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Original Research Paper

General Surgery

PREVALENCE OF HELICOBACTER PYLORI IN NON-ULCER DYSPEPSIA PATIENTS

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ABSTRACT

BACKGROUND: Helicobacter pylori had unquestionably been observed by a number of workers since **Birchers** first description in 1874. **Luck JM, Seth TN** in 1924 documented urease activity in the human stomach. It was thought that this urease activity originated in gastric mucosal cells and was not associated with the presence of bacteria.

AIMS AND OBJECTIVE: 1.To know the prevalence of Helicobacter pylori in non-ulcer dyspepsia patients and to know the prevalence of Helicobacter pylori in different clinical sub-groups of non-ulcer dyspepsia.

METHODS AND MATERIALS: study was conducted in Post-graduate Department of Surgery in Govt. Medical College Jammu over a period of one year. Patients with non-ulcer dyspepsia, who attended the Department of Surgery either outpatient department or indoor, were subjected to this study. Diagnosis of patients was made from the history of patients and upper G.I. endoscopy. Overall seventy patients of non ulcer dyspepsia formed the material of the study. . Ultrasonography of abdomen was done to rule out any pathology responsible for dyspepsia.

RESULT: The maximum numbers of non ulcer dyspepsia patients were seen in 4th decade of life followed by 3rd and 5th decade of life. 25.71% of cases were seen in 4th decade of life while 24.29% & 21.42% of cases were seen in 3rd & 5th decade of life respectively. The prevalence of H. pylori infection increases with age. Among 33 H. pylori positive patients, 7 patients are in 3rd decade while 9, 8 and 6 patients are in 4th, 5th & 6th decade respectively. Prevalence of H. pylori infection in each age group increases with each decade 41.18%, 50%, 53.33%, 60% cases in 3rd, 4th, 5th & 6th decades respectively.

CONCLUSION: Maximum percentage of non ulcer dyspepsia patients was in third decade. Prevalence of H pylori infection increased with age. Prevalence of H pylori in males and females was not significantly different. Prevalence of H pylori in lower socio-economic class was significantly different from middle and upper classes suggesting that poor hygiene and overcrowding are responsible for increased prevalence of H pylori in patients of lower socio economic status.

KEYWORDS : Dyspepsia, Helicobacter pylori, GERD, Peptic ulcer.

INTRODUCTION:

Dyspepsia, meaning bad digestion, is a medical condition characterized by chronic or recurrent pain in the upper abdomen, upper abdominal fullness and feeling of fullness earlier than expected when eating. It can be accompanied by bloating, belching, nausea or heartburn. Dyspepsia is one of the most common symptoms bringing the patient to the physician according to Tally [1]. Dyspepsia is fourth ranking symptom presenting for diagnosis in primary care. Surveys in western societies have recorded prevalence between twenty one to forty five percent [2, 3, and 4].

Dyspepsia symptoms have been classified as reflux or ulcer or dysmotility. In patients with dyspepsia who are investigated, four major causes can be identified for their complaints- 1. Chronic peptic ulcer disease 2. Gastroesophageal reflux disease (with or without esophagitis) 3. Malignancy 4. Functional (non ulcer) dyspepsia.

Non ulcer dyspepsia is defined as chronic or recurrent pain or discomfort centred in the upper abdomen at least for three months where there is no clinical, biochemical, ultrasonography or endoscopic evidence of known organic disease that is likely to explain these symptoms [5]. Various investigators have shown that evidence of non ulcer dyspepsia ranges from 7-38% among individuals with all types of dyspepsia. About 40% of all types of dyspepsia occur in patients younger than 25 and 3-7% of all cases occur in patients older than 60. Non ulcer dyspepsia has been associated with positive family history of dyspepsia and that of peptic ulcer disease [6]. Rome II diagnostic criteria for functional dyspepsia, based on consensus opinion of an international panel of clinical investigators, [7] are as follows:

(1) One or more of (a) Post-prandial fullness (b) Early satitation. (c) Epigastric pain (d) Epigastric burning.
(2) No evidence of structural disease (including at upper gastrointestinal endoscopy) that is likely to explain the symptoms. (3). No evidence that dyspepsia is exclusively relieved by defecation or associated with onset of a change in stool frequency or stool form (irritable bowel syndrome). Non-ulcer dyspepsia is sub-categorised into ulcer-like, dysmotility like and non-specific dyspepsia [8, 9].

