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Helicobacter pylori HAS NO INFLUENCE ON DISTAL GASTRIC CANCER SURVIVAL

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ABSTRACT – ***Context*** **-** There is some evidence that *Helicobacter pylori* correlates with distal gastric cancer genesis. However, few studies analyzed the survival related to *H. pylori* infection. ***Objective*** **-** To correlate gastric cancer survival and *H. pylori* infection. ***Methods*** – Sixty-eight patients with distal gastric cancer that underwent subtotal gastrectomy were studied. Minimal follow-up was 1 month. *H. pylori* infection was confirmed by biopsy. ***Results*** – Thirty-four patients (19 males (55.9%), mean age 60.9 ± 14.03, range 33-82 years) were *H. pylori* positive. Thirty-four patients (16 males (47.1%), mean age 57.9 ± 13.97, range 27-85 years) were *H. pylori* negative. Groups were comparable in regards to age (P = 0.4), gender (P = 0.5), stage [T (P = 0.2), N (P = 0.6) and M (P = 0.9)]. Survival was not different when groups were compared [P = 0.1616 (hazard ratio 0.6834, 95% CI 0.4009 to 1.1647)]. ***Conclusions*** – *H. pylori* infection does not affect distal gastric cancer survival.

HEADINGS – Stomach neoplasms. Helicobacter infections.

INTRODUCTION

Gastric cancer survival is low, especially in the West, not exceeding 25% at 5 years[2]. The prognosis after treatment is linked to classic oncologic factors such as tumor histology, stage, macroscopic characteristics, etc.[2, 3]. There is strong evidence that *Helicobacter pylori* (HP) is associated to gastric adenocarcinoma genesis[2, 7]; however, few studies have analyzed survival related to HP infection[4, 5, 6, 8].

This study aims to analyze HP infection as a prognostic factor for survival in patients with distal gastric adenocarcinoma.

METHODS

Sixty-eight patients with stomach adenocarcinoma originated in the gastric antrum submitted to surgical therapy were retrospectively studied.

Patients were grouped according to the presence of HP infection detected by endoscopic biopsy and histological analysis prior to the operation. Samples were collected from normal mucosa at the antrum. HP strains were not determined.

All patients underwent an open subtotal gastrectomy + DII lymphadenectomy with curative intent (R0 resection). Tumor stage were as follows, T1 – 20 (29%), T2 – 19 (28%), T3 – 27 (40%), T4 – 2 (3%); N0 – 28 (41%), N1 – 29 (43%), N3 – 11 (16%); M0 100%.

Patients were followed-up with an upper digestive endoscopy and computerized tomography scan every 6 months until 5 years after the operation and yearly thereafter. Mean time of follow-up was 65.6 ± 53.2 months (range 6.7-207.3 months).

Logrank test, Student's t test, Fisher's test, and Mann's Whitney test were used as indicated. P<0.05 was considered significant.

RESULTS

HP infection was detected in 34 patients, comprising 19 males (55.9%), with a mean age of 60.9 ± 14.03 years (range 33-82 years).

HP infection was not detected in 34 patients, comprising 16 males (47.1%), 16 males (47.1%), with a mean age of 57.9 ± 13.97 years (range 27-85 years).

Groups were comparable in regards to age (P = 0.4), gender (P = 0.5), stage [T (P = 0.2), N (P = 0.6) and M (P = 0.9)] and time of follow-up (P = 0.9).

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Survival was not different when groups were compared [$P = 0.1616$ (hazard ratio 0.6834, 95% CI 0.4009 to 1.1647)] (Figure 1).

DISCUSSION

Our results show that HP infection does not correlate with distal gastric cancer survival.

HP is associated to distal gastric cancer genesis[2]. The mechanism of action for the carcinogenesis is not yet fully understood. Apparently, HP infection protects against proximal gastric cancer that seems to be more related to gastroesophageal reflux disease[2]. Few studies focused on the association between HP and gastric cancer survival, but all of them appointed for better survival in HP positive patients (Figure 2). These studies did not restrict analyzes to distal tumors. Our study was entirely focused on distal tumors and no difference was noted in survival according to HP status.

