



A Comparative Study of Incidence of Helicobacter Pylori in Ulcer Dyspepsia And Non Ulcer Dyspepsia

KEYWORDS

Ulcer dyspepsia, Non ulcer dyspepsia, Helicobacter pylori, Esophago-gastroduodenoscopy, RAPID UREASE TEST, Histopathological examination.

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ABSTRACT

AIMS AND OBJECTIVES: *The present study compares incidence of Helicobacter pylori between two groups:*

1. Ulcer dyspepsia
2. Non ulcer dyspepsia

METHODS: Total of 200 cases of dyspepsia, 100 from each group: Ulcer dyspepsia and Non ulcer dyspepsia from July 2011 to august 2013 were selected. A thorough clinical history of dyspepsia with examination of the patient was done using proforma and esophagogastroduodenoscopy was done on the selected dyspeptic patients. Biopsy was taken and sent for RAPID UREASE TEST and Histopathological examination.

Reports were tabulated and results were compared using various statistical methods.

RESULTS:

- In this study, it was found that more number of people were positive in the age group of 41-50yrs (p value 0.008).
- Gastric ulcer was the common endoscopy finding in ulcer dyspepsia patients who were positive for H.pylori infection (17%).
- Incidence of Helicobacter pylori infection is similar in both ulcer (28%) and non ulcer dyspepsia (23%) groups.
- Both Rapid RAPID UREASE TEST and Histopathological examination were proven equally efficacious in detecting Helicobacter pylori infection.

CONCLUSION:

- Totally, 200 patients with dyspepsia who underwent upper esophago-gastroduodenoscopy and biopsy were subjected to RAPID UREASE TEST and Histopathological examination. Similar statistical incidence of positive cases was found in both ulcer dyspepsia(28%) and non ulcer dyspepsia (23%) groups.
- Both RAPID UREASE TEST and Histopathological examination of biopsy specimen had similar results for Helicobacter pylori, proving both tests are good for diagnosing Helicobacter pylori infections.
- In this study we found that it is better to consider treating non ulcer dyspepsia patients for Helicobacter pylori, as prevalence of Helicobacter pylori is similar in both ulcer dyspepsia (28%) and non ulcer dyspepsia (23%) groups.

INTRODUCTION

Before the discovery of Helicobacter pylori, ulcer disease was considered as the result of a conflict between gastric acid and pepsin on one side, and protection offered by gastric mucosal barrier on the other side. After the discovery by Dr. Marsall and Dr. Warren, that the human gastric mucosa is colonized by a spiral gram negative organism Helicobacter pylori and its association with recurrence of Acid Peptic Disease (APD,) this has opened up the concept of conquering this dreaded ailment by mankind. The silver lining in this, is that Helicobacter pylori infection and its related diseases can be controlled with proper and adequate medical therapy. The incidence of Helicobacter pylori is high in developing countries. There has been a reported decrease in prevalence in developed countries due to improved economic conditions. Poor socio economic status, poor hygiene and overcrowding are closely linked with its high prevalence. Thus, in a country like India where every rupee counts, it is imperative to treat

the basic cause of APD to keep the population disease free. This in turn leads to increased productivity at the workplace, and also reduces the health expenditure on this disease. H. pylori test and treatment is the strategy of choice in all (adult) patients with functional dyspepsia in high-prevalence populations. With this background the current study is intended to compare the incidence of Helicobacter pylori infection in ulcer dyspepsia and non ulcer dyspepsia patients in our JSS hospital population to make an efficient and cost effective treatment available to those who have H.pylori infection.

METHODOLOGY

Source of data:

All patients presenting with dyspepsia coming for endoscopy to Department of Surgery, JSS Hospital.

Study design:

The study is prospective comparative study.

Sample size:

Total 200 patients were selected, 100 each of ulcer dyspepsia and non ulcer (functional) dyspepsia patients.

(Assumptions were alpha 0.05, beta 0.2, power 80%, margin of error 5%, confidence level 95%.)

