

Original Article

TWO YEARS FOLLOW UP AFTER ERADICATION THERAPY OF PEPTIC ULCER

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ABSTRACT

Objective: This study was performed to detect the recurrence rate for two years after eradication therapy of peptic ulcer.

Methods: Sixty-nine patients included in this study in Kirkuk city from January 2004 to January 2005 as 1st year follow up, and 49 patients from January 2005 to January 2006 as second year follow up study. A urea breath test and re-endoscopic examination were carried out to confirm peptic ulcer recurrence. A questionnaire was prepared to take the history of the disease and other relevant data of each patient.

Results: The recurrence was occurred in 6 (8.7%) and 8 patients (16.33%) in the 1st and 2nd years after eradication therapy. Highly risk of recurrence was smoking, age below 50 y and stress in 1st year follow up, and stress was the highly risk in the 2nd year follow up.

Conclusion: After triple and quadruple therapy of peptic ulcer, the recurrence is low, However, the possibility of *H. pylori* resistance should be considered.

Keywords: Peptic ulcer, Eradication therapy, *H. pylori*, Urea breath test

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INTRODUCTION

The term (peptic ulcer) refers to an ulcer in the lower esophagus, stomach or duodenum, in the jejunum after surgical anastomosis to the stomach, or rarely in the ileum adjacent to a Meckel's diverticulum. A peptic ulcer can be also defined as a form of ulceration which develops in the epithelial lining surface expose to acid secretion of gastric glands [1].

Helicobacter pylori (*H. pylori*) has been described as an opportunistic pathogen attracted by changes in the gastric mucosa caused by inflammation and ulcer [2, 3]. The rediscovery of *H. pylori* has provoked a fundamental reevaluation of ideas on the etiology and management of peptic ulcer. Perhaps the strongest evidence linking *H. pylori* and peptic ulcer is the fact that eradication of infection effectively cures the disease and prevents ulcer relapse [4, 5]. However, although the role of this organism on uncomplicated peptic ulcer has been definitively established [6, 7], the precise relationship between *H. Pylori* and complicated ulcer disease has hardly been studied [8]. *H. Pylori* eradication has been demonstrated to dramatically reduce the rate of ulcer recurrence [9]. In 1996, the NIH Consensus Conference stating that several trials indicated that *H. pylori* eradication also reduces the recurrence of ulcer complications, but the magnitude of this reduction remained to be firmly established [10].

Diagnosis of *H. pylori* was performed by endoscopy, biopsies from the antrum for rapid urease test and/or histological study (hematoxylin and eosin stain) [15], patients with positive rapid urease test or histology were considered definitively infected, and were treated with *H. Pylori* eradication regimen. However, when biopsies were not feasible, ¹³C-urea breath test was performed. Patients were considered infected if rapid urease test, histology or when ¹³C-urea breath tests were positive [11].

MATERIALS AND METHODS

A previous clinical study (from July 2003 to January 2004) was carried out in the General hospital-Kirkuk city, on eighty-nine patients to determine the efficacy of triple and quadruple therapy [Omeprazole 20 mg BID+Amoxicillin 500 mg QID+Metronidazole 500 mg TID, Ranitidine 150 mg BID+Amoxicillin 500 mg QID+

Metronidazole 500 mg TID, Omeprazole 20 mg BID+Amoxicillin 500 mg QID+Clarithromycin 500 mg BID and Omeprazole 20 mg BID+Amoxicillin 500 mg QID+Metronidazole 500 mg TID+Clarithromycin 500 mg BID], in the treatment of peptic ulcer disease[1]. After documentation of ulcer healing by the endoscopic and urease test, a follow-up study was performed for 2 y. The first year follow up (from January 2004 to January 2005) was carried out on 69 patients. In the 2nd year follow up, only 49 patients were continued. The study was carried out from January 2005-to January 2006, urea breath test and re-endoscopic examination was performed to identified the recurrence. A questionnaire was prepared to take the history of the disease and other relevant data of each patient. All patients with recurrence were re-treated by triple eradication therapy. Chi-square test was used to determine the significantly between groups.

