The Prevalence of Helicobacter Pylori in Dyspeptic Patients and the Relationship with Endoscopic Diagnosis

Dispeptik Hastalarda Helicobacter Pylori Sıklığı ve Endoskopik Tanı İlişkisi

The Prevalence of Helicobacter Pylori in Dyspeptic Patients

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Özet

Amaç: Helikobakter pylori (Hp) enfeksiyonu kronik gastritin en sık nedenlerin¬den birisidir. Son çalışmalara göre Hp gastriti duodenal ülser, atrofik gastrit, dispepsi, gastrik kanser ve MALT lenfoma ile ilişkilidir. Hp enfeksiyonu bölge¬sel değişiklikler göstermektedir. Bu çalışmada bölgemizdeki Hp enfeksiyonunu tespit etmeyi ve endoskopi sonuçları ile Hp enfeksiyonu arasındaki ilişkiyi or¬taya koymayı amaçladık. Gereç ve Yöntem: Bu çalışmada 2013 ocak ile 2014 şubat tarihleri arasında 412 hastanın endoskopi sonuçları ve histopatoloji so¬nuçları retrospektif olarak incelendi. Toplam 246 hastaya endoskopik biopsi yapıldı ve histopatolojik Hp incelemesi yapıldı. Bulgular: Erkek ve kadın oranı 1.8:1 olarak bulundu. 77 erkek ve 139 kadın hasta vardı. Hastaların ortalama yaşı 46.50±15.05 ve 15 ile 82 arasındaydı. Hastaların yaşı ve cinsiyeti ile Hp arasında istatiksel olarak anlamlı bir ilişki bulunamadı (p<0.005). Hastaların %47.7'sinde Hp pozitif olarak bulundu ve Hp (+) hastalar ile kronik gast¬rit (+) hastalar arasında istatiksel olarak anlamlı bir ilişki bulundu (p<0.05). Tartışma: Hp enfeksiyonu yaygın bir gastrointestinal problemdir. Bu çalışma¬sının sonucunda Hp enfeksiyonu oranı %47.7 olarak diğer çalışmalardan daha düşük olarak bulunmuştur. Hp ile gastrit, duodenit ve özefajit arasındaki bağ-lantı bu çalışma ile onaylanmış oldu. Hp enfeksiyonuna birçok farklı test ile tanı koyulabilirse de histopatolojik olarak mikroorganizmanın gösterilmesi ve mide mukozasının patolojik değerlendirilmesinin Hp ile intestinal metaplazi, gastrik atrofi ve kronik gastrit ile birlikte değerlendirilmesi avantajı vardır.

Anahtar Kelimeler

H.Pylori; Dispepsi; Endoskopi

Abstract

Aim: One of the most common reasons of the chronic gastritis is Helicobacter pylori (Hp) infection. Recent studies reported that Hp gastritis is involved with the duodenal ulcer, atrophic gastritis, dyspepsia, gastric cancer and MALT lymphoma. The prevalence of Hp infection has regional differences. We aimed to determine the frequency of Hp infection in our region and introduce the relationship between results of endoscopy with Hp infection. Material and Method: In this study we analyzed retrospectively 412 patients' endoscopy results and histopathological results between 2013 January-2014 February.Total 246 patients who have underwent endoscopic biopsy and Hphistopathologically investigated. Results: Male and female ratio was 1.8:1. There were 77 male patients and 139 female patients. Mean age of patients was 46.50±15.05 and range of age was 15 to 82.There was not any statically meaningful association between Hp and patients ages and gender (p>0.05).47.7% of patients were diagnosed as Hp positive, There was a meaningful relationship between Hp (+) and chronic gastritis (+) groups (p<0.05). Discussion: Hp infection is a widespread gastrointestinal problem. As a result of this study the prevalence of the Hp infection is %47.7 that is a lower rate than the other studies reported. Involvement of the Hp and gastritis, duodenitis and esophagitis was confirmed with the present study. Although Hp could be diagnosed with many tests histopathological analysis of the microorganism and pathological evaluation of the gastric mucosal tissue has advantage of assessment Hp together with intestinal metaplasia, gastric atrophy and chronic gastritis.

