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Original Research

Prevalence of Helicobacter Pylori Infection in Adult Patients with Dyspepsia at the Gastrointestinal and Hepatology Clinic in Tobruk Medical Center, Tobruk, Libya

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ABSTRACT:

Dyspepsia is a highly prevalent gastrointestinal condition characterized by persistent or recurrent epigastric discomfort or pain. It represents a significant clinical burden worldwide and is frequently encountered in both primary care and specialized gastroenterology settings. The underlying pathophysiology of dyspepsia is complex and multifactorial, involving disturbances in gastric motility, visceral hypersensitivity, psychosocial factors, and infectious causes. Among these, infection with *Helicobacter pylori* has been widely recognized as an important contributor, particularly in developing countries where its prevalence remains high. This cross-sectional study aimed to determine the prevalence of *Helicobacter pylori* infection among adult patients presenting with symptoms of dyspepsia at the Gastrointestinal and Hepatology Clinic in Tobruk Medical

Center, Tobruk, Libya. The study population consisted of adult patients aged 18 years and above who presented with clinical features suggestive of dyspepsia over the study period. A total of 205 patients were recruited, including 100 males and 105 females. Relevant demographic and clinical data were collected, and all participants were evaluated for *Helicobacter pylori* infection using appropriate diagnostic methods. Out of the 205 patients included in the study, 164 were found to be positive for *Helicobacter pylori*, yielding a prevalence rate of 80%. The findings of this study demonstrate a high prevalence of *Helicobacter pylori* infection among adult patients with dyspepsia in this setting, highlighting the need for routine diagnostic evaluation and targeted eradication therapy to improve patient outcomes.

KEYWORDS: Dyspepsia, Helicopacter Pylori, Tobruk Medical Center, Libya.

INTRODUCTION

Dyspepsia, commonly referred to as indigestion, encompasses a range of gastrointestinal symptoms that significantly impact patients' quality of life,These symptoms often include epigastric pain, bloating, and nausea, which can be both distressing and debilitating (Talley, N. J., & Vakil, N. (2005).

The colonization of the gastric mucosa by the gram-negative bacterium *Helicobacter pylori* (*H. pylori*) represents one of the most common infectious drivers of dyspepsia (Suerbaum, S., & Michetti, P. (2002).

Recognized as the primary etiological agent of chronic gastritis, *Helicobacter pylori* can trigger a range of severe gastroduodenal sequelae in susceptible individuals, most notably gastric cancer, mucosa-associated lymphoid tissue (MALT) lymphoma, and peptic ulcer disease (PUD) (Safavi M et al.2016).

MATERIALS AND METHODS

This cross-sectional study was conducted in Tobruk medical centre, Tobruk, Libya. The study was carried out at the Tobruk Medical Centre over a one-year period, from January to December 2024.

Ethical approval for the study was obtained Ethical clearance was granted by the **Research Ethical Committee of Tobruk University**. To safeguard participant autonomy and maintain strict ethical compliance, informed consent was secured from all subjects prior to study initiation. The investigated cohort comprised 205 adult patients (100 males, 105 females) aged 18 years or older presenting with dyspeptic symptoms. Enrollment was conducted via systematic sampling to guarantee a representative population

Inclusion Criteria*:*

- Adults aged 18 years and above*.*
- -Patients presenting with symptoms of dyspepsia*.*
- -Patients who provided informed consent*.*

Exclusion Criteria

Patients who had received antibiotic treatment for H. pylori in the past six months*.*

Patients with a history of gastric surgery*.*

Patients with severe comorbid conditions that might interfere with the study*.*

patient taking PPI last 2weeks or taking antibiotic last month.

Diagnostic Procedure

The primary diagnostic method for detecting H. pylori infection was the histopathological examination of gastric biopsies obtained via oesophagogastroduodenoscopy (OGD). During the endoscopy, multiple biopsy samples were taken from the antrum and corpus of the stomach. The biopsy specimens were then processed and stained using hematoxylin and eosin (H&E) and Giemsa stains to identify the presence of H-pylori by expert Histopathologist.

