

# *Helicobacter pylori* incidence in upper gastrointestinal endoscopy biopsies

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## ABSTRACT

**Introduction:** The incidence of *Helicobacter pylori* (*HP*) has been investigated in several studies. The bacteria can cause many diseases, such as atrophic gastritis, ulcers, dyspepsia, and gastric adenocarcinoma. Therefore, it is important to look for *HP* even in individuals who do not have any macroscopic findings on endoscopy and pursue eradication in positive cases. The aim of this study was to assess the clinical and pathological association of *HP* in gastric biopsies.

**Materials and Methods:** Patients who underwent an upper gastrointestinal endoscopy at the general surgery clinic between January 2014 and January 2015 were included in the study. Hospital registry system data of demographic details, admission complaints, and endoscopic findings were evaluated retrospectively. Patients who had a malignancy or who underwent an emergency endoscopy for gastrointestinal bleeding were excluded from the study.

**Results:** A total of 325 patients were included in the study. In the group, 185 (56.9%) were female and 140 (43.1%) were male. The mean age was 58 years (range: 18–89 years). The most common complaint was epigastric pain. Biopsies were taken from the gastric antrum in 295 of the patients. The mean number of biopsies was 1.5 (range: 1–5). Active gastritis was present in 245. In 111 of the patients, *HP* was moderately or strongly positive, in 91 cases it was mild, and in 43 of the patients, the result was negative. Of the 80 patients without any gastritis, 4 had mild positive staining results in the final pathology reports, while 2 had moderate or severe findings ( $p < 0.0001$ ).

**Conclusion:** Upper gastrointestinal endoscopy revealed a high probability of *HP* positivity in patients examined for gastritis. Routine biopsy may not be advisable in high-risk patients. Prospective studies are needed to further investigate these findings.

**Keywords:** Biopsy; *Helicobacter pylori*; gastrointestinal endoscopy.

## Introduction

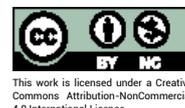
*Helicobacter pylori* is a Gram negative bacterium that colonizes the gastric mucosa.<sup>[1]</sup> Its prevalence varies widely with geographical area, age, race and socioeconomic status. Most *Helicobacter pylori* infections are asympto-

matic, but 15% of those infected with *Helicobacter pylori* eventually will develop dyspepsia or peptic ulcers. Dyspepsia is a common condition reported up to 40% of the population, and *Helicobacter pylori* eradication improves dyspeptic symptoms by 8–10%.<sup>[2–4]</sup> The incidence



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of *Helicobacter pylori* has been investigated in several studies and It may cause many diseases such as; atrophic gastritis, ulcers, dyspepsia, and even gastric adenocarcinoma. For this reason, *Helicobacter pylori* eradication in positive cases should be questioned even in people who do not have macroscopic findings in endoscopy. The aim of this study was to evaluate the clinical and pathological association of *Helicobacter pylori* in gastric biopsies.

## Materials and Methods

Patients who underwent upper gastrointestinal endoscopy at the general surgery clinic between January 2014 and January 2015 were included in the study. Patients with malignancy, bleeding and patients undergoing control gastroscopy after being operated for gastric malignancy were excluded. Patients who underwent upper gastrointestinal endoscopy but if no biopsy were taken; were excluded from the study. In the endoscopy unit, upper gastrointestinal endoscopy was evaluated from oropharynx to duodenum under local anesthesia after fasting for at least 8 hours. Biopsy was taken from the gastric antrum mucosa. Demographic data, admission complaints, endoscopic findings and histopathological examinations of the patients were evaluated retrospectively from the hospital registry system. Histopathological examination of the biopsy specimens taken from the antrum was evaluated in four groups as; negative, mild, moderate and severe positive according to *Helicobacter pylori* staining severity. The patients were evaluated as Group 1 between the ages of 18–49 and Group 2 as the patients above 50 years of age. Statistical Package for Social Sciences (SPSS) version 22.0 was used for statistical analysis. Data were defined as; mean, standard deviation, frequency and ratio. Chi square and Fisher exact tests were used for comparison of the two groups. The p value <0.05 was considered significant.

## Results

Total number of 325 patients were included in the study; 185 (56.9%) of the patients were female and 140 (43.1%) were male. There were 155 patients in Group 1 (18–49 years of age) and 170 patients in Group 2 (50 years and older age). In Group 1, there were 87 men and 68 female and in Group 2; there was 72 men and 98 female patients. There was a statistically significant difference between the groups in terms of gender (p=0.0147) (Table 1). The mean age was 58 (range 18–89). The most common complaint was epigastric pain. Biopsies were taken from the antrum in 295 patients. The mean number of biopsies was 1.5 (range 1–5). Active gas-

**Table 1. Gender distribution**

Gender	Group 1 (18-49 ages)		Group 2 (50 years and above)		p
	n	%	n	%	
Female	68	44	98	57	0.0147*
Male	87	56	72	43	

\*p value <0.05 statistically significant.

