H. Pylori Infection Among Adults Undergoing Gastrointestinal Endoscopy

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ABSTRACT:

BACK GROUND:

To determine the prevalence of H.Pylori infection in adults undergoing oesphagogastrodudenoscopy by two methods serology (ELISA technique) comparing it with histopathology.

METHODS:

Forty patients referred to the GIT clinic of AL-Yarmok teaching hospital for GI endoscopy were involved in this study; their biopsies and sera send to histopathology and immunology department respectively for detection of H.Pylori.

RESULTS:

H.Pylori Abs(IgG) were detected in the sera of 25(63%) patients by ELISA,15 (37.50%) of them H.Pylori was also seen in their biopsies by Giemsa s stain. Most patients with detectable antibodies are those with chronic gastritis ;however patients complaining from reflux oesophagitis showed a significant absentees of these Abs.

CONCLUSION:

Most patients with gastritis had detectable H,Pylori Abs in their sera; However the study reveled a significant decrease in H.Pylori Ab detection in patients sera with reflex esophagitis (R.O).

KEY WORDS: Endoscopy , H.Pylori , ELISA.

INTRODUCTION:

Helicobacter Pylori was brought to the worlds attention 1983by Warren and Morshall, it is now acknowledged that H.Pylori gastritis is the one of the most common human bacterial infectious disease and is causally linked with gastritis , peptic ulcer disease, gastric adeno- carcinoma ,and gastric B.cell lymphoma.[1]

H.Pylori is a slow growing , microaerophilic, highly motile, Gram negative spiral organism whose most striking biochemical characteristic is the abundant production of urease enzyme which is an important indirect marker of the organisms presence because it is the bases of biopsy rapid unease test, the urea broth test and as an antigen for serologic detection . The prevalence of H.Pylori among healthy individuals varies depending on age , socioeconomic class, country of origin. In developing countries children are typically infected by age 10 years, whereas in developed countries there is an age related increase in prevalence [1,2].The major risk factor for infection is the socioeconomic status of the family during childhood as reflected by number of persons in a house hold, sharing a bed ,and absence of a fixed hot water supply all of which probably are markers for the level of sanitation and house hold hygiene[3,4,5].

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It is not known how often an acute infection with H.Pylori sponteneously clears , studies in children suggest that sponteneous loss of infection may be common [6].Infection in adults appears to be typically long lived and is probably life long.[7] . Most infected individuals have chronic active, non atrophic superficial gastritis .This histological form is usually asymptomatic but may be associated with duodenal ulcer; chronic atrophic gastritis , gastric adeno carcinoma or gastric lymphoma. [6,7] Diagnostic tests for H.Pylori can be divided into those that do and do not require samples of gastric mucosa, mucosal biopsy of histological examination of the specimen for the presence of H.Pylori and or gastritis has been the diagnostic method of choice until recently :to increase diagnostic yield ,use of large cup biopsy and 3 samples biopsy (lesser curve Angularis ,greater curve pre pyloric and greater curve body) examined by both Giemsa stain as a standard stain and hematoxylin & eosin stain which is excellent to determine histologic chronic or chronic active gastritis and demonstrates H.Pylori if large number of organisms are present [1,6] . Biopsies may also be tested for the presence of unrease enzyme production by agar gel slide test such as rapid urease test which is excellent for screening for the presence of H.Pylori in patients with peptic ulcer.

Tests that do not require a mucosal biopsy include serologic tests as urea broth test, detection of

Circulating IgG Ab response elicited in chronic H.Pylori infection by ELISA as test for IgA and IgM are unreliable [7]. Serologic test are sensitive and specific as biopsy based methods: however they are un useful for the initial diagnosis of H,Pylori infection and also not to confirm infection cure as less than 20% of the antibody titer fall in the first 6 months.[6,7] .

MATERIAL AND METHODS:

This study was carried on patients attending GIT clinic of AL-YARMOUK teaching hospital, 40 patients were enrolled age range 18-67 years who were referred for different reasons to do endoscopy: they were subjected to questionnaire for medical and surgical history , biopsies were taken from all patients immediately placed in 10% formalin were send for histopathology examination and also for detection of H.Pylori by Giemsa stain . 2mls of blood were aspirated from each patient and 20 healthy control group send to immunology department for detection of H.Pylori Antibodies (IgG type) in their sera by using ELISA technique(BIO RED KIT) which is a sandwich assay with two immunological steps the first leads to capture of H.Pylori Abs and the second binding anti H.Pylori enzyme labeled Ab (conjugate) to Ag - Ab complex the intensity of coloration is proportional to Ab concentration in the sample and standard(using cut off value of >1.1 for their titerto be sero-positive).

RESULTS:

A total 60 adults were included in this study 40 patients group and 20 healthy control group .Patients age ranges (18-76) years ;18 females and 22 male .H.Pylori IgG antibodies were detected by ELISA in 10 females(55.6%), 15 males (68.2%) with no significant differences table (1).