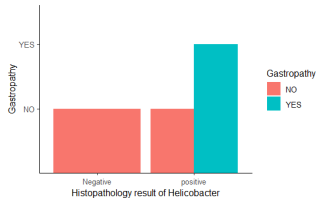

Fig. 1. Endoscopic picture of Gastropathy.

RESULTS

Prevalence of Adult patients with Helicobacter Pylori Infection in the sample =164 (80%).

Table 1 Demographic data

Clinical Data	Participants = (N=205)
Age	24 (18-48)
Gender	Female =105 (51.2)% Male = 100 (48,.8) %
Postprandial Fullness	No = 119 (58%) Yes =86 (48%)
Nasuea (%)	No = 107 (52.2 %) Yes =98 (47.8 %)
Vomiting (%)	No =116 (56.6%) Yes =89 (43.4 %)
Early satiety (%)	No =115 (56.1 %) Yes =90 (43.9%)
Epigastric pain (%)	No =110 (53.7) Yes = 95 (46.3%)
Epigastric burning	No =94 (45.9%)

Table 2 Endoscopic findings

Endoscopic findings	Participamts %
Gastropathy	No = 112 (54.9 %) Yes =93 (45.4%)
Gastric ulcer	No = 198 (96.6%) Yes = 7 (3.4 %)
D.Ulcer	No =191 (93.2 %) Yes = 14 (6.8 %)
Gastric Mass	No =201 (98 %) Yes =4 (2 %)
Esophagitis	No =203 (99%) Yes = 2 (1 %)
Gastric polyp	No = 200 (97.6 %) Yes = 5 (2.4 %)
Hiatus Hernia	No =176 (85.9%) Yes =29 (14.1 %)
Normal	No =164 (80%)

Table 3 The association between the patients with Helicobac Pylori Infection and controls.

Clinical data		Negative (n = 41)	Positive (n = 164)	P
Postprandial Fullness (%)	No	28 (68.3)	91 (55.5)	0.19
	Yes	13 (31.7)	73 (44.5)	
Nasuea (%)	No	19 (46.3)	88 (53.7)	0.507
	Yes	22 (53.7)	76 (46.3)	
Vomiting (%)	No	20 (48.8)	96 (58.5)	0.342
	Yes	21 (51.2)	68 (41.5)	
Early satiety (%)	No	26 (63.4)	89 (54.3)	0.379
	Yes	15 (36.6)	75 (45.7)	
Epigastric pain (%)	No	19 (46.3)	91 (55.5)	0.381
	Yes	22 (53.7)	73 (44.5)	
Epigastric burning (%)	No	18 (43.9)	76 (46.3)	0.916
	Yes	23 (56.1)	88 (53.7)	
Bloating (%)	No	17 (41.5)	73 (44.5)	0.86
	Yes	24 (58.5)	91 (55.5)	
Bleaching (%)	No	24 (58.5)	104 (63.4)	0.692
	Yes	17 (41.5)	60 (36.6)	
Gastropathy (%)	No	41 (100.0)	71 (43.3)	< 0.001*
	Yes	0 (0.0)	93 (56.7)	
G. ulcer (%)	No	41 (100.0)	157 (95.7)	0.387
	Yes	0 (0.0)	7 (4.3)	
D. ulcer (%)	No	41 (100.0)	150 (91.5)	0.111
	Yes	0 (0.0)	14 (8.5)	
Gastric mass (%)	No	41 (100.0)	160 (97.6)	0.705
	Yes	0 (0.0)	4 (2.4)	
Esophagitis (%)	No	41 (100.0)	162 (98.8)	1
	Yes	0 (0.0)	2 (1.2)	
Gastric polyp (%)	No	41 (100.0)	159 (97.0)	0.571
	Yes	0 (0.0)	5 (3.0)	
Gastric outlet obstruction (%)	No	41 (100.0)	157 (95.7)	0.387
	Yes	0 (0.0)	7 (4.3)	
Hiatus hernia (%)	No	41 (100.0)	135 (82.3)	0.008*
	Yes	0 (0.0)	29 (17.7)	
Normal (%)	No	0 (0.0)	164 (100.0)	<0.001*
	Yes	41 (100.0)	0 (0.0)	

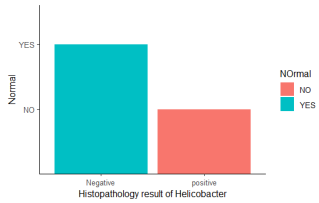

Fig. 2. Histopathology of Helicobacter pylori.

