

Research Article

The Role of Helicobacter Pylori on the Complications of Peptic Ulcer

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Keywords

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Abstract

Background and objectives: Helicobacter pylori(HP) infection represents one of the most common and medically prominent infections worldwide. Helicobacter pylori are found in 80-90% patients with peptic ulcer. However, there is paucity of reports on prevalence of H. pylori infection in patients with peptic ulcer perforation, bleeding or pyloric stenosis. The aim of this study was to assess the prevalence of H. pylori infection in patients undergoing laparotomy for repair of complications of peptic ulcer.

Patients and methods: The study was conducted retrospectively at Van state hospital between 15.10.1999-25.12.2000, and Trakya University, Medical Faculty in the department of General Surgery in Turkey between 15.11.1997-14.10.1999. Data were collected on patient's age, sex, and the prevalence of H. pylori infection in patients undergoing laparotomy for repair of complications of peptic ulcer.

Results: There were 2 women and 24 men in this review with a mean age of 26,54 (range 18 to 48) years. Statistically significant relationship was found between HP positivity and complications of peptic ulcer. HP positivity was found in 22(85%) of patients with complications of peptic ulcer in this series. Cigarette smoking was found in all patients in this study.

Conclusions: Based on our findings, significant evidence suggests the potential role of HP infection and cigarette smoking in patients with complications of peptic ulcer. Also, the current data provide sufficient evidence to define the relationship between patients with complications of peptic ulcer and HP infection.

INTRODUCTION

The paradigm for peptic ulcer pathogenesis is an imbalance in the aggressive activity of acid and pepsin and the defensive mechanisms that resist mucosal digestion. Many different derangements have been identified, and it remains unclear which abnormalities are most important [1,2]. It has become clear in the past decade that three different etiologies underlie virtually all ulcers: infection with H. Pylori, use of nonsteroidal anti-inflammatory drugs (NSAIDs), and massive acid hyper secretion secondary to gastrinoma [1].

The complications of peptic ulcer include perforation, penetration into adjacent organs with or without fistula formation, bleeding, and obstruction. These complications can occur in the setting of either duodenal or gastric ulceration [2]. The aim of this study was to assess the prevalence of Helicobacter Pylori (HP) infection in patients undergoing laparotomy for repair of complications of peptic ulcer.

MATERIAL AND METHODS

A retrospective analysis was performed of 26 patients who underwent surgery for a perforated, bleeding or pyloric stenosis. The procedure were performed by different surgical teams at Trakya University, Medical Faculty, in the department of General Surgery in Turkey between 15.11.1997-14.10.1999 and Van state Hospital in the department of General Surgery in Turkey between 15.10.1999-25.12.2000. The relationship between HP and The complications of peptic ulcer was analyzed. Demographic data (age, sex, and weight), severity of HP infection and the complications of peptic ulcer were compared

This study retrospectively analyzes Patients who underwent surgery for a perforated, bleeding or pyloric stenosis. The procedure were performed by different surgical teams at Trakya University, Medical Faculty, in the department of General Surgery in Turkey between 15.11.1997-14.10.1999 and Van state Hospital in the department of General Surgery in Turkey between

15.10.1999-25.12.2000. The patient's diagnosis of complications of peptic ulcer was performed in a short time frame with laparotomy after application of nasogastric tube.

Technique

All patients underwent surgery. Biopsy was taken during operation for HP nearly surgical area. Evaluation of cytology results was based on the following criteria. We subdivided the results of 26 cytology specimens in 3 categories: material unsatisfactory for interpretation, negative results and positive results (Table 1).

Statistical analysis was performed with the Student t test, the chi-square, and Fisher's exact test for categorical factors. Statistical significance was assumed for $P < 0.05$.

RESULTS

Surgical operation was performed 26 patients. There were 24 (92%) men and 2 (8%) women. The median age of the patients was 26.54 (18-48) years. The median age of men and the median age of women were compared, and statically significant differences were not found between both groups ($p > 0.05$).

Patient demographics, such as age and weight were compared, and no statistically significant differences were found. No mortalities or complications occurred during the process. HP positivity was found in 22(85%) of patients with complications of peptic ulcer in this series. Statistically significant relationship was found between HP positivity and complications of peptic ulcer ($p < 0.05$). All patients who were used to cigarette smoking ($p < 0.05$). No anyone was used nonsteroidal anti-inflammatory drug (NSAI).

DISCUSSION

Helicobacter Pylori (HP) infection represents one of the most common and medically prominent infections worldwide [1]. Infection with this micro-aerobic, gram-negative bacteria has been shows as an causal factor in the development of peptic ulcer disease [1,2]. Helicobacter pylori are found in 80-90% patients with peptic ulcer. However, there is paucity of reports on prevalence of H. pylori infection in patients with peptic ulcer perforation, bleeding or pyloric stenosis. Complicated Peptic Ulcer Disease refers to PUD complicated by hemorrhage, perforation, or obstruction [1,2]. These complications represent the most common indications for surgery in PUD.

Four etiologic factors are responsible for the vast majority of

PUD; Helicobacter pylori, nonsteroidal anti-inflammatory drug (NSAID) used, cigarette smoking and acid hyper secretion occurs in the majority of patients with duodenal ulcers [2,3].

Helicobacter pylori (HP) infection is associated with 90% to 95% of duodenal ulcers and 70% to 90% of gastric ulcers [5-7]. Infection produces chronic antral gastritis, increased acid and gastrin secretion, and decreased mucosal resistance to acid.

The most important advance in our understanding of the pathophysiology of peptic ulcer disease in recent years has been the recognition of the role of the bacterium, Helicobacter Pylori [3,4]. HP positive was frequently seen in patients undergoing laparotomy for repair of complications of peptic ulcer [3]. HP positivity was found in 22(85%) of patients with complications of peptic ulcer in this series.

The observation that eradication of HP reduces the incidence of long-term ulcer recurrence by 80% to 90% is strong evidence of its crucial role in the pathogenesis of peptic ulcer [5,6].

On the other site, another factor for patients with peptic ulcer perforation, bleeding or pyloric stenosis is used to cigarette smoking [4,7]. All patients who were used to cigarette smoking in this study ($p < 0.05$). Based on the findings of this study, it seems that a statistically significant relationship exists between cigarette smoking and the patients underwent surgery because of complications of peptic ulcer ($p < 0.05$).

And another risk factor for patients with peptic ulcer perforation, bleeding or pyloric stenosis is used NSAIA, Corticosteroids [7]. No anyone was used nonsteroidal anti-inflammatory drug (NSAI) in this study. The risk factors for bleeding are the use NSAIA, Corticosteroids, The critically ill and Helicobacter Pylori [2]. Curiously, the prevalence of HP in patients with bleeding ulcers appears 15% to 20% lower than in those with no bleeding ulcer [2]. HP were not detect in any cases in this study. Nonetheless, eradication of HP is important in reducing the long-term risk of ulcer recurrence and rebleeding [8,9].

Based on the findings of this study, it seems that a statistically significant relationship exists between the severity of HP infection and the patients underwent surgery because of complications of peptic ulcer ($p < 0.05$).

As a result; Based on the findings of this study, significant evidence suggests the potential role of Helicobacter pylori infection in the development of complications of peptic ulcer disease. The eradication of HP may result in future decline in the incidence of the emergent complications of peptic ulcer.

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Table 1: Relationship between HP and The complication of peptic ulcer.

The complication of ulcer	Helicobacter Pylori		
	Positive	Negative	Unsatisfactory
Perforation	21	1	0
Bleeding	0	1	2
Pylori stenosis	1	0	0

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