Inclusion criteria:

All patients presenting above the age of 12 years with dyspepsia willing for

Oesophago-gastroduodenoscopy(OGD) assisted biopsy followed by RAPID UREASE TEST and Histopathological examination.

Exclusion criteria:

All dyspeptic patients who have been diagnosed with malignancy, pancreatic disorders, biliary tract disorders, uncommon luminal gastrointestinal disorders, medication intolerance and food intolerance.

Procedure:

After a thorough clinical examination and explaining the procedure to the patient and taking consent, upper gastrointestinal endoscopy was performed under local anaesthesia. Patients were asked to lie in left lateral position with both hips and knee flexed and arms between the legs. A plastic mouth gag was inserted and held firmly by the assistant. Local anaesthetic spray was used before inserting the endoscope. Endoscope was passed into the oropharynx crossing the cricopharynx into the oesophagus all the way encouraging the patient to swallow. Once the scope has crossed the cricopharyngeal sphincter, scope can be easily passed without the patients aid. The oesophagus, stomach, first and second part of the duodenum were visualized and screened for any pathology. Biopsies were taken from multiple sites in the antrum of stomach. Endoscope and biopsy forceps were disinfected. Biopsy specimen was subjected to Histopathological examination and RAPID UREASE TEST.

OBSERVATION AND RESULTSEPIGASTRIC PAIN

Group	Epigastric pain		Total
	No	Yes	
Ulcer	9	91	100
Non Ulcer	3	97	100
Total	12	188	200

EPIGASTRIC PAIN IS COMMON SYMPTOM IN BOTH GROUPS WITH SIMILAR STATISTICAL INCIDENCE.

RETROSTERNAL BURNING SENSATION

Group	Retrosternal Burns		Total
	No	Yes	
Ulcer	44	56	100
Non Ulcer	42	58	100
Total	86	114	200

RETROSTERNAL BURNING SENSATION HAS SIMILAR STATISTICAL INCIDENCE IN BOTH GROUPS.

POSTPRANDIAL FULLNESS

Group	Postprandial Fullness		Total
	No	Yes	
Ulcer	95	5	100
Non Ulcer	95	5	100
Total	190	10	200

POST PRANDIAL FULLNESS HAS SIMILAR STATISTICAL INCIDENCE IN BOTH GROUPS.

EARLY SATIETY

Group	Early Satiety		Total
	No	Yes	
Ulcer	92	8	100
Non Ulcer	100	0	100
Total	192	8	200

EARLY SATIETY IS MORE COMMON IN ULCER DYSPEPSIA PATIENTS.

BLOATING SENSATION

Group	Bloating		Total
	No	Yes	
Ulcer	93	7	100
Non Ulcer	100	0	100
Total	193	7	200

BLOATING SENSATION COMPLAINT IS MORE COMMON IN ULCER DYSPEPSIA GROUP.

ANOREXIA

Group	Anorexia		Total
	No	Yes	
Ulcer	99	1	100
Non Ulcer	92	8	100
Total	191	9	200

ANOREXIA IS MORE COMMON IN NON ULCER DYSPEPSIA GROUP.

NAUSEA

Group	Nausea		Total
	No	Yes	
Ulcer	96	4	100
Non Ulcer	100	0	100
Total	196	4	200

NAUSEA COMPLAINT IS MORE COMMON IN ULCER DYSPEPSIA GROUP

VOMITING

Group	Vomiting		Total
	No	Yes	
Ulcer	98	2	100
Non Ulcer	100	0	100
Total	198	2	200

VOMITING SYMPTOM HAS SIMILAR STATISTICAL INCIDENCE IN BOTH GROUPS

HEMETEMESIS

Group	Haemetemesis		Total
	No	Yes	
Ulcer	93	7	100
Non Ulcer	100	0	100
Total	193	7	200

HEMETEMESIS IS MORE COMMON IN ULCER DYSPEPSIA GROUP.