Table 1: sero prevalence of H.Pylori antibodies by gender

			H.Pylori Ab (_)	H.Pylori Ab (+)	Total
Gender	Female	Count	8	١٠	18
		% within gender	44.4%	55.6%	100%
	Male	Count	7	15	22
		% within gender	31.8%	68.2%	100%
TOTAL		Count	15	25	40
		% within gender	37.5%	62.5%	100.0%

P value =0.412

All patients enrolled in this study complained of epigastric pain for various periods with other associated symptoms as nausea ,vomiting, burning sensation that showed high percentage of H. Pylori antibodies in their sera though not significant ;whilst p.value was <0.05 in patients complaining of gases as shown in table (2).

Table (2) H.Pylori AB in comparison to symptoms

Symptoms	H Pylori Ab		P Value
	detec.(%)	undete.(%)	
Nausea	18(72.0)	7(28.0)	0.109
Vomitting	17(73.9)	6(26.1)	0.083
Wt.loss	4(66.7)	2(33.3)	0.819
Dysphagia	4(66.7)	2(33.3)	0.819
Gases	18(90.0)	2(10.0)	* 0.0003
Burning	25(65.8)	13(34.2)	0.061
Diarrhea	2(66.7)	1(33.3)	0.877
Hematamesis	0(0)	1(100.0)	0.191

* P value < 0.05

Regarding endoscopy findings patients with gastritis showed the highest %of H.Pylori Ab in their sera although not significant ;whilst H.Pylori Abs were significantly absence in the sera of patients with reflux oesophagitis .table(3).

Table (3) Comparison of H.Pylori finding between ELISA &endoscopy

Endoscopy Findings	H.Pylori Ab		P Value
	Detectable	Undetectable	
	No. (%)	No. (%)	
Gastritis	14 (63.2)	7 (36.8)	0.367
Reflex oesophagitis	4 (33.3)	8 (66.7)	0.013*
Dudenitis	3 (75.0)	1 (25.0)	0.103
Dudenal ulcer	7 (87.5)	1 (12.5)	0.003*
Gastric ulcer	1 (50.0)	1 (50.0)	0.708
Hiatus hernia	1 (100.0)	0	

* P value< 0.05

Concerning histopathology H.Pylori detection by Giemsa stain as standard test, was seen in 15 (37.50%) of patients biopsies, 25 (62.50%) of them had H.Pylori Abs (IgG) in their sera as well which is of significancy as shown in table (4).

Table (4) H.Pylori Ab in relation to H.Pylori in biopsy

			H. Pylori in biopsy		
			Seen	Not seen	Total
H pylori Ab in Sera	Detect	count %	14 56.00%	11 44.00%	25 100.00%
	Undet.	count %	1 6.70%	14 93.30%	15 100.00%
Total		count %	15 37.50%	25 62.50%	40 100.00%

P=0.002

In comparison to healthy controls H. Pylori Abs were detected 25:40 (63%) Of symptomatic (patient group) and 8:20 (40%) of asymptomatic (healthy controls) table (5)

Table (5) Detection of H.Pylori Ab among symptomatic &asymptomatic individuals

	H.pylori Ab	
	detectable	undetectable
Sympt.	25(63%)	15(37%)
Asympt	8(40%)	12(60%)

p=0.099

DISCUSSION:

In agreement with other study we found no significant differences in seropositivity between male and females regarding H.Pylori infection. [8] Patient infected with H.P complains mainly of epigastric pain ,nausea,vomiting, gases and may describe heart burn ,dysphagia and weight loss ;However there is conflicting data on wither patient symptoms correlate to H.Pylori infection some say yes[9] some say no[10].

Most patients with gastritis had detectable H,Pylori Abs in their sera the confirms that Primary cause of peptic ulcer in 70-90% of cases is gastritis caused by helicobacter pylori infection especially atrophic gastritis in the antrum of the stomach .WHO presented a consensus statement that H.Pylori infection is the main risk factor in developing of gastric cancer.[11] The study reveled a significant decrease in H.Pylori Ab detection in patients with reflux esophagitis (R.O) this might confirm the increased risk of esophagitis after H.Pylori eradication therapy [12] Most studies in adults show high sensitivity and specificity of

serological detection of H.Pylori Ab IgG type., also it has important advantage over endoscopy-based methods for large population epidemiologic studies because its non invasive and easily employed [13] 25 adults were sero positive but 11 of them were negative by histopathology some of these patients might have recovered from H.Pylori infection and the positive antibody test result might have been due to the presence of convalescent antibodies. Other suggest doing biopsy not only from antral area but also from the body of the stomach as H.Pylori colonization at times less dense and has different distribution (antrum versus body predominant) that may increase the number of serological positivity and may affect the accuracy of ELISA test. IN addition our observation is constant with the hypothesis that says H.Pylori may be no longer detected in tissues in the presence of gastric atrophy. [14].

Patients with positive serological test for H.Pylori are more likely to have history of peptic ulcer disease .The national institute of health consensus development panel affirmed the link between that eliminating H.Pylori decrease the rate of ulcer recurrence [15].

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