Original Article

ROLE OF RAPID UREASE TEST IN DIAGNOSIS OF H PYLORI INFECTION

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Abstract

The gastrointestinal disease Helicobacter pylori causes includes chronic antral gastritis, gastric ulcers, duodenal ulcers, gastric adenocarcinomas, and non-lymphoma. The majority of infected patients are still asymptomatic. It is well recognised that pathogenicity factors like the proteins encoded by the cagA and vacA genes influence the appearance of disease.

Objective: To find the incidence of H.pylori by Rapid urease test.

Methods: Study area: Surgery department of Meenakshi medical college hospital and research institute.
Study design : Cross-sectional.
Study sample: 100 patients
Study population: Patients with complaints of chronic abdominal or epigastric pain and willing to undergo upper GI endoscopy.

Results: RUT testing can also be done and is especially helpful in difficult diagnostic situations when the physician would like to start treatment soon. As such biopsies for RUT are often taken in patients with recent upper gastrointestinal bleeding. In this situation, there may be an increased prevalence of false negative results. False negative tests are also common after partial gastrectomy probably because of reduced bacterial load often related to the presence of bile. As such false negative results have little clinical importance unless they are accepted as proof of the absence of an H. pylori infection.

Introduction

Helicobacter pylori (H. pylori) is a major human pathogen which causes progressive gastroduodenal damage. Guidelines recommend that, unless there are compelling reasons to delay, treatment is indicated for all patients in whom the infection is diagnosed. The rapid urease test (RUT), which quickly, affordably, and easily determines whether urease is present in or on the gastrointestinal mucosa is a common diagnostic procedure. There are various variants that have been approved for use in humans, and the sensitivity and specificity are often high.

False-negative outcomes may be caused by the use of proton pump inhibitors, antimicrobial medications, intestinal metaplasia, and these factors combined. Helicobacter pylori (H. pylori) is an important human pathogen involved in the pathogenesis of atrophic gastritis, gastroduodenal ulcer, gastric cancer, MALT lymphoma, idiopathic thrombocytopenic purpura, iron deficiency anemia and vitamin B12 deficiency.

Materials and Methods

Study Subjects: Patient with complaint of chronic abdominal pain or epigastric pain or clinical features of ulcer and willing to go upper GI endoscopy

Study Design: Cross sectional

Study period: Sep 2020 to Aug 2022

Study setting:Meenakshi medical college hospital and research institute, Kanchipuram.

Inclusion criteria:

- Age 20-70 years
- Symptoms of GERD

Exclusion criteria:

- Age < 20 or > 70 year
- anemia (serum hemoglobin level < 10 g/dL)
- severe systemic disease or advanced chronic liver disease
- use of certain medications, including proton pump inhibitors, H2-receptor antagonists, or antibiotics; a history of H. pylori eradication; a history of gastric surgery
- Recent history of upper gastrointestinal bleeding
- Diagnosed with carcinoma stomach.

Sample size: 100

RESULTS

TAB.1: AGE DISTRIBUTION OF STUDY PARTICIPANTS

Age category	Frequency	Percent
20-30	11	11.0
31-40	21	21.0
41-50	28	28.0
51-60	26	26.0
61-70	14	14
Total	100	100.0

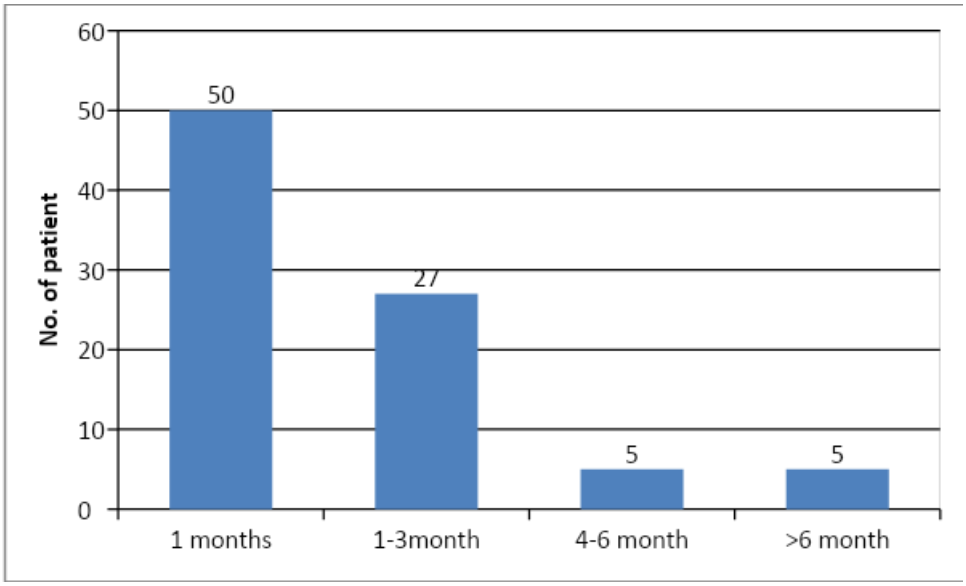
The mean +/-S.D of age is 45.6+/-11.1 years. The age distribution shows that the majority of the population are of age between 40-60 years.

