

Incidence of Helicobacter Pylori Infection from the Endoscopy Register

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Abstract

Helicobacter pylori (HP) infection is one of the most prevalent infections worldwide, contributing to inflammation of the gastric mucosa which is of great interest given its involvement in many gastroduodenal pathologies and some extra-digestive diseases. **Aim of the Study:** Report the incidence of HP from the endoscopy and anatomopathology register. **Methods:** This is a descriptive retrospective study performed during a period from January 2019 to November 2022, based on data from the endoscopy and anatomopathology register. We included all patients over 16 years of age who underwent esophago-gastroduodenal fibroscopy (EGD) with gastric biopsies performed according to the Sydney protocol. **Results:** 903 patients were included in our study. The incidence of HP infection was 60% (n=541). The average age was 50 years [17-90], the Sex Ratio W/M: 1.3, the most frequent symptom was represented by epigastralgia. The esophago-gastroduodenal fibroscopy had objectified an erythemato-congestive gastric mucosa in 481 (89%) of the cases, erythemato-whitish in 27 (5%), nodular in 16 (3%) and it was normal in 16 (3%) of the cases. On anatomopathological study, the gastritis was antro-fundal, antral and fundal in respectively 487 (90%), 43 (8%) and 11 (2%) of the cases. The intensity of gastritis was mild in 6.8%, moderate in 92% and severe in 1.2% of patients. Gastritis activity was absent in 6 (1.1%), mild in 74 (13.8%), moderate in 455 (84.1%) and severe in 5 (1%) cases. The density of HP was mild in 75 (14%), moderate in 437 (80.8%), and severe in 28 (5.2%) cases. Intestinal metaplasia was observed in only 9 cases (1.7%), as for dysplasia, it was not identified in any of our patients. Adenocarcinoma was revealed in 9 (1.7%) patients. **Conclusion:** The results of our study indicate an incidence of 60% (n=541). The association of chronic gastritis was important. Its pathogenic role has been revealed in many gastroduodenal pathologies in particular gastric cancer objectified in our series in 1.7% of cases, hence the interest in researching HP infection and its eradication.

Keywords: Helicobacter Pylori, Metaplasia, Dysplasia, Adenocarcinoma.

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INTRODUCTION

Helicobacter pylori infection is one of the most common infections in the world, contributing to inflammation of the stomach lining.

It has a great interest given its involvement in many gastroduodenal pathologies such as: chronic gastritis, gastroduodenal ulcers and gastric neoplasia (adenocarcinoma and MALT-type lymphoma), as well as in certain extra-digestive disorders.

We report through this study the incidence of HP from the register of endoscopy and anatomopathology.

MATERIALS AND METHODS

This is a descriptive retrospective study, conducted in the hepato-gastroenterology and proctology department « Médecine B » Rabat, spanning a period from January 2019 to November 2022, based on data from the endoscopy and pathology register.

We included all patients over 16 years of age who underwent esophago-gastroduodenal fibroscopy with gastric biopsies performed according to the Sydney protocol. The biopsy samples were analyzed histologically to search for H. pylori. Patients with a known history of HP infection, whether treated or not, and EGD performed without biopsies were excluded.

The factors studied are: age, sexe, clinical signs, results of EGD, activity and intensity of funditis, activity and intensity of antritis, density of H.pylori and the presence or absence of intestinal metaplasia or dysplasia.

RESULTS

Painting 1: Demographic data

	N (%)
Number of EGD + biopsies	903
Number of patients with HP infection	541 (60)
Average age (years)	50 [17-90]
Sexe	
Women	307(56.7)
Male	234(43.3)

903 patients were included in our study. HP infection was found in 541 patients, an incidence of 60%. The average age was 50 years [17 - 90], the Sex Ratio W/M (F= 307, H=234): 1.3, the most frequent symptom was represented by epigastralgia in 400 (74%) cases.

- **Endoscopic Data:** The esophago-gastroduodenoscopy had objectified an erythematocongestive gastric mucosa (Picture 1) in 481 (89%) cases, erythematowhitish in 27 (5%), nodular (Picture 2) in 16 (3%) and it was normal in 16 (3%) cases.
- **Anatomopathological Data:** On the anatomopathological study, the gastritis was antro-fundal, antral and fundal in respectively 487 (90%), 43 (8%) and 11 (2%) of the cases.

- Intensity of gastritis: Mild in 37 (6.8%), moderate in 498 (92%) and severe in 6 (1.2%) of patients.
- Gastritis activity: Absent in 1.1% (n=6), mild in 13.8% (n=74), moderate in 84.1% (n=455) and severe in 1% (n=5) of cases.
- HP density: Mild in 75 (14%), moderate in 437 (80.8%), and severe in 28 (5.2%) of cases.
- Intestinal metaplasia was observed in only 9 cases (1.7%), as for dysplasia, it was not identified in any of our patients.
- Adenocarcinoma was revealed in 9 (1.7%) patients.

