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RELAPSE RATE OF HELICOBACTER PYLORI INFECTION AFTER THE SUCCESFUL ERADICATION IN SYMPTOMATIC PATIENTS

Original Artıcle

BAŞARILI ERADİKASYON SONRASINDA SEMPTOMATİK HASTALARDA HELİKOBAKTER PİLORİ RELAPS ORANI

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ABSTRACT

Background/Aims

Relapse of Helicobacter pylori (Hp) infection is a serious problem in high prevalent regions. We aimed to determine the relapse rate of Hp infection in patients with symptoms renewing after successful eradication.

Methods

Successfully treated patients with first line [proton pump inhibitors (PPI)+amoxicillin+clarithromycin] or second line (PPI+Bismuth compound+metronidazole+ tetracycline) eradication regimens were enrolled into this study between 2006-2010 years. All patients received eradication 14 days and successful eradication confirmed by C-14 breath test. Patients with symptoms renewing during the follow-up period were evaluated for relapse of Hp infection by gastroscopy, histological examination and C-14 breath test.

Results:

Hp positive 1642 patients were treated by first and second line eradication therapy. Successful eradication rate was 89%. During the follow-up period 238/1642 patients (14.5%) of these were admitted to out-patient clinics complaining with dyspepsia and Hp infection was detected by gastroscopy/histology and

breath test. Relapse rate was statistically high in third year (62%, 60%) after the treatment as comparing with first (10%, 8%) and second year (16%, 14%) ($p<0.05$) gastroscopy/histology and breath test control, respectively.

Conclusions:

Hp relapse rate was significantly higher in third year of eradication in patients with symptoms renewing.

Key words: *Helicobacter pylori;relapse.*

ÖZET

Giriş/Amaç

Helikobakter pilori (Hp) nüksü, prevalansın yüksek olduğu bölgelerde önemli bir problemdir. Bu çalışmanın amacı, başarılı eradikasyon tedavisi sonrasında semptomatik hastalarda Hp nüks oranını saptamaktır.

Yöntem ve Gereç

Çalışmaya, 2006-2010 yılları arasında 1. basamak [proton pompa inhibitörü (PPI)+amoksisilin+klaritromisin] veya 2. basamak (PPI+Bizmut bileşikleri+metronidazol+ tetrasiklin) eradikasyon rejimleri kullanan hastalar dahil edildi. Takip döneminde semptomatik olan hastalar, Hp infeksiyonu açısından gastroskopi, histopatolojik inceleme ve C-14 nefes testi ile değerlendirildiler.

Bulgular

Hp pozitif 1642 hasta 1. veya 2. basamak tedavi rejimi kullandı. Hastaların %89'unda başarılı eradikasyon sağlandı. Takip döneminde 238/1642 hasta (%14.5) hasta dispeptik yakınmalar ile polikliniğe başvurdu. Nüks oranı 3. yılda (%62, %60), tedavi sonrası 1. yıl (10%, 8%) ve 2. yıla (16%, 14%) göre sırasıyla gastroskopi/histoloji ve nefes testi ile kontrollerde anlamlı olarak yüksekti ($p<0.05$).

Sonuç

Hp eradikasyonundan sonra takipte semptomatik olan hastalarda 3. yılda nüks oranı anlamlı olarak yüksektir.

Key words: *Helikobakter pilori; relaps.*

Introduction

Helicobacter pylori (Hp) infection has a critical role in peptic ulcer diseases and has been linked to the pathogenesis of gastric lymphoma and gastric adenocarcinoma (1, 2). Hp prevalence is high in Turkey. Epidemiologic studies showed that Hp positivity rate was 70-80%, but has decreased over the years (3, 4). In another retrospective study including 9462 cases, Hp positivity rates regarding the years were 67.2%, 58.7%, 42.7%, respectively in 1991-1995, 1996-2000 and 2001-2006 years in Turkey (5). Meanwhile, Hp positivity rate was 66.9% and 50.3% in duodenal ulcer and gastric ulcer, respectively in all patients (5). Reinfection and relapse of Hp after successful eradication is accepted an important problem in the management of peptic ulcer disease. Although, time may help for the distinction of reinfection and relapse, it is difficult to distinguish between these clinical conditions in routine practice. These rates vary among different studies. Reported Hp relapse rates were range from 0.5% to 2.5% in Western countries (6, 7). There is a limited data about relapse/reinfection in our country. In one study, after the Hp eradication, relapse rates were reported 6.97%, 27.5%, and 11.11% at 3, 6, and 12 months, respectively. The cumulative relapse rate for 1 year was 41.46%. But, the number of cases (52 cases) was limited and only one year results were reported. As our knowledge, there is also no data about relapse rate in symptomatic patients.

In this study, we aimed to determine the relapse rate during the long term follow-up period in patients with symptoms renewing.