DISCUSSION

Helicobacter pylori serves as the primary etiology of chronic gastritis and is known to trigger severe gastroduodenal complications in select patients, including peptic ulcer disease (PUD), gastric carcinoma, and mucosa-associated lymphoid tissue (MALT) lymphoma (Sugano, K et al.2015).

The present investigation evaluated the relationship between dyspeptic symptoms, endoscopic outcomes, and *H. pylori* status.

Our cohort demonstrated an overall infection prevalence of 80% (with 20% testing negative), an outcome that closely mirrors regional data documented in Iraq and Iran (Abd Elwahhab et al.2012) (Shokrzadeh et al.2012).

These findings are further corroborated by earlier local research conducted at El-Jamahiria Hospital in Benghazi, Libya, which recorded an 82% positivity rate among 132 endoscopy patients aged 15 to 83 (mean age 38 years) (Bakka et al .2002).

CONCLUSION

patients with Helicobacter Pylori Infection in the sample was 164 (80%),with 83 female,81 male,positive cases was higher in middle age group,the bloating was the common symptom associated with H-pylori infection, the gastropathy was the most common finding in OGD in cases with H-pylori infection.

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انتشار عدوى جرثومة الملوية البوابية لدى المرضى البالغين المصابين بعسر الهضم في عيادة الجهاز الهضمي وأمراض الكبد في المركز الطبي بطبرق، طبرق- ليبيا

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الملخص:

عسر الهضم هو حالة جهاز هضمي شائعة جداً تتميز بألم أو إزعاج مستمر أو متكرر في المنطقة فوق المعدة. ويمثل عبئاً سريرياً كبيراً على مستوى العالم، وتواجه هذه الأعراض بشكل متكرر في وحدات الرعاية الصحية الأولية و عيادات أمراض الجهاز الهضمي المتخصصة. الفسيولوجيا المرضية الكامنة وراء عسر الهضم معقدة ومتعددة العوامل، وتشمل اضطرابات حركة المعدة، وزيادة حساسية الأحشاء، والعوامل النفسية الاجتماعية، والأسباب المعدية. ومن بين هذه الأسباب تعتبر الاصابه بالجرثومه الحلزونيه كمساهم مهم، وخاصة في البلدان الناميه حيث معدلات الاصابه في ازدياد مستمر.. هدفت هذه الدراسة هو تحديد معدل انتشار عدوى جرثومة الملوية البوابية لدى المرضى البالغين الذين يعانون من أعراض عسر الهضم في عيادة الجهاز الهضمي وأمراض الكبد في المركز الطبي بطبرق، طبرق، ليبيا . تكونت مجموعة الدراسة من مرضى بالغين تبلغ أعمارهم 18 عاماً فأكثر، قدموا بمظاهر سريرية تشير إلى عسر الهضم خلال فترة الدراسة. تم تسجيل ما مجموعه 205 مريضاً، من بينهم 100 ذكر و105 إناث. تم جمع البيانات الديموغرافية والسريرية ذات الصلة، وتم تقييم جميع المشاركين لعدوى جرثومة الملوية البوابية باستخدام طرق تشخيصية مناسبة . . من بين 205 مريضاً شملتهم الدراسة، وجد أن 164 مريضاً مصاباً بجرثومة الملوية البوابية، مما يعطي معدل انتشار يبلغ 80.% أظهرت نتائج هذه الدراسة ارتفاع معدل انتشار عدوى جرثومة الملوية البوابية لدى المرضى البالغين المصابين بعسر الهضم في هذا الإعداد، مما يسلط الضوء على ضرورة التقييم التشخيصي الروتيني والعلاج الاستئصالي المستهدف لتحسين النتائج الصحية للمرضى.

الكلمات المفتاحية: عسر الهضم، الملوية البوابية، المركز الطبي بطبرق، ليبيا.