Ulcer like dyspepsia: Three or more of the following are necessary, but upper abdominal pain must be a predominant complaint:

1. Pain that is well localised in the epigastrium. 2. Pain relieved by food, often (more than 25% of the time). 3. Pain relieved by antacids and/or H2 blockers, often.4.Pain occurring before meals or when hungry, often.5. Pain that at times wakes the

patient from sleep. 6. Periodic pain with remissions and relapses.

Dysmotility like dyspepsia: Pain is not a dominant symptom; upper abdomen discomfort should be present in all cases. This discomfort should be chronic and characterised by three or more of the following: 1. Early satiety 2. Postprandial fullness. 3. Nausea 4. Retching and/or vomiting that are recurrent. 5. Bloating in the upper abdomen not accompanied by visible distension. 6. Upper abdominal discomfort often aggravated by food.

Unspecified dyspepsia (non-specific): Dyspeptic patients whose symptoms do not fulfil the criteria for ulcer like and dysmotility like dyspepsia.

Reflux type dyspepsia: Dyspepsia with predominant feature heart burn. Many of these patients may actually have GERD.

AIMS AND OBJECTIVE:

Our study is undertaken with intent to know the prevalence of Helicobacter pylori in non ulcer dyspepsia patients through histopathological examination and rapid urease test of biopsy. 1. To know the prevalence of Helicobacter pylori in non-ulcer dyspepsia patients. 2. To know the prevalence of Helicobacter pylori in different clinical sub-groups of non-ulcer dyspepsia.

MATERIAL AND METHODS:

This study was conducted in Post-graduate Department of Surgery in Govt. Medical College Jammu over a period of one year. Patients with non-ulcer dyspepsia, who attended the Department of Surgery either outpatient department or indoor, were subjected to this study. Diagnosis of patients was made from the history of patients and upper G.I. endoscopy. Overall seventy patients of non ulcer dyspepsia formed the material of the study.

A detailed history was taken and thorough clinical examination was done according to the Performa. Patients were subjected to routine investigations. Ultrasonography of abdomen was done to rule out any pathology responsible for dyspepsia.

INCLUSION CRITERIA:

Patients were subjected to upper G.I. endoscopy to rule out any organic cause for dyspepsia like erosions, ulcers, growth etc. Patients having normal gastric mucosa or having features of gastritis without erosions were included in the study.

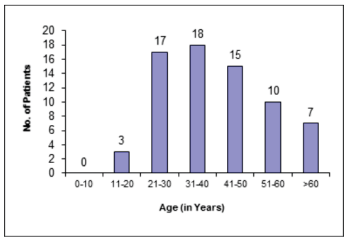
Endoscopic biopsy was taken from body and antrum of stomach and was studied for Helicobacter pylori by histopathological examination of specimen using haematoxylin and eosin and special stains such as Giemsa stain. Biopsy was also subjected to rapid urease test to check for urease activity of Helicobacter pylori. After taking the biopsy from gastric mucosa, specimen was immediately subjected to rapid urease test using rapid urease test kit. This kit contains urea in agar along with phenol red with an acidic P^H. Biopsy was inoculated into the medium and kept at room temperature. The change in colour from yellow to pink was taken as positive. Mostly the colour change occurred within one hour in positive cases.

OBSERVATION: In this study, following observations were made:

Table – 1: Age distribution.

Age	No. of Patients	Percentage
0-10	0	0
11-20	3	4.29
21.30	17	24.29
31-40	18	25.71
41-50	15	21.42
51-60	10	14.29
>60	7	10
Total	**70**	**100**

Fig. : Showing Age distribution of patients.

