

The Prevalence of Helicobacter Pylori in 711 Dyspeptics: The Correlation of H. Pylori and Endoscopic Findings

DISPEPSİ YAKINMALI 711 HASTADA HELİKOBAKTER PİLORİ PREVALANSI: HELİKOBAKTER PİLORİ VE ENDOSKOPIK BULGULARIN KORELASYONU

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Sinn in ary.

Helicobacter pylori have been linked with peptic ulcer disease, non-autoimmune gastritis, non-peptic ulcer dyspepsia, gastric carcinoma and MALT lymphoma. In this study the prevalence of *H. pylori* infection in Turkish patients with dyspeptic symptoms referred for upper gastro-intestinal endoscopy and its relationship to various pathologies were investigated. Detection was done by the CLO urease test. Seven hundred eleven (711) patients were enrolled in the study. Overall prevalence for *H. pylori* infection was 65.8% and it peaks over age of 45 years. Contrary to many of the literature there was no sex difference between *H. pylori* positive and negative patients. *H. pylori* was detected significantly higher in patients with peptic ulcer (81% than those with non-ulcer dyspepsia 15.6%). It is also noted that the gastritis due to factors other than *H. pylori* still accounts for an important portion of this clinical entity in our country.

Key Words: *H. pylori*, Prevalence, Turkey

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Helicobacter pylori (HP) is a gram negative spiral bacterium that has now been accepted strongly to be related with diseases of the stomach (1). It has been also under investigation in the etiopathogenesis of other gastrointestinal diseases like gastroesophageal reflux disease (2) and extra-gastroin-

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Özet

Helikobakter pilori'nin dispeptik ülsere ilişkisi ve bu organizmanın değişik endoskopik bulgularla

Tümü gözle alındığında Helikobakter pilori prevalansı %65.8 olarak bulunmuştur. Bu oran 45 yaş üzerinde zirve yapmaktadır. Çoğu literatüre ters olarak bizim çalışmamızda katılan erkek arasında fark saptamadık. Peptik ülsere hastaları (%81) ve non-ülser dispepsi (%15.6) hastaları karşılaştırıldığında mikroorganizma peptik ülsere grupta anlamlı şekilde daha yüksek bulunmuştur. Dikkate değer bir nokta da ülkemizde gastrite sebep olma etmenleri arasında Helikobakter pilori dışı nedenler hala önemli bir kısmı teşkil etmektedir.

Anahtar Kelimeler: Helikobakter pilori, Prevalans, Türkiye

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testinal disease like coronary artery disease (3). The prevalence of HP infection is 10-50% in the developed countries and it reaches to 70% in the developing countries (4). While the high affinity of HP for gastric epithelium is known, also it can be detected in metaplastic epithelium in the duodenal bulb and adhering to columnar-lined epithelium in the esophagus. The pathogen survives and causes tissue damage by secreting various enzymes and antigenic materials. The properties of pathogenic type, factors related to the host and the environment all work together in the etiopathogenesis of the

Table 1. The frequencies of each endoscopic diagnoses separately between H. pylori (+) and H. pylori (-) groups

H. pylori (+) Group		Diagnosis	H. pylori (-) Group		P
N	%		N	%	
233	50.1	Male	118	48	0.70
232	49.9	Female	128	52	
147	31	Normal	70	28	0.52
200	74.6	Antral gastritis	105	71.1	0.36
114	24.5	Pyloric dysfunction	71	28.8	0.24
29	6.2	Pangastritis	14	5.6	0.90
20	4	Gastric ulcer	5	?	0.13
132	32.6	Duodenal ulcer	32	15	0.0001*
19	4	Duodenitis- severe	3	1.2	0.03*
?	4.9	Duodenitis- mild	18	7.3	0.26
93	20	Hiatal hernia	46	18.6	0.75
21	4.5	Esophagitis	7	2.8	0.37
37	7.9	Gastroesophageal Reflux	16	6.5	0.58
465	65.4	Total	246	34.6	

consequent disease (5). Overall prevalence of H. pylori of any country should be known since the organism is suspicious in etiopathogenesis of many disorders. For this reason, in this study we aimed to assess the prevalence of H. pylori in dyspeptic patients in Turkey.

Material and Methods

The study involved the patients who attended with dyspepsia and underwent upper gastrointestinal tract endoscopy in Hacettepe University between 1995-97. During this period, some parameters of 711 of nearly 2000 endoscoped patients who were investigated by CLO-test (Delta West Limited Firm. USA) for the presence of H. pylori were recorded prospectively. These parameters were age, sex, endoscopy findings and CLO-results. The endoscopy procedures were performed by one investigator to eliminate the conflict of individual differences in visual evaluation. The biopsies one from antrum and the other from corpus were placed into test gel. The color change into red in 20 mm to 3 hours' time were regarded as a positive result, after incubating the biopsy material into the test gel at the room temperature. The CLO-test was chosen since it was previously proven to be efficacious in detecting H. pylori in population screening studies (6-8) The bacteria splits urea by its urease enzyme activity, ammonium and bicarbonate are produced and these cause a rise in the pH of the medium

which can be detected by color change. We divided the patients into two subgroups those with peptic ulcer (PU) disease and those with non ulcer dyspepsia (NUD). The patients who had duodenal and gastric ulcer and severe duodenitis were assigned as PU group. While those found normal endoscopically or having antral, fundal or pangastritis and excluding gastroesophageal reflux and esophagitis and also spastic colon by the absence of bowel symptomatology were in the NUD group. In the analysis of results, Chi-square test was used accordingly. P value less than 0.05 was accepted to be significant.

