Is There a Relationship Between The Presence of Helicobacter Pylori Infection In Children and History of Gastric Complaints in Their Parents?

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BACKGROUND

Helicobacter pylori (H.pylori) was declared to be a "first-degree carcinogen" by WHO in 1994. It is usually transmitted during infancy and does not cause any symptoms in some people. Although the transmission of H. pylori has not understood completely yet, the principal reservoir appears to be family members.

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The purpose of this retrospective study was investigated to the relationship between the presence of H.pylori infection in children and their parental history of gastric complaints.

MATERIALS AND METHODS

612 children with gastric complaints (epigastric pain or dyspepsia), who underwent diagnostic esophagogastroduodenoscopy, were tested for H. pylori infection between 01.01.2012 and 31.12.2017. The diagnosis of H. pylori infection was made if histological examination was positive. The presence of gastric complaints in their parents was investigated. If there was no recorded knowledge about the history of gastric complaints in patient's parents, the child was excluded from this retrospective study. A total of 196 children (56 male, 140 female, average age 14.9 ± 3.5 years, median age 15.0 years, range 4–18 years) were included to the study for retrospective analysis.

The relationship between the presence of Helicobacter pylori infection in children and history of gastric complaints in their parents was reviewed retrospectively.

The SPSS 21.0 was used to analyse the statistical data. A p value <0.05 was considered an indication of statistical significance.

RESULTS

184 patients (93.9%) in 196 children had H. pylori infection. 106 of 196 (54.1%) children had parental history of gastric complaints.

H.pylori infection rate was similar in the children with parental history of gastric complaints compared without parental history of gastric complaints (98 of 106, 92.5% vs 86 of 90, 95.6%). The rate of parental history of gastric complaints was also similar in H. pylori-infected children compared non-infected children (98 of 184, 53.3% vs 8 of 12, 66.7%).

CONCLUSION

When their familial histories of gastric complaints were detected, it is not necessary for H.pylori screening to be conducted in all children if also without any gastric symptoms.

Key Words: *Helicobacter Pylori, Parents, Dyspepsia.*

INTRODUCTION

It is known that H. pylori can lead to many gastroduodenal inflammatory (gastritis, peptic ulcer) and neoplastic diseases (gastric mucosa-associated lymphoid tissue [MALT] lymphoma, gastric cancer) (1 – 3). H. pylori was declared to be a "first-degree carcinogen" by WHO in 1994. It is usually transmitted during infancy and does not cause any symptoms in some people (4, 5).
Although the transmission of H. pylori has yet to be fully understood, the principal reservoir appears to be family members (6 – 10).
The purpose of this retrospective study was to investigate the relationship between the presence of H.pylori infection in children and their parental history of gastric complaints.

MATERIAL AND METHODS

Patients

612 children with gastric complaints (epigastric pain or dyspepsia), who underwent diagnostic esophagogastroduodenoscopy, were tested for H. pylori infection between 01.01.2012 and 31.12.2017. The presence of gastric complaints in their parents was investigated. Age, gender, detailed endoscopic and histopathological reports of the patients were recorded on and processed by a computer. If there was no recorded knowledge about the history of gastric complaints in patient's parents, the child was excluded from this retrospective study. A total of 196 children (56 male, 140 female, average age 14.9 ± 3.5 years, median age 15.0 years, range 4–18 years) were included to the study for retrospective analysis. Among the 196 children, 184 whose endoscopy revealed H. pylori infection (55 boys, 129 girls), constituted the group infected with H. pylori. A total of 12 patients without H. pylori infection (1 boy, 11 girls) were included in the group of patients not infected with H. pylori.
Endoscopy and biopsy
During endoscopy, two biopsies were taken from the antrum and corpus, and stained with HE and Giemsa to identify H. pylori and histopathological changes. The diagnosis of H. pylori infection was made if histological examination was positive. In the event that histopathologic examination yielded negative results, the diagnosis was considered as H. pylori-negative.
Statistical analysis
IBM SPSS Statistics 21.0 was used to analyse the statistical data. Quantitative variables between the two groups (H.pylori infection and parental history of gastric complaints) were compared using the Mann Whitney U; qualitative parameters of the same groups were compared using Pearson's chi-square test and Fischer's exact test. All tests of statistical significance were two-sided with a p-value <0.05.
The relationship between the presence of H.pylori infection in children and history of gastric complaints in their parents was reviewed retrospectively.

RESULTS

Of the 196 children in the study, 184 patients (93.9%) had H.pylori infection. There was no significant difference between the rate of H.pylori infection and patient gender (p=0.185).
106 of 196 (54.1%) children had parents with history of gastric complaints. The rate of the parents with gastric complaints was similar among children with or without H. pylori infection (98 of 184, 53.3% vs 8 of 12, 66.7%). The difference between the rate of occurrence of H. pylori infection among children with and without history of parental gastric complaints was also insignificant (98 of 106, 92.5% vs 86 of 90, 95.6%) (p = 0.367) (Table 1).

DISCUSSION

The prevalence of H. pylori infection varies from country to country. In developed countries, the prevalence ranges from 10% to 16.7% in children (11, 12). The prevalence ranges from 9% to 78.6% among schoolchildren in developing countries (13, 14), and in Turkey it ranges from 43.9% to 64.4% (15, 16).

In epidemiological studies, noninvasive diagnostic methods (enzyme-linked immunoassay, the urea breath test with 13C-urea, the H. pylori stool antigen test) are widely used for the diagnosis of H. pylori infection since they are an appropriate method for use (17 –21). In our study, H. pylori infection was diagnosed by histopathological examination of antrum and corpus biopsy material obtained during diagnostic endoscopy.

Most adult patients acquire H.pylori infection during childhood, through various transmission pathways such as feco-oral, oro-oral or gastro-oral transmission (22). Intimate contact between the infected parents and their children provides a very important transmission route (23, 24). The highest incidence of contraction usually occurs up until the age of 4 years in both developed and developing countries, with incidence rates ranging from 2.1 to 11.7% and 14 to 26% in these countries, respectively (25 – 27). Some authors have demonstrated an increased prevalence of colonized children among parents infected with H.pylori (28 – 32). In our study, we observed similar rates of H.pylori infection positivity among children whose parents had history of gastric complaints compared to children whose parents had no history of gastric complaints.

CONCLUSION

This study showed that the prevalence of Helicobacter pylori is not higher among children with history of gastric complaints in their parents.

It is not necessary for all children with parental history of gastric complaints to be screened for H.pylori regardless of gastric symptoms in the patients themselves.

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Table 1. Distribution of parental history of gastric complaints in children infected and not infected with H. pylori

Parental history of gastric complaints (epigastric pain or dyspepsia)	Infected (n=184)		Non-infected (n=12)		P
	Number	%	Number	%	
Yes	98	53.3	8	66.7	0.367
No	86	46.7	4	33.3	