Painting 2: Anatomopathological data

	n(%)
Localization of gastritis	
Antro-fundic	487(90)
Antral	43(8)
Fundic	11(2)
Intensity of gastritis	
Mild	37(6.8)
Moderate	498(92)
Severe	6(1.2)
Gastritis activity	
Mild	74(13.8)
Moderate	455(84.1)
Severe	5(1)
Absent	6(1.1)
HP density	
+	75(14)
++	437(80.8)
+++	28(5.2)
Intestinal metaplasia	9(1.7)
Intestinal dysplasia	0(0)
Adenocarcinoma	9(1.7)



Picture 1: Endoscopic image showing erythematocongestive gastric mucosa



Picture 2: Endoscopic image showing a nodular gastric mucosa

DISCUSSION

Helicobacter pylori is a spiral, microaerophilic, difficult-to-grow, Gram-negative bacteria whose main reservoir is the human stomach [1]. The acquisition of the infection occurs mainly in childhood resulting in chronic gastritis which remains asymptomatic in 90%. It can sometimes progress to an ulcerative disease in 10% of cases, or even gastric cancer (1%) in adulthood [2].

Currently, with an infection rate reaching 50% of the world's population, *H. pylori* infection is the most widespread in the world. Factors that influence the incidence and prevalence of *H. pylori* infection are age, gender, geographic factors, and socioeconomic factors.

The prevalence of *H. pylori* infection is between 20% and 40% in industrialized countries [3]; it reaches 70 to 90% in developing countries [4]. Through a Moroccan study reported by Essadik *et al.*, the prevalence was 69.2% [5], which corresponds to the prevalence noted in the literature [6, 7].

The results of our study indicate an incidence of HP infection of 60%. In a series published in 2021 by Jamdade P *et al.*, [8] in India, the reported incidence rate was 80%, similar to the rates reported by Muller *et al.*, in Brazil [9] and Misra *et al.*, [10], with an incidence of 76% and 78% respectively. We did not highlight any difference in incidence between men and women, unlike the study by Jamdade P *et al.*, where the incidence was higher in men (62.6%) [8]. We objectified an average age of 50 years, close to that of the general population (40.6 years).

The study by Mujawar P *et al.*, [11] demonstrated that the anatomopathological study represents the gold standard for the diagnosis of HP. In case of infection with *H. pylori*, gastritis has variable topographies (antrum and fundus), compared to

autoimmune gastritis which affects the fundus only. In our study, 2% of patients infected with *H. pylori* developed gastric atrophy, this rate remains close to that reported by Muller *et al.*, [9], however it remains lower than what was found in other studies with lower rates 35% and 38% in the study by R.Jmaa and Tanko Mn respectively.

In the study performed by Chen *et al.*, [12], intensity of gastritis was mild in 28% of cases, moderate to severe in 24% of cases. Intestinal metaplasia was observed in 1.7%, this rate remains low compared to two studies objectifying a rate of 49% [13, 14] this can be explained by the existence of genetic or regional components. As for dysplasia, it was not identified in any of our patients.

The OLGA classification (Operative Link on Gastritis Assessment) makes it possible to determine and monitor subjects at risk of gastric cancer, taking into account histopathological and topographic data (localization of atrophy in the antrum and fundus). It makes it possible to establish an overall score of I to IV. A score of III or IV are predictive scores for the occurrence of dysplasia or cancer. This classification is associated with the OLGIM classification (Operative link for gastritis and intestinal metaplasia) which assesses the extent and importance of intestinal metaplasia using the same method [15].

Adenocarcinoma was revealed in 9 (1.7%) patients. Although the association is clearly established, the prevalence of gastric cancer does not overlap with that of cases of *H. pylori* infection, particularly in Africa where the rate of infection remains high while mortality from gastric cancer is still low, unlike East Asia and South America where gastric cancer rates remain high [16]. This underlines the hypothesis of the presence of other contributing co-factors.

Four prospective randomized studies [17-20] have tested the effect of HP eradication on the occurrence of cancer and none have shown a significant effect. It is recommended to eradicate *H. pylori* before the development of pre-neoplastic lesions [20]. Therefore, it is important to look for HP infection even in individuals without endoscopic lesions and to pursue eradication in positive cases.

CONCLUSION

HP infection is a public health problem in developing countries. The results of our study indicate an incidence of 60%. The association of chronic gastritis was important. Its pathogenic role has been revealed in many gastroduodenal pathologies in particular gastric cancer objectified in our series in 1.7% of cases, hence the interest in researching HP infection and its eradication.

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