MALENA

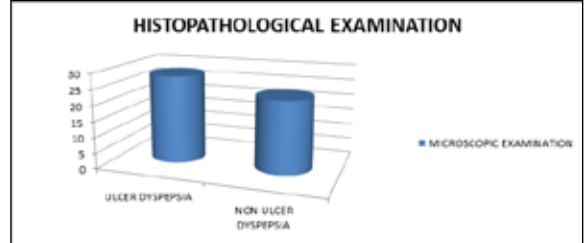
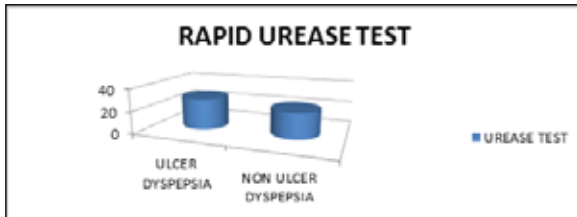
Group	Malena		Total
	No	Yes	
Ulcer	97	3	100
Non Ulcer	100	0	100
Total	197	3	200

RAPID UREASE TEST

Group	RAPID UREASE TEST		Total
	No	Yes	
Ulcer	72	28	100
Non Ulcer	77	23	100
	149	51	200

HISTOPATHOLOGICAL EXAMINATION

Group	microscopy		Total
	No	Yes	
Ulcer	72	28	100
Non Ulcer	77	23	100
Total	149	51	200



POSITIVE CASES FOR RAPID UREASE TEST HAS SIMILAR STATISTICAL RESULTS IN BOTH GROUPS

HISTOPATHOLOGICAL EXAMINATION OF POSITIVE H.PYLORI HAS SIMILAR STATISTICAL RESULTS IN BOTH GROUPS.

Descriptives						
	Group			Statistic	Standard Error	
Age	Ulcer	Mean		46.7300	1.36684	
		95% Confidence Interval for Mean		Lower Bound	44.0179	
				Upper Bound	49.4421	
		5% Trimmed Mean		46.5000		
		Median		47.0000		
		Variance		186.825		
		Std. Deviation		13.66841		
		Minimum		20.00		
		Maximum		85.00		
	Range		65.00			
	Non Ulcer	Mean		41.9700	1.35568	
		95% Confidence Interval for Mean		Lower Bound	39.2800	
				Upper Bound	44.6600	
		5% Trimmed Mean		41.3222		
		Median		40.0000		
		Variance		183.787		
		Std. Deviation		13.55681		
Minimum		19.00				
Maximum		84.00				
Range		65.00				
Duration in weeks	Ulcer	Mean		2.3600	.08706	
		95% Confidence Interval for Mean		Lower Bound	2.1873	
				Upper Bound	2.5327	
		5% Trimmed Mean		2.3333		
		Median		2.0000		
		Variance		.758		
		Std. Deviation		.87062		
		Minimum		1.00		
		Maximum		5.00		
	Range		4.00			
	Non Ulcer	Mean		2.9300	.15259	
		95% Confidence Interval for Mean		Lower Bound	2.6272	
				Upper Bound	3.2328	
		5% Trimmed Mean		2.8111		
		Median		3.0000		
		Variance		2.328		
		Std. Deviation		1.52590		
Minimum		1.00				
Maximum		8.00				
Range		7.00				

Test Statistics ^a		
	Age	Duration in weeks
Mann-Whitney U	3895.500	4069.500
Z	-2.701	-2.386
p value	0.007	0.017
AGE GROUP DISTRIBUTION IN BOTH GROUPS:		

AGE GROUPS	ULCER DYSPEPSIA		NON ULCER DYSPEPSIA	
	MALE	FEMALE	MALE	FEMALE
BELOW 30YRS	11	4	14	10
31-40YRS	12	6	19	11
41-50YRS	22	8	12	11
51-60YRS	14	9	11	4
ABOVE 60YRS	13	1	5	3