**Table 2. Severity of *H. Pylori* according to the groups**

<i>H. pylori</i>	Group 1 (18-49 ages)		Group 2 (>50 years)		p
	n	%	n	%	
Moderately stained	65	43	48	34	0.478
Mildly stained	42	27	53	37	
Negative	46	30	41	29	

tritis was detected in 245 patients. In 111 of these patients; *Helicobacter pylori* was moderately and severely positive, in 91 of them mildly severe and in 43 patients the *Helicobacter pylori* was negative. Of the 80 patients without gastritis, 4 patients had mild and 2 patients had moderate to severe positive staining for *Helicobacter pylori* (p<0.0001).

When evaluated according to the groups; In Group 1 *Helicobacter pylori* was found to be moderately stained in 65, was mildly stained in 42 patients and *Helicobacter pylori* was negative in 46 patients. In Group 2, it was 48, 53 and 41 patients respectively. There was no statistical significance between the groups (p=0.478).

Regardless of its severity, *Helicobacter pylori* was positive in 107 patients in Group 1 and was negative in 46 patients. In Group 2; *Helicobacter pylori* was positive in 101 patients and was negative in 41 patients (p=0.8984).

## Discussion

*Helicobacter pylori* gastritis is still a very common disease and all patients should receive eradication therapy. Questioning whether the patient is on antibiotics and the history of use of high doses of proton – pump inhibitors and also avoiding repeating the same antimicrobial regimen are the basic rules for optimizing *HP* eradication therapy.

Recent international guidelines have constituted consensus in defining treatment strategies for *H. pylori* infection.<sup>[5-7]</sup> Antibiotic resistance is still a problem in the treatment of *H. pylori* eradication. Clarithromycin and levofloxacin are the “key” antibiotics in the treatment of *H. pylori* infection but lately the prevalence of *H. pylori* strains that are resistant to these antibiotics is increasing.<sup>[8]</sup> In a study conducted by Craanen et al.,<sup>[9]</sup> *Helicobacter pylori* positivity was found to be 46.6% in patients younger than 50 years and 57.6% in patients 50 years and older. Also in another study conducted by Zhang C et al.<sup>[10]</sup> demonstrated that the; *H. pylori* infection, glandular atrophy and intestinal metaplasia in gastric ulcer were higher than in chronic gastritis patients. Chen LW et al.<sup>[11]</sup> in a study of 327 cases published in 2017 found out that successful *H. pylori* eradication is a more important factor in ulcer prevention and ulcer treatment. Regarding the *H. pylori* infection among patients with upper gastrointestinal symptoms; Shrestha R et al.<sup>[12]</sup> published a paper demonstrating that the peptic ulcers had higher rates of *H. pylori* colonization. Chronic active gastritis and chronic follicular gastritis were common in ulcerative diseases with significantly high *H. pylori* positivity. Mujawar P et al.<sup>[13]</sup> also demonstrated that the histopathological evaluation is the gold standard for diagnosing *H. pylori* and the prevalence was 46.5% in their study in 2015. Similarly Mandal AK et al.<sup>[14]</sup> in their research in Nepal published in 2019; *H. pylori* infection is strongly associated with chronic active gastritis which was seen in 85.2% of the cases similar to our findings. In our study, 107 (69%) patients under the age of 50 and 101 (71%) patients above the age of 50 were positive for *Helicobacter pylori*. But this *Helicobacter pylori* positivity was not statistically significant. Despite the widespread use of eradication in our country higher rates were attributed to the development of resistance.

## Conclusion

*Helicobacter pylori* positivity was found to be high in patients with gastritis in the upper gastrointestinal endoscopy. Therefore, routine biopsy for the *HP* diagnosis may not be always needed and thus performed in high-risk patients. However, it should be supported by prospective studies.

## Disclosures

**Ethics Committee Approval:** The study had a retrospective design so detailed informed consents from the patients were taken in the admission.

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** None declared.

**Authorship Contributions:** Concept – H.K.T.; Design – H.K.T., T.C.; Supervision – H.K.T., T.C.; Materials – T.C.; Data collection and/or processing – H.K.T.; Analysis and/or interpretation – T.C.; Literature search – H.K.T.; Writing – H.K.T.; Critical review – H.K.T., T.C.

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