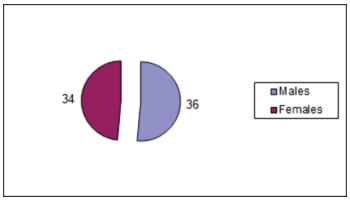


Maximum numbers of patients of NUD were recorded in the 4th decade of life followed by 3rd and 5th decade of life. There were 25.71% of cases in 4th decade, 24.29% in 3rd decade and 21.42% in 5th decade.

Table –2: Sex Distributions:

Sex	No. of Patients	Percentage
Males	36	51.43
Females	34	48.57
Total	**70**	**100**

Fig. 2: Showing sex distribution of patients



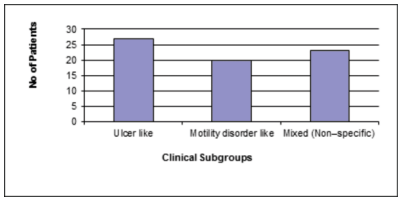
51.43% were males and 48.57% were females thus giving male to female ratio of 1.059.

Table – 3: Distribution according to symptoms into clinical subgroups:

Subgroup	No. of patients	Percentage
Ulcer like	27	38.57
Motility disorder like	20	28.57
Mixed(Non – specific)	23	32.86
Total	**70**	**100**

The distribution of patients according to their symptoms into three clinical subgroups are as follows:

Fig. 3-: Showing distribution of patients into clinical sub groups



So patients in ulcer like subgroup are more compared to non specific subgroup & patients in non specific subgroup are more compared to those in motility disorder like subgroup.

Table – 4: (NSAID Incidence) Incidence of drug intake (NSAIDS and proton pump inhibitors):

NSAIDS Intake	No. of Patients	Percentage
H/o NSAIDS intake	12	17.14
No. H/o NSAIDS intake	58	82.86
Total	**70**	**100**

Fig. 4: Showing distribution according history of NSAIDS intake.

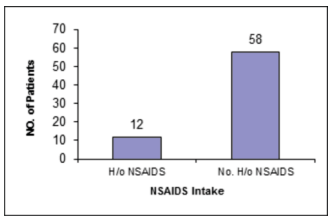
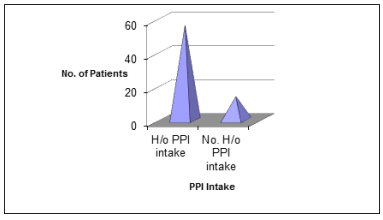


Table – 5: PPI Intake Incidence.

PPI Intake	No. of Patients	Percentage
H/o PPI intake	56	80
No. H/o PPI intake	14	20
Total	**70**	**100**

Fig. 5: Showing distribution according history of PPI intake

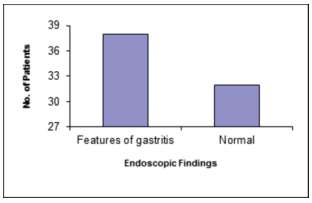


Only 17.14% of patients were using NSAIDS. While 80% of patients were using proton pump inhibitors. One Patient was using Benzodiazipines (Alprazolam).

Table – 6: Distribution according to endoscopic findings:

Endoscopic Findings	No. of Patients	Percentage
Features of gastritis	38	54.29
Normal	32	45.71
Total	**70**	**100**

Fig. 6: Showing distribution according to Endoscopic findings.



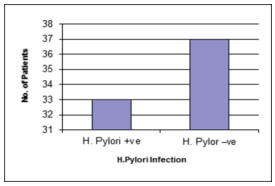
45.71% of patients were having normal mucosa while 54.29% of patients having gastritis.

Histopathology and rapid urease test for H. pylori: Rapid urease test was done immediately after taking biopsy using rapid urease test kit. Results were noted by colour changes. While histopathology examination was done by haematoxylin and eosin and using special stains like Giemsa stain.

Table-7: Rapid urease test.