Tab.2: Distribution as per the presenting complaint (N=100)

Complaint	n	%
Abdominal pain	38	38
Epigastric pain	57	57
Dyspepsia	17	17
Bloating sensation	12	12
Black colored stools	4	4
Nausea/vomiting	17	17

The above table shows the distribution of presenting complaints. Epigastric pain is found to be the most common complaint followed by abdominal pain. 8 patients had both abdominal and epigastric pain

Fig.3 : Distribution of duration of pain



Majority of the participants had acute onset of pain with 60.9%. 27.5% had insidious onset and 11.48% had chronic pain.

Fig,4 :Antacid, spicy food intake, smoking and alcohol distribution

Risk factors	n	%
Yes	21	21
No	79	79
Total	100	100

In the above table, 21% had risk factors of smoking, alcohol, spicy food intake and antacid abuse over the counter for complaints.

Tab.5: Rapid urease test result distribution

Rapid urease test	n	%
Positive	71	71
Negative	29	29

Around 71% had positive rapid urease test positive results which shows the prevalence of H.pylori presence.

Tab.6: Association of upper GI endoscopy finding with Rapid urease test

			Rapid urease test		Total	p value
			Negative	Positive		
Endoscopic finding	ANTRAL GASTRITIS	n	3	8	11	0.003
		%	27.3%	72.7%	100.0%	
	AP GASTRITIS	n	6	16	22	
		%	27.3%	72.7%	100.0%	
	DUODENITIS	n	0	7	7	
		%	0.0%	100.0%	100.0%	
	ESOPHAGITIS WITH PANGASTRITIS	n	2	7	9	
		%	22.2%	77.8%	100.0%	
	GASTRIC EROSION	n	4	9	13	
		%	30.8%	69.2%	100.0%	
	LOWER OESPHAGITIS	n	0	2	2	
		%	0.0%	100.0%	100.0%	
	NORMAL	n	7	4	11	
		%	63.6%	36.4%	100.0%	
	PANGASTRITIS	n	7	18	25	
		%	28.0%	72.0%	100.0%	
Total		n	29	71	100	
		%	29.0%	71.0%	100.0%	

63.6% of patients with normal endoscopic finding has negative rapid urease test . All patients with lower esophagitis and duodenitis were positive for RUT. Around 72.7% of antral and AP gastritis, 77.8% of oesophagitis with pangastritis and 72% of pangastritis had significantly higher proportion showing RUT positive.

DISCUSSION

There are many invasive and non-invasive diagnostic techniques available. Each of these methods has advantages and disadvantages that will determine how suitable it is in a specific therapeutic situation. It is now clear that focusing just on the top diagnostic instrument would oversimplify the discussion of the many diagnostic procedures.

Treatment with Helicobacter pylori reversed the symptoms in patients with chronic, non-specific gastritis.

Relapses of peptic ulcers decrease from 80% in people with persistent Helicobacter infection after receiving medical treatment to 1% to 3% when H. pylori is eliminated.

Despite the findings discussed above, there is still no evidence linking Helicobacter pylori infection to peptic ulcer disease, and many Helicobacter pylori carriers did not develop the condition.

CONCLUSION

According to the present study , 71% of patients with acid peptic disorder had H. pylori, which was shown to be a rather high incidence. The diagnosis is made by Rapid urease test. And also There was a statistically significant association was found between rapid urease test and Upper gastric endoscopy findings. Our study shows that Rapid urease test which is a rapid, cheap and simple test that is used frequently in clinical practice can be used in diagnosis of H.Pylori infection so that early management of ulcer can be initiated.

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