AGE GROUPS OF 31-40 YRS AND 41-50 YRS ARE PRESENTING WITH DYSPEPSIA MORE COMMONLY

MORE NUMBER OF PEOPLE ARE POSITIVE IN AGE GROUP OF 41-50YRS

ENDOSCOPY FINDINGS OF PATIENTS WITH H.PYLORI POSITIVE CASES

ENDOSCOPY FINDINGS	GASTRIC ULCER	DUODENAL ULCER	GASTRIC +DUODENAL ULCER	HEALED DUODENAL ULCER	GASTRIC ULCER +OE-SOPHAGITIS	GERD
NUMBER OF CASES	17	5	2	1	2	1
p value	0.03					

IN ULCER DYSPEPSIA CASES MOST COMMON ENDOSCOPY FINDING WITH POSITIVE STATUS IS GASTRIC ULCER. GENDER DISTRIBUTION OF POSITIVE CASES IN ULCER AND NON ULCER DYSPEPSIA GROUPS

	Gender				
	Male		Female		
ULCER GROUP		Count	Column N %	Count	Column N %
	No	54	75.0%	18	64.3%
	Yes	18	25.0%	10	35.7%
	Total	72	100.0%	28	100.0%
	gender				
	Male		Female		
NON ULCER GROUP		Count	Column N %	Count	Column N %
	No	44	72.1%	33	84.6%
	Yes	17	27.9%	6	15.4%
	Total	61	100.0%	39	100.0%

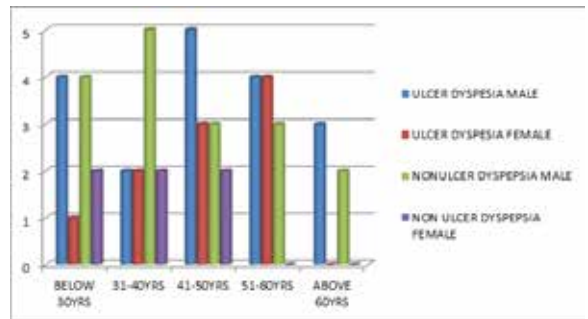
TOTAL NO OF MALE POSITIVE CASES IN ULCER DYSPEPSIA GROUP: 18. AND IN NON ULCER GROUP 17. TOTAL NO OF FEMALE POSITIVE CASES IN ULCER DYSPEPSIA GROUP 10 AND IN NON ULCER GROUP 6.

DISCUSSION

Total 200 patients of which 100 each of ulcer dyspepsia patients and non ulcer dyspepsia patients who were complaining of dyspepsia and who underwent upper GI endoscopy were taken in this study. Several studies have been done to find the association of H.pylori and symptoms of non ulcer dyspepsia but these studies have shortcomings like, lack of proper control, variable definitions of H.Pylori infection, relatively less number of cases. The diagnosis of H.Pylori infection was made using Rapid Urease Test and Histopathological examination.

NUMBER OF POSITIVE CASES IN BOTH GROUPS AS PER AGE DISTRIBUTION:

	ULCER DYSPEPSIA MALE	ULCER DYSPEPSIA FEMALE	NONULCER DYSPEPSIA MALE	NON ULCER DYSPEPSIA FEMALE	p value
BELOW 30YRS	4	1	4	2	
31-40YRS	2	2	5	2	
41-50YRS	5	3	3	2	0.008
51-60YRS	4	4	3	0	
ABOVE 60YRS	3	0	2	0	



Epigastric pain is the common symptom in both groups with similar statistical incidence.