Keywords

H.Pylori; Dyspeptia; Endoscopy

DOI: 10.4328/JCAM.3989 Received: 26.10.2015 Accepted: 27.10.2015 Printed: 01.07.2016 J Clin Anal Med 2016;7(4): 458-61
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Introduction

Gastritis is defined as inflammation of gastric mucosa. Whereas acute gastritis is diagnosed with the neutrophilic inflammation in histopathological; lymphocytes, plasmocytes and macrophages are seen in chronic gastritis [1]. One of the most common reasons of the chronic gastritis is Helicobacter pylori (H. Pylori)infection. Recent studies reported that H.Pylori gastritisis involved with the duodenalulcer, atrophicgastritis, dyspepsia,gastric cancer and MALT lymphoma[2-4]. H. pylori infection reduces a chronic active inflammation with neutrophils insub epithelial area [5]. Chronic inflammation is suspected to cause of diseases such as duodenal ulcer, gastritis and gastric malignancy. %60-70 of the population of world hasH.Pylori infection with the colonization in gastric mucosa. The prevalenceof H.Pylori infection has regional differences[6]. Indian population has a high prevalence of H. Pylori ranging 49% to 83% where as gastric cancer incidence is lower[7]. In our country, there are different studies also reported H.Pylori incidences from 63% to 71% [8; 9]. We aimed to determine the frequency of H.Pylori infection in our region and introduce the relationship between results of endoscopy with H.Pylori infection. Hereby with the treatment of the H.Pylori infection we can reduce the prevalence of gastrointestinal diseases such as duodenal ulcer, gastritis and atrophic gastritis even gastric malignancies.

Material and Method

In this study we analyzed retrospectively 412 patients' endoscopy results and histopathological results from the data of Sivrihisar State Hospital endoscopyunit between 2013 January-2014 February. Control endoscopies and gastric malignancies were excluded from the study. Total 246 patients who have underwent endoscopic biopsyand H.pylorihistopathologically investigated. Demographic characteristics, endoscopic diagnosis, histopathological resultconverted to digital data. Endoscopicexaminations performed with Olympus Actera CV-150 Processors and GIF-Q150 endoscope by twosurgeons. Biopsy was taken from antrum case of gastric or duodenal lesion existence and doubt of H.Pylori infection. Biopsy tissues fixed in 10% of formalin solution and stained by modified giemsa;histopathological examination for H. Pylori infection classified as negative, positive (+), positive (++) and positive (+++). Same classification used to determine severity of the gastritis, intestinal metaplasia, and atrophy. Statical analysis of the recorded data was examined by statistical software SPSS 15.0 for Windows (SPSS, Inc, Chicago, IL, USA). Histogram and Kolmogorov-Smirnov test used to determine the distributions of variables. Mann-Whitney U test used to determine age and sex difference.One way ANOVA test used to determine the difference between the groups. Indication of significant difference accepted as P<0.05.

Results

During the study period 412 patients underwent upper gastrointestinal endoscopy. 246 endoscopic biopsies performed and 30 patients excluded from the study according to exclusion criteria. Histopathological results of total 216 patients analyzed retrospectively. Demographic characteristics, endoscopic diagnoses and histopathological results of patients underwent statisticallyanalyze. Male and female ratio was 1.8:1. There were 77 male patients and 139 female patients. Mean age of patients was 46.50±15.05 and range of age was 15 to 82. Age and gender distribution of the H.pylori results are listed in Table 1.There was not any statically meaningful association

Table 1. Demographic characteristics of the patients according to the H.Pylori results.

Gender		Hp results			
		(-)	(+)	(++)	(+++)
Male	n	36	33	6	2
	Percent	(16.7%)	(15.3%)	(2.8%)	(0.9%)
	Age (Mean±SD)	46.42±15.97	42.85±12.42	51.67±17.24	53.00±2.83
Female	n	77	53	9	-
	Percent	35.6%	24.5%	4.2%	-
	Age (Mean±SD)	48.88±14.80	45.53±15.05	40.67±20.70	-

n: Number of the patients, SD: Standard Derivation Hp: Helicobacter pylori, (-) Helicobacter pylori negative patients, (+) mild Helicobacter pylori gastritis, (++) moderate Helicobacter pylori gastritis, (+++) severe Helicobacter pylori gastritis.

