroprevalence of IgG antibody and detect urease enzyme of *H. pylori* in these patients.

From September 2008 to December 2009, twenty six patients (18 males and 8 females) who referred to Vali-Asr Hospital in Fasa, Southern Iran with nasal polyposis were considered as case group and 20 patients (6 males and 14 females) who referred for nasal septoplasty were regarded as control group. The control group did not have any nasal polyposis, chronic otitis media, allergy, dyspepsia and peptic ulcer based on history and physical examination. The diagnosis of nasal polyp was made by clinical examination, computed tomography and was confirmed by pathological examination. Patients with the history of peptic ulcer and those who were on H2 blockers, proton pump inhibitor or antacids and also every patient with any chronic disease such as asthma and COPD were excluded. Five ml of the venous blood sample of each person was collected, and then serum was separated and stored in -20°C until the test time.

All samples were analyzed for detection of serum immunoglobulin G (IgG) against *H. pylori* with Enzyme Linked Immuno-Sorbent Assay (ELISA), (MONO-BIND kit, made in USA), in Hamzeh Lab, Fasa, Southern Iran. We used the rapid urease test on a small piece of fresh nasal polyp measured 0.2 in 0.2 cm in case

group and the same size piece of nasal mucosa in the control group. The results were shown in Table 1.

A significant relationship was noticed between nasal polyposis disease and *H. pylori* infection ($p=0.001$). The rapid urease test showed 19 and 17 positive results in case and control groups respectively that were not statistically significant. The etiology of nasal polyposis has not still been defined; recently the importance of the *H. pylori* has increased its rating as a considerable issue. Recently colonization of *H. pylori* in sinonasal mucosa has reported in some articles. *H. pylori* can induce hypoxia and acidic environment in sinonasal mucosa which facilitate more growth of this micro-organism. *H. pylori* may play an antigenic role which evoked infiltration of inflammatory cells and release of chemical and inflammatory mediators.^{4,6} As overall, there are three hypotheses for presence of *H. pylori* in sinonasal mucosa:

1. Sinonasal mucosa is the primary source for *H. pylori*.
2. Oro-nasal reflux transmits *H. pylori* to the nose and middle ear.
3. Gastro-esophageal acidic reflux transport *H. pylori* to sinonasal area.⁶

Ozcan C *et al.* showed any significant relationship between *H. pylori* and nasal polyps by Immuno histochemistry and Elisa method.⁷

Koc C *et al.* reported that *H. pylori* was detected in six nasal polyp specimens out of 30 patients using Immuno histochemistry test which was similar to Cengiz et al conclusion. They reported that, *H. pylori* was found with increased prevalence in nasal polyps. Dines *et al.* suggested that *H. pylori* has more a reservoir function than a pathogenic agent.⁸ Mornika S *et al.* found *H. pylori* in sinus mucosa of some patients with chronic sinusitis by urease test.⁹ Kaviani *et al.* reported 27 (66.2 %) versus 2(10 %) positive result by Elisa test for *H. pylori* antibody checking and rapid

Table 1: Positive and negative *H. pylori* IgG in patient with nasal polyposis and control group

Group	Positive (%)	Negative (%)	Total (%)
Case	15 (57.7)	11 (42.3)	26(100)
Control	2 (10)	18 (90)	20(100)
Total	17 (36.9)	29 (63.1)	46(100)

urease test in case & control group respectively, and they suggested significant relationship between *H. pylori* infection and nasal polyposis.¹⁰ The results of our study that is in agreement with Kaviani and coworkers report, with significant higher seroprevalance of *H. pylori* in case 15 (57.7 %) versus 2 (20 %) in control group, analyzed statistically by Chi-Square test. This study let us to conclude that, although we found higher seroprevalance of *H. pylori* is in patients with nasal polyp, anyway more advanced studies are needed to detect the potential role of *H. pylori* in development of nasal polyposis.

Keywords: Prevalence; *H. Pylori*; Nasal polyposis; Iran

Conflict of interest: None declared.

F Khajeh^{1*}, MH Motazedain², Z Safarpour³, MH Meshkibaf⁴, B Miladpoor⁴

¹*Department of Pathology, Fasa University of Medical Sciences, Fasa, Iran;* ²*Department of ENT, Fasa University of Medical Sciences, Fasa, Iran;* ³*Medical Student, Fasa University of Medical Sciences, Fasa, Iran;* ⁴*Department of Biochemistry, Medical School, Fasa University of Medical Sciences, Fasa, Iran*

***Correspondence:** Fatemeh Khajeh, MD, Assistant Professor of Department of Pathology, Fasa University of Medical Sciences, Fasa, Iran. Tel: +98-731-2220994, e-mail: Mojgankhaje@gmail.com
Received: September 10, 2010 Accepted: December 20, 2010

References

- 1 Ozcan C, Zeren H, Talas DU, Küçükoğlu M, Görür K. Antrochoanal polyp: a transmission electron and light microscopic study. *Eur Arch Otorhinolaryngol* 2005;**262**:55-60. [15004706] [doi:10.1007/s00405-003-0729-1]
- 2 Bateman ND, Fahy C, Woolford TJ. Nasal polyps: still more questions than answer. *J Laryngol Otol* 2003;**117**:1-9. [12590849] [doi:10.1258/002221503321046577]
- 3 Unidentified curved bacilli on gastric epithelium in active chronic gastritis. *Lancet* 1983;**1**:1273-5. [6134060]
- 4 Kim HY, Dhong HJ, Chung SK, Chung KW, Chung YJ, Jang KT. Intranasal *Helicobacter pylori* colonization does not correlate with the severity of chronic rhinosinusitis. *Otolaryngol Head Neck Surg* 2007;**136**:390-5. [17321865] [doi:10.1016/j.otohns.2006.10.015]
- 5 Nurgalieva ZZ, Graham DY, Dahlstrom KR, Wei Q, Sturgis EM. A pilot study of *Helicobacter pylori* infection and risk of laryngopharyngeal cancer. *Head Neck* 2005;**27**:22-7. [15459921] [doi:10.1002/hed.20108]
- 6 Dinis BP, Subtil J. *Helicobacter pylori* and laryngopharyngeal reflux in chronic rhinosinusitis. *Otolaryngol Head Neck Surg* 2006;**134**:67-72. [16399183] [doi:10.1016/j.otohns.2005.10.013]
- 7 Ozcan C, Polat A, Otağ F, Görür K. Does *Helicobacter pylorus* play a role in etiology of Nasal polyposis? *Auris Nasus Larynx* 2009;**36**:427-30. [19010623] [doi:10.1016/j.anl.2008.09.007]
- 8 Koc C, Arikani OK, Atasoy P, Aksoy A. Prevalence of *Helicobacter pylori* in patients with nasal polyps: a preliminary report. *Laryngoscope* 2004;**114**:1941-4. [15510018] [doi:10.1097/01.mlg.0000147924.96980.34]
- 9 Morinaka S, Ichimiya M, Nakamura H. Detection of *Helicobacter pylori* in nasal and maxillary sinus specimens from patients with chronic sinusitis. *Laryngoscope* 2003;**113**: 1557-63. [12972933] [doi:10.1097/00005537-200309000-00027]
- 10 Kaviani M, Khademi B, Moosavi SA, Azar pira N, Ashraf MJ. Detection of *Helicobacter pylori* in nasal polyp using rapid urease test and ELISA. *Iran Otolaryngology J* 2009;**20**:189-96.