Pash le R, HY Jishop showed in their study that 80-90% of the dyspeptic patients have associated symptoms of epigastric pain, anorexia, nausea, vomiting, early satiety and regurgitation.¹

Retrosternal burning sensation and post prandial fullness has similar statistical significance in both groups. Early satiety and bloating sensation is more common in ulcer dyspepsia patients. Vomiting symptom has similar statistical in-

cidence in both groups.^{2,3}

Hemetemesis complaint has more incidence in ulcer dyspepsia group. Positive cases for Rapid urease test is similar statistically and in incidence in both groups (28% in ulcer dyspepsia and 23% in non ulcer dyspepsia groups)⁴ and is equally efficacious in detecting *Helicobacter pylori* on Histopathological examination.⁴

Histopathological examination of positive *H. Pylori* has similar statistical incidence in both groups. *Helicobacter pylori* has more preponderance in male gender in both ulcer dyspepsia group (18 male, 10 female) and non ulcer dyspepsia group (17 male, 6 female). The higher number of males in dyspepsia group was also observed by Rocar and Pursey (34 males and 21 females).⁵

Age groups of 31-40yrs and 41-50yrs are presenting with dyspepsia more commonly in the study. This was consistent with the study of Jones RH and Lydeard SE.^{6,7} More number of people are positive in age group of 41-50yrs. In ulcer dyspepsia cases most common endoscopy finding with positive status is gastric ulcer. Kachintorn U, Luengrojankul P, Atisook K, Theerabutra C, Trawandee T, in their study showed patients with upper gastrointestinal symptoms, to determine the prevalence of *Helicobacter pylori* infection and to investigate their association with histological gastritis. The overall prevalence of *H. pylori* was 63.3%. Duodenal ulcer has the highest prevalence rate of *H. pylori* infection (66%), gastric ulcer was less frequently associated with *H. pylori* infection (55%). In contrast none of these patients seen with normal antrum had *H. pylori* infection.^{6,7}

CONCLUSION

In total study of 200 patients with dyspepsia who underwent upper GI endoscopy and biopsy were subjected to rapid urease test and histopathological examination, similar statistical incidence was found in both groups. Both rapid urease test and histopathological examination had same results for *Helicobacter pylori* incidence, proving both tests are good for diagnosing *Helicobacter pylori* infections. Male gender had more statistical incidence of dyspepsia and *Helicobacter pylori* incidence in both groups. Age group of 31-40yrs and 41-50yrs had more incidence of dyspepsia and *Helicobacter pylori* positive cases. Epigastric pain, retrosternal burning pain, postprandial fullness, bloating sensation, vomiting, malena were the main complaint of patients in both groups. In this study we found that it is better to consider treating non ulcer dyspepsia patients with *Helicobacter pylori* treatment as prevalence of *Helicobacter pylori* is similar in both ulcer dyspepsia and non ulcer dyspepsia groups.

Gastric Ulcer on endoscopy

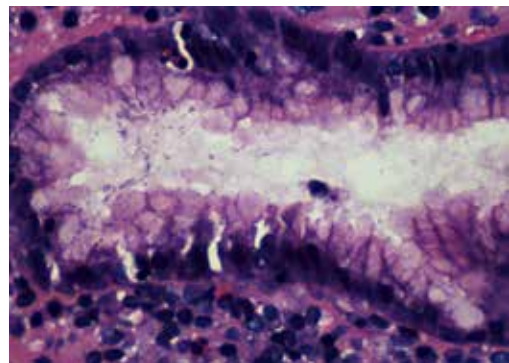


UREASE SOLUTION WITH BIOPSY BIT INOCULATED AND PHENOL RED ADDED

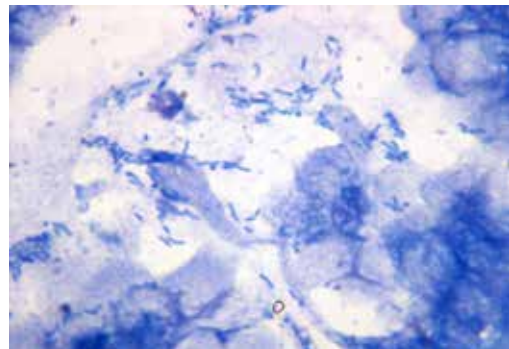


Positive Urease test

Microphotograph showing *Helicobacter pylori* in the fooveolar lumen. H&E, x400



Microphotograph showing *Helicobacter pylori*. Giemsa, x1000



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