No. of H. pylori +ve/ -ve patients	Rapid Urease test	HPE	Total (including both tests)
No. of H. pylori +ve patients	28	31	33
No. of H. pylori –ve patients	42	39	37
Total	**70**	**70**	**70**

Fig.7: Showing H.pylori +ve and –ve Patients.



By histopathological examination using special stains, 31 patients were positive for H. pylori and 39 were negative for H. pylori while by rapid urease test 28 patients were positive and 42 were negative. Two patients were positive by rapid urease test alone, five patients were positive by histopathology alone and twenty six patients were positive by both tests. Final result was considered positive if either histopathology for H. pylori was positive or rapid urease test was positive or both were positive. Overall 33 patients were positive for H. pylori and 37 patients were negative for H. pylori, so percentage of H. pylori positive patients was 47.14%. H. pylori positive patients are more in lower socio-economic class compared to middle socio-economic class and upper socio-economic class. 70.83% patients of lower class are H. pylori positive while 36.36% and 30.77% of middle and upper classes are H. pylori positive respectively.

RESULT:

The maximum numbers of non ulcer dyspepsia patients were seen in 4th decade of life followed by 3rd and 5th decade of life. 25.71% of cases were seen in 4th decade of life while 24.29% & 21.42% of cases were seen in 3rd & 5th decade of life respectively. The prevalence of H. pylori infection increases with age. Among 33 H. pylori positive patients, 7 patients are in 3rd decade while 9, 8 and 6 patients are in 4th, 5th & 6th decade respectively. Prevalence of H. pylori infection in each age group increases with each decade 41.18%, 50%, 53.33%, 60% cases in 3rd, 4th, 5th & 6th decades respectively.

DISCUSSION:

In this study the maximum numbers of non ulcer dyspepsia patients were seen in 4th decade of life followed by 3rd and 5th decade of life. 25.71% of cases were seen in 4th decade of life while 24.29% & 21.42% of cases were seen in 3rd & 5th decade of life respectively. Number of NUD patients was relatively less in children and patients with above 60 years of age. These findings are comparable to findings of Hassan B Abdel Hafeiz et al in 1999 who found that maximum number of non ulcer dyspepsia cases was seen in 3rd, 4th & 5th decades 27.5%, 27.5% & 18.8% respectively. In our study prevalence of H. pylori infection increases with age. Among 33 H. pylori positive patients, 7 patients are in 3rd decade while 9, 8 and 6 patients are in 4th, 5th & 6th decade respectively. Prevalence of H. pylori infection in each age group increases with each decade 41.18%, 50%, 53.33%, 60% cases in 3rd, 4th, 5th & 6th decades respectively. These findings are consistent with findings of L. Thermer et al in 1996 who found that H pylori infection rate in patients increases with age. The prevalence of non ulcer dyspepsia in two sexes was almost similar in our study with slightly increasing prevalence in males compared to females (male = 51.43% and female = 48.57%). Results are comparable with the study of Hassan B Abdel Hafeiz et al (1999) where a difference in prevalence of NUD among males and females was statistically insignificant.

CONCLUSION:

Non ulcer dyspepsia is a common disorder bringing the patient to OPD. Maximum percentage of non ulcer dyspepsia patients was in third decade. Prevalence of H pylori infection increased with age. Prevalence of H pylori in males and females was not significantly different. Prevalence of H pylori in lower socio-economic class was significantly different from middle and upper classes suggesting that poor hygiene and overcrowding are responsible for increased prevalence of H pylori in patients of lower socio economic status. Prevalence of H pylori among smokers and non smokers was not significantly different. Prevalence of H pylori is more in patients with features of gastritis on endoscopy than those with normal mucosa. This suggests that inflammatory changes are commonly present in case of H pylori infection. Overall prevalence of H pylori was 47.14%. Infectivity rate with H pylori was more in ulcer like subgroup compared to other

subgroups. So non ulcer dyspeptic patients, where predominant symptom is pain, can be benefited more with H pylori eradication treatment.

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