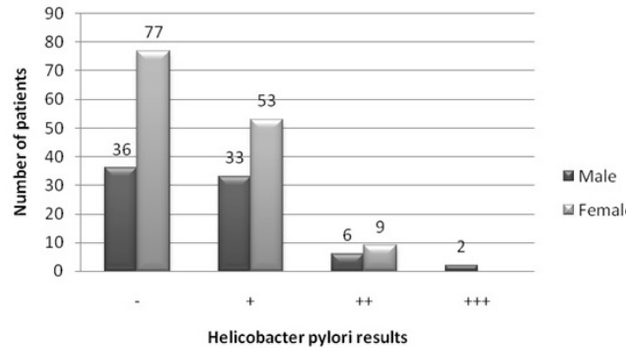


Figure 1. Helicobacter pylori results according to gender.

between H.Pyloriand patients ages and gender (p>0.05). The most common symptom was dyspepsia with the ratio of 48.1%. Only 0.9%of endoscopies that biopsy taken was evaluated as normal. The most common endoscopic diagnose was gastritis (94%). Other endoscopic diagnoses are listed in Table 2.47.7%

Table 2. Endoscopic diagnoses of the patients and the prevalence of H.pylori according to endoscopic diagnoses.

Endoscopic Diagnoses	n	Percent	Hp results			
			(-)	(+)	(++)	(+++)
Gastritis	203	94%	107	79	15	2
Hiatal hernia	48	22.2%	30	16	1	1
Esophagitis	80	37.0%	41	32	5	2
Duodenitis	88	40.7%	42	34	10	2
Duodenal Ulcer	12	5.6%	2	10	-	-
Gastric Ulcer	4	1.9%	1	2	-	-
Gastric polyp	3	1.4%	3	-	-	-
Bile reflux	18	8.3%	11	3	4	-
Barret esophagus	2	0.9%	1	1	-	-
Pylor Stenosis	1	0.5%	-	1	-	-
GERD	11	5.1%	4	4	1	2
Normal	2	0.9%	1	1	-	-

Hp: Helicobacter pylori, n: Number of the patients, (-) Helicobacter pylori negative patients, (+) mild Helicobacter pylori gastritis, (++) moderate Helicobacter pylori gastritis, (+++) severe Helicobacter pylori gastritis.

of patients were diagnosed as H.Pylori positive and 52.3% was negative. The severity of the H.Pylori was concentrated in H. Pylori (+) withthe 88 patients (%39.8). There was a female dominancy in this group of the patients such as the overall of the patients (Figure 1). Mean age of the patients was similar H. pylori positive groups. The most severe histopathologicalH. pylori diagnosed in patients who have diagnosed with gastritis, duodenitis, esophagitis and reflux after endoscopy. Most of the H.Pylori (-) patients diagnosed with gastritis. Chronic gastritis, intestinal metaplasia, atrophy and H.Pylori investigated during histopathological examination. There was a meaningful relationship between H.Pylori (+) and chronic gastritis (+) groups ($p<0.05$). Comparison of the histopathological results with the H.Pylori severity listed in Table 3. The most common histopathological diagnose was chronic gastritis with 191 patients and severity of gastritis was focused as mild (n=87). Intestinal metaplasia was diagnosed in 23 patient and most of them evaluated as mild metaplasia (n=19). The number of the patients who evaluated with intestinal atrophy was 31 and 20 of them were also evaluated with mild H.Pylori infection.

Table 3. Comparison of the H.Pylori results with the histopathological results.

Histopathological Results	Hp results			
Chronic Gastritis (n=191)[a]	(-)	(+)	(++)	(+++)
(-)	25	-	-	-
(+)	80	84	3	-
(++)	8	2	11	2
(+++)	-	-	1	-
Intestinal Metaplasia (n=23)[a]				
(-)	100	78	13	2
(+)	10	8	1	-
(++)	2	-	1	-
(+++)	1	-	-	-
Atrophy (n=31)[a]				
(-)	108	64	13	-
(+)	4	20	1	2
(++)	1	2	1	-
(+++)	-	-	-	-

[a] Total number of the H.Pylori positive patients, Hp: Helicobacter pylori, n: Number of the patients, (-) Helicobacter pylori negative patients, (+) mild Helicobacter pylori gastritis, (++) moderate Helicobacter pylori gastritis, (+++) severe Helicobacter pylori gastritis.

