

Original Research Article

Morphology of abdominal pain: the inside story; investigation of abdominal pain and its correlation with endoscopy and *H. pylori* status

M. K. Saxena¹, Rooman Ahmad Rana^{1*}, Ashutosh Gupta¹, Ausaf Ahmad²

¹Department of Surgery, ²Department of Community Medicine, Integral Institute of Medical Sciences and Research, Kursi Road, Lucknow, Uttar Pradesh, India

Received: 01 March 2019

Revised: 02 April 2019

Accepted: 03 April 2019

***Correspondence:**

Dr. Rooman Ahmad Rana,

E-mail: njmsonline@gmail.com

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ABSTRACT

Background: Pain in the abdomen especially upper abdomen is a common presentation in any clinicians OPD. It has a significant effect on the quality of life of the individual. Moreover, it is essential to exclude presence of *H. pylori* infection since it is known to have carcinogenic effect, as well as the propensity to develop duodenal ulcer. This study was undertaken to understand the association of the above-mentioned symptoms with endoscopic findings and with *H. pylori* infection, and to find out if there is significant correlation between the above-mentioned symptoms and presence or absence of *H. pylori* infection.

Methods: This is a retrospective descriptive study based on the upper GI endoscopies carried out in the institution. The period covered was from 01 January 2018 to 31 December 2018. The inclusion and exclusion criteria were well defined. Data on patients presenting with symptoms of Gastritis, dyspepsia, epigastric pain and upper abdomen pain was studied.

Results: The study showed association between age and *H. pylori* infection though it was not found to be statistically significant. The association between significant endoscopic finding and *H. pylori* was statistically significant ($p > 0.05$) epigastric pain as a symptom was found to have strong Statistical significance with presence of *H. pylori* ($p < 0.05$).

Conclusions: Patients presenting with the symptoms of Gastritis, dyspepsia, epigastric pain and upper abdomen pain be investigated and endoscopy and biopsy for *H. pylori* should be part of protocol for their management.

Keywords: Endoscopy, Dyspepsia, Epigastric pain, Gastritis, Upper abdomen pain, *H. pylori*

INTRODUCTION

Pain abdomen is one of the commonest symptoms that brings a patient to a clinician's OPD. Upper abdomen pain is, in most of instances due to dyspepsia, when it is associated with certain other features commonly ascribed to indigestion, Gastritis the feeling of burning sensation colloquially described by patient as acidity, a simple epigastric pain which may or may not be associated with any other symptoms, or a simple generalized pain all over

upper abdomen, and may have its origin in a gastric, gastroduodenal, or gall bladder pathology.

Dyspepsia is one of the commonest complaints that a clinician encounter in his OPD. It is reported to be 4-5% of General Practitioners consultation, and 20-40% of Gastroenterologists' consultation.¹

However, it is not easy to define the term Dyspepsia. Different studies refer to different conglomerate of

symptoms. Most commonly it refers to symptoms of Pain epigastrium, nausea, vomiting, heartburn, or any symptom referable to proximal Alimentary tract.²

Cases of dyspepsia, who may not have a demonstrable organic cause, but the patient still reports symptoms are classified as cases of Functional dyspepsia. The conditions required to be met for it to be called functional dyspepsia are as per Roman III classification, these are the patients who meet following criteria:

Postprandial fullness, early satiety, epigastric pain or burning and no evidence of structural disease that is likely to explain the symptoms. Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.³

Ford et al in a systematic review found that ~20% of the population has symptoms of dyspepsia globally. They found a higher incidence in women, smokers, and those taking non-steroidal anti-inflammatory drugs.⁴

Although these symptoms may not affect the longevity of patients but they definitely affect the quality of life.

It has been suggested from a number of studies that presence of *H. pylori* is associated with a spectrum of gastrointestinal conditions like gastritis, dyspepsia, epigastric pain, and Cancer.⁵⁻⁸

The symptoms are investigated by various modalities like Ultra sound studies, serologic studies and endoscopy. Endoscopy has the advantages over other modalities in form of seeing the morphologic patterns under vision, as well as taking Biopsy and identifying presence or absence of *H. pylori* in real time so that treatment could be instituted immediately.