The study was conducted after obtaining the approval of the ethical committees at the Faculty of Medicine, Tikrit University and Kirkuk Health Directorate.

RESULTS

This study is a follow up trial, it carried out on 69 patients as 1st year post-eradication [aged 25-70 y (mean = 45.75 y), 44 males (63.8%) and 25 females (36.2%), 10 (14.5%) with gastric ulcer, and 59 (85.5%) with duodenal ulcer, 21 smokers (30. 5%) and 15 (21.7%) under stress, 49(71%) under age of 50 y and 9 (13%) were NSAIDs user to control pain]. 2nd year post-eradication follow up was carried out on 49 patients [aged 31.3-69 y, 31 males (63.26%) and 18 females (36.74%), 8 (16.3%) with gastric ulcer and 41 (83.7%) with duodenal ulcer, smokers 21(42.85%) and non smoker 28(57.15%), 18(36.7%) under stress, patients aged below 50 y were 28(54.14%), and 4(8.16%) of the patients used NSAIDs].

Patient's profiles were mentioned in table 1. Recurrence was occurred in 5 smoker patients (83.33%) and in 3 non-smoker patients (37.5%) in the 1st year follow up study, and in 1 smoker patient (16.67%) and 5 non-smoker patients (62.5%) in the 2nd year follow up study (table 2).

Recurrence also occurred in 3 patients (50%) of NSAIDs users and 1 patient (12.5%) of those didn't use NSAIDs in the 1st year

follow up study, and in 3 patients (50%) of NSAIDs users and 17 patients (87.5%) of those didn't use NSAIDs in the 2nd follow up the year (table 3).

In the 1st year follow up trial, recurrence was occurred in 3 (50%) patients with gastric and duodenal ulcers, and in the 2nd year follow up, it occurred in 2 patients (25%) with gastric ulcer and 6 patients (75%) with duodenal ulcer (table 4).

Occurrence of recurrence was significantly higher in patients under stress (66.67 vs 33.33%) in the 1st year follow up and (62.5 vs 37.5 %) in the 2nd year follow up trial (table 5).

Although the occurrence of recurrence was significantly higher in patients below the age of 50 y (66.6 vs. 33.33%), but in the 2nd year follow up trial, it was significantly higher in patients above 50 y (87.5%) compared with patients below the age of 50 y (12.5%) (table 6).

Table 1: Patients profiles

Risk factors	Number	
	1 st year	2 nd year
Below 50 y old	4	1
Smoker	5	3
Gastric ulcer	3	2
Under stress	4	5
NSAIDs user	3	1

Table 2: Recurrence according to smoking

Smoking	Positive recurrence		No recurrence		Chi-square
	1 st year	2 nd year	1 st year	2 nd year	
Smoker	5 =83.33%	3=37.5%	16 =25.39%	18=43.9%	10.07*
Non smoker	1 =16.67%	5=62.5%	47 =74.61%	23=56.1%	
	6	8	63	41	

*Significant

Table 3: Recurrence according to using of NSAIDs

NSAIDs	Positive recurrence		No recurrence		Chi-square
	1 st year	2 nd year	1 st year	2 nd year	
User	3=50%	1=12.5%	6 =9.5%	3 = 7.3%	10.035*
Not user	3=50%	7=87.5%	57=90.5%	38=92.7%	
	6	8	63	41	

*Significant

Table 4: Recurrence according to the ulcer site

Site of ulcer	Positive recurrence		No recurrence		Chi-square
	1 st year	2 nd year	1 st year	2 nd year	
Gastric ulcer	3=50%	2=25%	7 =11.11%	6 =14.6%	7.0398*
Duodenal ulcer	3=50%	6=75%	56=88.89	35=85.4%	
	6	8	63	41	