Discussion

H. pylori infection is a widespread gastrointestinal problem may be resulted with many clinical results within range of gastritis to Malt lymphoma. There are various studies have been made all over the world to investigate the relationship of H.pylori with the gastric disease[10]. It is well known that the epidemiology of the H.pylori varies by region, socioeconomic status, education level, life style habits. In rural areas incidence of the H.pylori infection expected to be higher. This is also related with the socioeconomic status of rural areas and source of the drinking water. Endoscopy is a practical diagnostic method to determine the reason of the gastric complaints that is also provides to have biopsies and make interventional procedures[11]. Attainability of the endoscopy is increasing gradually so that endoscopy reports are available from rural hospitals.

There are numerous methods to determine H.pylori infection. Histopathological analysis of the biopsy specimens is one of the most common used and reliable methods. H.pylori stool antigen test is a non-invasive and rapid test to determine the presence of the microorganism. Sensitivity of the stool antigen test was reported as %91.7 whereas specificity was %100[12]. Because of the advantage of being a non-invasive test and free from worry about gastric malignancy, stool antigen test may be used in childhood [13].

Rapid urease test is a diagnostic test used for diagnosis of the H.pylori that may be performed during endoscopy procedure and an additional biopsy from the gastric mucosa is enough to detect of H.pylori[14]. In recent studies it is reported that additional biopsies taken from gastric body and antrum may reduce false negative results[15].PCR method and H.pylori culture are the other diagnostic methods.

Histopathological evaluation of gastric biopsy is the most common method to determine the H.pylori infection[11].The main advantage of the histopathological analysis is facility of determination of atrophy, metaplasia and gastric malignancy. One of the patients diagnosed with Malt lymphoma in this study. Antrum is the most common region that endoscopic biopsy was taken during endoscopy procedure. H. Pylori infection may be histopathologically diagnosed even if there is no evidence in endoscopic appearance contrariwise negative H. Pylori may be diagnosed in even if severe gastritis. In this study 107 patient with endoscopic diagnosis of gastritis were H.pylori negative histopathological results. Also similar results observed in endoscopic diagnosis of duodenitis and esophagitis. H.pylori infection is associated with some of gastric disorders such as gastritis, gastric ulcer and duodenal ulcer. Also H.Pylori infection is lead to be a human carcinogen. In recent studies H. Pylori is still a major risk factor for the gastric cancer [16]. Previous studies reported that H.Pylori eradication could prevent the development of the gastric cancer in another area of the stomach after endoscopic submucosal resection of the early gastric cancer [17].In this study there was a statically significant relationship with gastritis and H.pylori infection. Because of the inadequate of the gastric cancer we could not report any result of relationship malignant diseases with H.pylori infection.

Intestinal metaplasia is suspected for precursor of gastric malignancy. Although there are studies reported the relationship of intestinal metaplasia and H.pylori infection, some of the authors reported no relations [18-21]. As a result of the analysis of the histopathological analysis; H.pylori infection and intestinal metaplasia

Similarly, there is not an accepted evidence of dominancy of any gender in literature there was not a gender dominancy of H.pylori infection. The prevalence of the H.pylori infection was found %47.7 in this study. There are many reports with the range of 63% to 82% in literature from our country[8; 9; 22-25]. As a result of this study the prevalence of the H.pylori infection is %47.7 that is a lower rate than the other studies reported. Involvement of the H.pylori and gastritis, duodenitis and esophagitis was confirmed with the present study. Eradication treatment is essential for the patients who H.pylori was diagnosed. Although H.pylori could be diagnosed with many tests histopathological analysis of the microorganism and pathologi-

cal evaluation of the gastric mucosal tissue has advantage of assessment together H.pylori with intestinal metaplasia, gastric atrophy and chronic gastritis.

Competing interests

The authors declare that they have no competing interests.

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How to cite this article:
Turk O, Polat H, Badak B. The Prevalence of Helicobacter Pylori in Dyspeptic Patients and the Relationship with Endoscopic Diagnosis. J Clin Anal Med 2016;7(4): 458-61.