The challenges one faces in a resource challenged community, is non-availability of resource like Endoscopy in rural areas, remote areas, and is there some way one can find association between symptoms that are considered indications for endoscopy and the endoscopic findings.

The second challenge is with *H. pylori* being present in the community in almost 50% of cases, what could be the conditions where *H. pylori* eradication treatment would be successful.

This study was carried out in patients suspected to be suffering from abdominal symptoms that are commonly referred to as Dyspepsia and upper abdominal pain.

- To understand the association of the above-mentioned symptoms with Endoscopic findings and with *H. pylori* infection.
- To find out if there is significant correlation between the above-mentioned symptoms and presence or absence of *H. pylori* infection.

METHODS

This study was conducted by Department of Surgery, at Integral Institute of Medical Sciences and Research, Lucknow

This is a retrospective descriptive study based on the upper GI endoscopies carried out in the institution. The period covered was from 01 Jan 2018 to 31 Dec 2018.

Patients with symptoms of dyspepsia, difficulty in swallowing, blood in vomiting, unexplained weight loss, loss of appetite, upper abdominal discomfort were included in the study. Who attended the gastroenterology outpatients section and also patients referred from other wards, screened by Gastroenterologist for upper GI endoscopy, were the subjects of this study?

The data was classified based on the age group, gender, types of diseases the diagnosis, and presence or absence of *H. pylori*.

The findings were classified under following heads and analysed accordingly:

- Demographics of the patients with *H. pylori* infection.
- Association between symptom and endoscopic findings
- Association of endoscopic abnormalities with *H. pylori*

Statistical Analysis was carried out using Microsoft Excel program and SPSS Version 16.0.

Inclusion criteria

All the patients who underwent endoscopy during the period covered were included in the study.

Exclusion criteria

The cases where the data on *H. pylori* was missing or incomplete were excluded from the study.

Primary outcome

This study would help us to know if there is a correlation between the symptoms and signs, especially the ones which are broadly covered as dyspepsia and upper abdominal pain with endoscopy and Presence or absence of *H. Pylori*.

RESULTS

It would be seen that in this study, the maximum number of *H. pylori* positive cases were detected in patients aged between 41-50 closely followed by age group 31-40 (Table 1). However, when we do the intra group analysis of incidence of cases in different age groups testing

positive for *H. pylori*, it becomes obvious that within the different age groups the age group 61-70 years has highest percentage of *H. pylori* cases, followed by age group 21-30 years. However, it is not significant in terms of statistics.

Table 1: Age wise distribution of *H. pylori* positive cases.

Age Group	Age in years	<i>H. Pylori</i>	
		Positive	Negative
	Not Available	6 6.5%	14 16.9%
	01-10	0 0%	1 1.2%
	11-20	11 12.0%	9 10.8%
	21-30	22 23.9%	12 14.5%
	31-40	20 21.7%	17 20.5%
	41-50	11 12.0%	12 14.5%
	51-60	13 14.1%	6 7.2%
	61-70	7 7.6%	9 10.8%
	>71	2 2.2%	3 3.6%
	Total		92 100.0%

Chi square=10.221, p=0.250.

Table 2: Gender wise distribution of *H. pylori* positive cases.

Gender	<i>H.Pylori</i>		Chi square, P value
	Positive	Negative	
Male	42 45.7%	47 56.6%	2.10, 0.147
	50 54.3%	36 43.4%	
Female	92 100.0%	83 100.0%	

In terms of Incidence of cases testing positive for *H. Pylori*, based on gender it would be seen that while in case of males the percentage is 45.7%, in females it is 54.3% (Table 2).

However, it is not significant in terms of statistics.