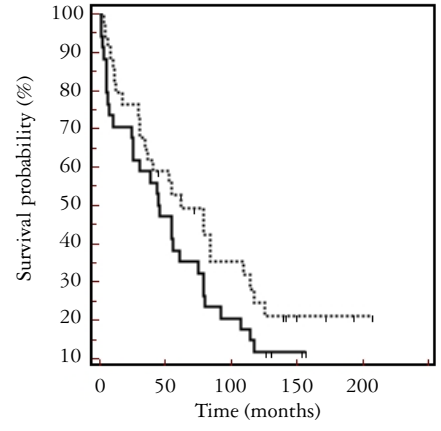
We hypothesized that HP might affect the biological behavior of gastric cancer. Several mechanisms were postulated to explain HP-related carcinogenesis and possible mechanisms for different survival, such as micro satellite instability, gene mutations, regulation of matrix proteins, etc.[7, 11]. Some authors found more aggressive tumors in HP negative patients[6, 10] while for others[5, 8] and in our study the number of patients with and without HP infection, tumor characteristics and population data were comparable showing a similar behavior.

Countries with high incidence of gastric cancer rates have typically a high prevalence of HP infection[2, 7]. This study was conducted in an area with high prevalence of HP infection, around 65%[9]. Interestingly, other series showed a higher prevalence of HP infection and gastric cancer compared to our patients (Figure 1) and other series of gastric cancer in Brazil[1]. Differences in HP strains may explain this finding and the lack of difference in survival found in our series. In fact, some African countries show a low gastric cancer rate but a high HP prevalence, known as the "African enigma"[7].

In conclusion, our series did not show differences in survival according to HP infection. Future studies must be conducted with HP strains identification.

Author/ year	Study design	n	*H. pylori* detection	Survival	Notes
Meimarakis et al. 2006[4]	Prospective	125 HP+ 41 HP-	Bacteriological culture, serological analyses and histological analyses	Better for HP+	All gastric locations
Lee et al. 1995[5]	Retrospective	82 HP+ 46 HP-		Better for HP+	All gastric locations. Result not confirmed by multivariated analyses
Marreli et al. 2009[6]	Retrospective	256 HP+ 41 HP-	Polymerase chain reaction (PCR) analysis for the vacA gene in gastric mucosa and serological	Better for HP+	All gastric locations
Kurtenkov et al. 2003[7]	Retrospective	58 HP+ 27 HP-	Serological	Better for HP+	All gastric locations. Stage 1 only

FIGURE 1. Literature
HP+: *H. pylori* infection detected
HP–: *H. pylori* infection not detected



***H.pylori* +**					
available to be followed	34	34	11	7	
Dead	0	18	3	4	
Lost follow-up	0	5	1	3	
***H.pylori* -**					
available to be followed	34	34	24	15	10
Dead	0	7	8	5	5
Lost follow-up	0	3	1	0	5

FIGURE 2. Actuarial distal gastric cancer survival in patients with and without *H. pylori* infection

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RESUMO – ***Contexto*** - Há evidência que a infecção por *Helicobacter pylori* correlacione-se com a etiologia do câncer gástrico distal. Há, entretanto, poucos estudos que analisam a sobrevivência relacionada ao *H. pylori*. ***Objetivo*** - Correlacionar a sobrevida do câncer gástrico distal com a infecção por *H. pylori*. ***Métodos*** – Sessenta e oito pacientes com câncer gástrico distal submetidos a gastrectomia subtotal foram estudados. O tempo mínimo de seguimento foi de 1 mês. A infecção por *H. pylori* foi confirmada por biopsia. ***Resultados*** – Trinta e quatro pacientes (19 homens (55,9%), idade média de 60,9 ± 14,03, variação 33-82 anos) tinham confirmação de infecção por *H. pylori*. Trinta e quatro pacientes (16 homens (47,1%), idade média de 57,9 ± 13,97, variação 27-85 anos) eram *H. pylori* negativo. Os grupos eram comparáveis considerando idade ($P = 0.4$), gênero ($P = 0.5$) e estágio [T ($P = 0.2$), N ($P = 0.6$) e M ($P = 0.9$)]. Sobrevivência não foi diferente quando os grupos foram comparados ($P = 0.1616$ (Hazard ratio 0.6834, 95% CI 0.4009-1.1647)). ***Conclusão*** - Infecção por *Helicobacter pylori* não afeta a sobrevida no câncer gástrico distal.

DESCRITORES – Neoplasias gástricas. Infecções por helicobacter.

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