*Significant

Table 5: Recurrence according to stress

Stress	Positive recurrence		No recurrence		Chi-square
	1 st year	2 nd year	1 st year	2 nd year	
Under stress	4=66.67%	5=62.5%	11=17.47	13 =31.7%	12.93*
Not stress	2=33.33%	3=37.5%	52=82.53	28=68.3%	
	6	8	63	41	

*Significant

Table 6: Recurrence according to age

Age	Positive recurrence		No recurrence		Chi-square
	1 st year	2 nd year	1 st year	2 nd year	
Under 50 y	4=66.67%	1=12.5%	45 =71.4%	27=65.85%	10.89*
Above 50 y	2=33.33%	7=87.5%	18 =28.6%	14=34.15%	
	6	8	63	41	

*Significant

DISCUSSION

Recurrence rate of peptic ulcer in our study is 6 (8.7%) patients and 8(16.33%) patients in 1st and 2nd post-eradication therapy, these results were in agreement with Sekine *et al.*, Metzgen *et al.*, Enderset *et al.*, Cheon *et al.*, Hildbrand *et al.*, Rollar *et al.*, Kin *et al.*, Lai and Lan, Chey *et al.*, Ryu *et al.*, and Yakoob *et al.* [12-22], who recorded 4.4-20% recurrence rate per a year.

Duodenal ulcer recurrence, even in those with perforating duodenal ulcer, was less than gastric ulcer after the eradication therapy, which was in agreement with that recorded by Crofts *et al.* [23].

Recurrence was significantly more frequent in smokers (5 patients, 23.8%) compared to nonsmokers (1 patient, 2.08%). According to many previous studies, smoking decreased the efficacy of peptic ulcer disease therapy. However, the peptic ulcer was twice as common as, among smokers as non-smokers, and death from these diseases was twice as frequent as than in smokers compared to non-smokers. Smoking delay healing of ulcer and increase relapse rate. Furthermore, cigarettes depressed the immunity and contributed to increase the liability to infection [24-30].

Our study revealed that recurrence was occurred in 33.3% of patients used NSAIDs and in 5% in patients not using NSAIDs. In spite of there was no significant difference between them in the occurrence of ulcer, significant differences were recorded in recurrence of ulcer between them, these results were in agreement with that recorded by many authors [13, 31-34], who found that using of NSAIDs affected the overall result of the treatment of peptic ulcer diseases.

Recurrence was occurred in 30 % of patients with gastric ulcer, and in 5.08% of patients with duodenal ulcer. A high recurrence rate among patients with gastric ulcer than duodenal ulcer was recorded by Al-Snafi and Rijab [1], however, Chan *et al.*, [32] found that there was no significant differences between the healing rate and recurrence between gastric and duodenal ulcers when used the same treatments. According to some studies, it seemed that low-efficacy therapy did not actually cure *H. pylori* infection in the gastric mucosa, and only temporarily suppressed it and did not completely eradicate it from the host [23, 24].

Recurrence among patients under stress in our study was 26.66 % which was significantly higher than patients didn't complain about stress (3.7%). The same fact was recorded by US department of health and human services in the patient not under stress that is significant differences, a high recurrence rate obtain in those under continuous stress than with normal lifestyle, this in agreement with the data of US department of health and human services, according to the collected data, the stress was one of the etiology of peptic ulcer diseases, and it usually caused a relapse of the treatment [35].

No significant differences were recorded in the recurrence of peptic ulcer diseases between patients above 50 y old (10%) and patients below 50 y old (8.16%), this in agreement with the data of US department of health and human services, which mentioned that stress and income were positively correlated with the recurrence of peptic ulcer disease with minimal correlation to age of the patient [35].

CONCLUSION

1-Multi-causes of peptic ulcer should be considered (affect the end result of treatment).

2-Possibility of *H. pylori* resistance need to be study.

3-Using of NSAIDs, stress, smoking and ulcer site are a real risk for the end result of eradication therapy of peptic ulcers.

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Nil

AUTHORS CONTRIBUTIONS

All the authors have contributed equally.

CONFLICT OF INTERESTS

Declared none

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