Correlation of symptoms with positive endoscopic findings

It would be seen in the results of this study that these symptoms have a significant association with abnormal

endoscopic findings. It was brought about in this study that patients presenting with symptoms of

When we analysed association between symptoms and endoscopic findings, in terms of all patients (Table 3), it was seen that 21.4% of cases presenting with dyspepsia had normal study. In terms of positive endoscopic findings, pan gastritis and reflux oesophagitis was found in 21.4% cases each. Hiatus hernia was cause of dyspepsia in 14.3% of cases while antral gastritis and gastroduodenitis, were the cause of symptoms of dyspepsia in 7.1% of cases each (Table 3).

Analysis of cases presenting with epigastric pain revealed that most of these cases were found to have pangastritis (36%) on endoscopy. The other findings associated with this symptom were antral gastritis in 14.6% of cases, and gastroduodenitis in 9% of cases.

14.6% of cases presenting with this symptom had normal study on endoscopy (Table 3).

Analysis of endoscopic findings in cases presenting with Symptoms of nausea, uneasiness, indigestion, and pain commonly conveyed by patient as gastritis, revealed that in as many as 23.1% had a normal study on endoscopy.

41% of such patients were found to have pan gastritis, while 15.4% had antral gastritis.

12.85% of such patients had gastroduodenitis (Table 3).

It was found that in cases of patients presenting with unspecified upper abdominal pain, 39.4% of cases had no abnormality detected on endoscopy. At the same time, a similar 39.4% patients were found to have pan gastritis (Table 3). An inference may be drawn that the patients presenting with this symptom have a 50% chance of having pan gastritis.

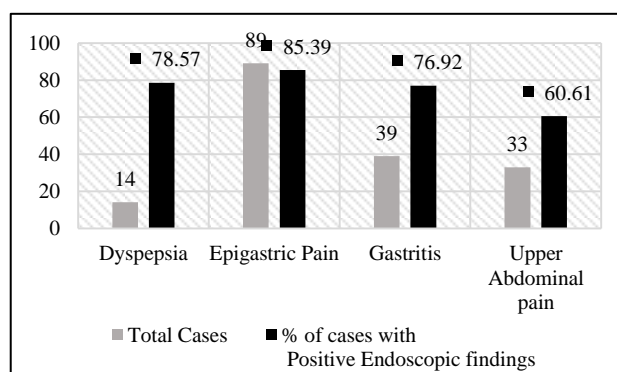


Figure 1: Correlation of symptoms with positive endoscopic findings.

Interestingly, when we analysed cases with positive endoscopic findings within the subgroup of symptoms, interesting findings emerged. It was shown that in patients presenting with dyspepsia 78.57% had positive

findings on endoscopy. Of the 89 patients presenting with Epigastric pain 85.39% had positive findings on endoscopy. 76.92% of cases who presented with symptoms of gastritis, revealed positive endoscopy findings. 60.61% of cases presenting with upper abdominal pain had positive finding (Figure 1).

Correlation of positive endoscopic findings with *H. pylori*

Table 3: Correlation of positive endoscopic findings with detection of *H. pylori*.

		Endoscopic abnormalities		Chi square P value
		Present	Absent	
Biopsy	Positive	79 57.7%	13 34.2%	6.56, 0.01
	Negative	58 42.3%	25 65.8%	
Total		137 100.0%	38 100.0%	

When we analysed the data for correlation between cases which yielded positive findings on endoscopy with detection of *H. pylori* on Biopsy, we found that positive endoscopy findings were present in 57.71% of cases. In cases where *H. pylori* was not detected, 42.3% of cases had positive endoscopic findings whereas in 65.8% of cases the endoscopy was normal.

This was found to be statistically significant with a chi square value of 6.56 and p value of 0.01.