Results

There were 711 patients enrolled in the study. Of them 351 were male patients with a mean age of 46.4 ± 18.1 (range 17-69) and 360 female patients with a mean age of 43.5 ± 16.9 (range 18-71 years). All endoscopic findings of patients were shown separately in the Table 1 and analysed statistically by using chi-square test between the CLO positive and CLO negative groups. Regarding the whole patients, we detected H. pylori in 465 of 711 cases (65.4%). There was no sex difference between H. pylori positive and negative patients ($p=0.75$). There were no significant correlation between H. pylori positivity and the hiatal hernia, esophagitis, gastroesophageal reflux, pyloric dysfunction, antral gastritis, pangastritis and mild duodenitis. The inci-

Table 2. The comparison of *H. pylori* positivity among PU and NUD patients

	H. pylori (+)	H. pylori (-)	Percentage	P
PU	171	40	81%	0,00001
NUD	236	183	56%	

Table 3. The distribution of *H. pylori* prevalence with respect to age

Age range (Years)	Total number	Number of H. pylori positive patients	Percentage
17-30	150	75	50 %
30-45	265	154	58 %
>45	296	236	80 %
Total	711	465	65 %

dence of duodenal ulcer and severe duodenitis was significantly higher in *H. pylori* positive patients ($p=0.0001$ and $p=0.03$).

Table 2 shows the figure of *H. pylori* in PU and NUD patients. The *H. pylori* positivity was significantly higher in PU patients (81%) than NUD patients (56%) ($p=0.0001$). It is of note that more than half of the patients with NUD also have *H. pylori* infection. The Table 3 shows the incline in the prevalence of *H. pylori* with the advancing age.

Discussion

In this study, we examined prospectively the prevalence of *H. pylori* via CLO test in 711 dyspeptic Turkish patients. Furthermore we intended to evaluate the relationship between the presence of HP and various upper gastrointestinal endoscopic findings. Thinking that our unit is a reference center, we believe that the results here somewhat might reflect the HP prevalence of Turkey.

In therapeutic studies related to various treatment schedules, it is generally accepted that more than one type of methods should be utilized to confirm the *H. pylori* eradication. We regarded CLO test sufficient to determine the *H. pylori* infection since we just proposed to execute an epidemiologi-

cal study. This was not the first time for CLO test to be utilized for this purpose in the literature (7,9). Boixeda et al previously proved its efficacy in epidemiological studies with a large-sample size of 796 patients. They found that the urease test had a high specificity (100%) and sensitivity (90%). They assessed these figures by comparing the results of urease test with those of histopathological examinations. With the same approach utilizing only CLO test, one can encounter other epidemiological papers in the literature. Our observations about the correlation between endoscopic findings and *H. pylori* positivity are generally consistent with the literature. We did not observe a strong relation between *H. pylori* and reflux esophagitis as in the literature (2,10). We found that antral gastritis was encountered almost equally frequent in both *H. pylori* positive and negative patients. It is well known that antral gastritis and *H. pylori* infection have a strong relationship, however there are reports in the literature giving results in parallel to us saying that gastritis could be encountered frequently in HP negative patients as well (11). As an explanation to HP negative gastritis, we proposed that 1) there might be a previous antibacterial drug usage not mentioned by the patient, 2) an unknown environmental factors might have played a role in these cases. 3) chemically induced gastritis by bile reflux or NSAID's usage in an uncontrollable fashion especially in elderly might be the cause. The well-known relationship between duodenal ulcer, severe duodenitis and HP reported by many other authors also was confirmed in our study ($p=0.0001$ and 0.03 respectively) (12,13). The increasing rate of prevalence for *H. pylori* with advancing age were reported also by other authors (7). But the real shape of the curve for our country would be determined if a complementary epidemiological study was performed for the dyspeptic patients of pediatric age group with a large sample size. It is not easy to explain the absence of male preponderance in our study which was reported in other papers (13,14). Ozden et al, who conducted a study with one of largest sample size in our country, detected the *H. pylori* prevalence as 81% by serological assessments (15). Their little bit higher frequency may be explained by the theoretical possibility that serology might also reflect a recent cured infection other than active infection at that moment.

As a result we found that the prevalence of H. pylori infection in dyspeptic patients was 65.4% in Turkey. Gastritis due to reasons other than H. pylori were still almost equally important in our country. The exact role of H. pylori in NUD patients and the clinical response to the eradication therapies should be the subjects of future studies, as should be in other parts of the world.

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