Material-Method

Between 2006- 2010 years, a total of 1642 patients, who were diagnosed Hp positive proven by histology were retrospectively evaluated. Successfully treated patients with first line [proton pump inhibitors (PPI) b.i.d.+amoxicillin 1000 mg b.i.d.+ clarithromycin 500 b.i.d.] or second line [PPI+Bismuth compound 120 mg q.i.d+metronidazole 500 mg q.i.d.+ tetracycline 500 mg q.i.d] eradication regimens were enrolled into this study. All patients received eradication 14 days and successful eradication confirmed by C-14 breath test 3 months later. Patients whose dyspeptic symptoms occurred during the follow-up period were evaluated for relapse of Hp infection by gastroscopy, histological examination and breath test. Antiobiotics, H_2-receptor antagonists, bismuth or proton pump inhibitor was discontinued 2 weeks before the gastroscopy. Two antral and 2 corpus biopsies were sent for histology (hematoxylin-eosin stain) unless otherwise stated according to ulcer site. The other patients questioned by phone contact about symptoms and they confirmed that they did not have any symptoms.

This study was conducted in accordance with the Declaration of Helsinki. The Ethical Committee of Faculty approved the protocol and written informed consent was obtained from all patients prior to taking part.

Statistical analysis was done by SPSS 13.0 for windows XP (Chicago, USA). Results were presented as means and SD. Nonparametric and Chi-square tests were used for comparing data.

Results

Hp positive 1642 patients were evaluated. Mean age of this group was 39±12 years (17-75 years), and 55% of these were female. Approximately half of them were high educated (university, %48.9). Duodenal ulcer rate was statically higher than gastric ulcer rate in Hp positive patients (20% vs 6%, $p<0.05$). All of these patients were treated by first or second line eradication therapy. Successful eradication rate was 89%.

During the follow-up period 238/1642 patients (14.5%) of these were admitted to out-patient clinics complaining with dyspepsia again. Hp infection was detected by gastroscopy and breath test. Relapse rate was statistically higher in third year as comparing to first and seond years (**Table 1**).

Hp (%)	1st year	2nd year	3rd year	P*
Gastroscopy/Histology	10	16	62	0.02
C-14	8	14	60	0.02

*1st year vs 3rd year, 2nd year vs 3rd year

Table 1: *Relapse rate of Hp infection after the eradication.*

There is no statistically different between first line and second line therapy according to relapse rate ($p>0.05$). Duodenal ulcer rate was 2% in controlled gastroscopy. Endoscopic findings were normal in the other patients.

Discussion

The prevalence of Hp is over 80% in many developing countries, and Asia (6, 9). Although prevalence of Hp is decreasing, it is still high in Turkey (5). This study shows that Hp relapse rate was high in the long term follow-up period.

Person to person, both by oral-oral or fecal-oral route is the most probable mode of transmission (9). It is unclear whether dental plaque is a significant source for reinfection of the gastric mucosa among patients with fair to poor oral hygiene. However dental plaque can serve as a

reservoir of Hp (10, 11). High relapse rate most probably related to high incidence of Hp in Turkey, and poor oral hygiene. Therefore, there is a high risk for relapse of Hp infection after eradication (12). In another study from Asia, Hp reinfection occurred in 58 patients (31.2%) during the long term follow up period (up to 9 years). The average annual reinfection rate was 9.1% per patient year (13). Reinfection and relapse is different between each other. It is important to analyses Hp protein profile for this distinction. Unfortunately, we did not isolate Hp. We evaluated first, second and third year period, and our relapse rate is really high as comparing with these data. In that study, no recurrence of peptic ulcer was detected at the follow up endoscopy. However, peptic ulcer recurrence rate was 2% in Hp positive whom controlled by gastroscopy in our study. We re-evaluated only symptomatic patients after eradication. Because of this, we did not analyze symptom correlation with Hp recurrence.

On the other hand, clinical impact of relapse is unknown. Most of the study reported different results. Many studies have shown that peptic ulcer recurrence is usually caused by Hp reinfection (14-16). In our study, ulcer recurrence rate only 2%. Recurrence without ulcer can be explaining with nonulcerogenic strains (17). We may also explain this low recurrence of peptic ulcer with the high rate of PPI using in recent years.

Meanwhile, first line or second line therapy success was not different in our study. Luther et al. was also reported that quadruple (78.3%) and triple (77%) therapies yielded similar eradication rates as primary therapy for Hp infection (18). A national meta-analysis performed on 94 studies comprising standard triple therapy combinations revealed that from 1996 to 2005, the eradication rates have been reported as 79.4%, 83.7%, 81.8%, 81.8%, 75.1%, 61.3%, 65.6%, 65.1%, 55.3% and 61.1% respectively, and after 2000 a significant decrease in the eradication rates has been noted (19). However, we know that eradication success is also directly related to patient compliance. Half of our patients were high educated. Therefore, our eradication rate is high as comparing with the other studies from Turkey.

As a conclusion, recurrence rate of Hp infection is high in Turkey. However, this high relapse rate of infection is not related to peptic ulcer recurrence.

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