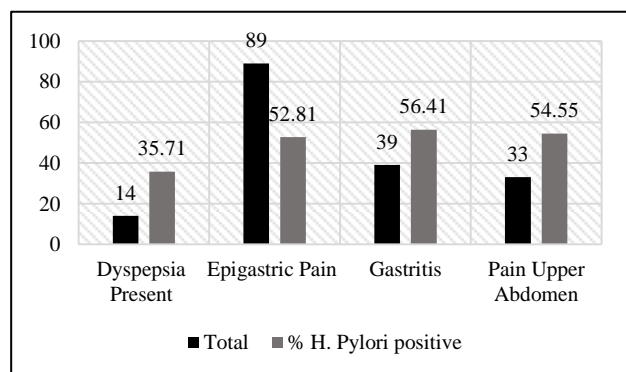


Figure 2: Association of symptoms with *H. pylori*.

It was seen in this study that 35.71% of cases that presented with symptoms of dyspepsia, were detected to be positive for *H. pylori*. In case of patients presenting with epigastric pain, this figure was 56.41%, and in case of gastritis and pain upper abdomen it was 56.41% and 54.55% respectively.

When we look at overall symptoms, and consider them in the backdrop of their correlation with *H. pylori* status of the patients, it would be seen that epigastric pain has a

statistically significant correlation, with a p value of 0.004 in cases where epigastric pain is present as well as the patient is positive for *H. pylori* (Table 4).

Table 4: Association of symptoms with *H. pylori*.

Symptom	Biopsy for <i>H. Pylori</i>		χ^2 value, P value	
	Positive	Negative		
	N (%)	N (%)		
Dyspepsia	Present	5 (5.4)	9 (10.8)	1.73, 0.18
	Absent	87 (94.6)	74 (89.2)	
Epigastric pain	Present	47 (51.1)	42 (50.6)	0.004 0.94
	Absent	45 (48.9)	41 (49.4)	
Gastritis	Present	22 (23.9)	17 (20.5)	0.297, 0.58
	Absent	70 (76.1)	66 (79.5)	
Pain upper abdomen	Present	18 (19.6)	15 (18.1)	0.064, 0.80
	Absent	74 (80.4)	68 (81.9)	

DISCUSSION

When we analysed the results, we found that there is no statistical correlation of age and gender with the endoscopic findings or presence or absence of *H. pylori*. However, when we looked at the association it turned out that maximum incidence of *H. pylori* cases within age groups, was found in the age group 61-70 years followed by 21-30 years, the fact is that *H. pylori* is a known carcinogen, and younger people testing positive for *H. pylori* are at greater risk.⁹

While it is true that *H. Pylori* infection does not reveal any gender predilection, as we also find in our study, it does not explain why there is a male predilection. Khan et al suggest that it may be that *H. Pylori* at best plays role of a co-factor causing changes in the gastric mucosa that makes it more vulnerable for carcinogenesis.¹⁰

In terms of association of symptoms, we find that in our study, dyspepsia did not reveal statistically significant correlation with presence or absence of *H. pylori*. When we reviewed the literature, we find that there is quite a bit of inconsistency regarding this association.¹¹

However, there are some studies which support a link between other symptoms such as postprandial bloating.¹²

In our study, we do find statistically significant correlation between symptom of Epigastric pain and *H. pylori* with a p value of 0.004. Tucci et al have also reported similar correlation in their study.¹³

In terms of correlation between presence of *H. pylori* and significant positive finding on UGIE, strong statistical significance was observed with chi square value of 6.56 with a p value of 0.001. What this implies is, that in presence of significant finding on UGIE especially pangastritis or gastroduodenitis, it should be, mandatory to take a biopsy and test for presence of *H. pylori*.

CONCLUSION

The spectrum of symptoms referable to upper abdomen in form of epigastric pain, dyspepsia, gastritis, and generalized upper abdomen pain, needs to be investigated by endoscopy and biopsy for *H. pylori*. In our study we found strong correlation between Positive endoscopic findings and *H. pylori*, as well as between symptom of epigastric pain and presence of *H. pylori*.

It is recommended that in presence of these features all the cases should be investigated by endoscopy and biopsy.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Saxena MK, Rana RA, Gupta A, Ahmad A. Morphology of abdominal pain: the inside story; investigation of abdominal pain and its correlation with endoscopy and *H. pylori* status. *Int Surg J* 2019;6:1740-4.