Original Research Paper

Surgery

PREVALENCE OF H. PYLORI INFECTION INUPPERGASTROINTESTINALDISORDERS.

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ABSTRACT

AIMS AND OBJECTIVES OF THE STUDY

1. To estimate the prevalence of Helicobacter Pylori infection among,patients in rural population with dyspeptic symptoms, undergoingUpper Gastro Intestinal Endoscopy.

2. To compute the association of H.pylori with Gastro-Intestinallesions such as gastritis, duodenal ulcer, gastric ulcer and gastriccarcinoma.

PATIENTS AND METHODS

The present study comprises of 150 patients undergoing upper gastro-intestinal endoscopy .Institutional ethical committee approval is taken.

Inclusion Criteria:- All patients above 18 years with upper GI symptom- residing in rural area.- Low socio-economic status.

A detailed history of upper abdominal symptoms was taken.

Patients are subjected to standard questionnaire and study methods. Informed consent from patients taken.After 12 hours of overnight fasting ,Mucosal biopsies were taken from the antrum of stomach and subjected to 1) Rapid urease test2) Histopathological Examination4) Blood samples tested with rapid IgG detection kits.

OBSERVATIONS & RESULTS

Total Number of Cases: 150,Gastritis – 77,Gastric Ulcer – 16,Duodenal Ulcer – 12,

Malignancy – 10,Non – Ulcer Normal individuals -35

Symptoms: Burning pain 97%,Vomitings 26%, Belchings 18%,Anorexia 9%

Signs: Epigastric Tenderness 90%Anemia 41%,abdominal pain 97%. .

Location of Ulcer: Anterior wall 58%,Posterior wall 38%,Multiple Ulcers 4%

SUMMARY AND CONCLUSIONS

1. The Endoscopic Biopsy examination prevalence in Duodenal Ulcer was 50%, gastro-duodenitis-67%, Gastric ulcer-62.5%, Malignancy 20%, and Normal Individuals-34.2%.

2. Colonization{ in Asymptomatic individuals.\ with symptoms but no significant endoscopic lesion\with symptoms and significant endoscopic lesion- Stomach malignancies.}

3. Association of H.pyloriwithupper Gastrointestinal Disorders is definite.

4. An Easy and screening method is detecting serum antibodies against H.pylori.

5. Early H.pylori eradication treatment for H.pylori avoid future complications.

6. A rational treatment inH.pylori presence is considered

KEYWORDS :

INTRODUCTION

Helicobacter pylori is an organism initially observed in 1893 and has not been recognized as an infectious agent until 1982 in the work of nobel laureates, warren and Marshall. H.pylori is a gram negative organism, grows only under micro aerophilic conditions on rich media. An interesting feature of these bacteria is their ability to adapt to harsh conditions. They are capable of becoming virtuallymetabolically inactive with minimal synthesis of DNA and RNA through a conversion from spiral into coccoid forms, offering a survival advantage in cases when chances of survival are slim to none. They colonises various regions of upper digestive

system, mainly the stomach and duodenum causing stomach and duodenal ulcers and certain cancers.**1** The nature of H.pylori and its infectious niche, the human stomach, suggests ingestion as the most likely means of acquiring this pathogen.Three routes of transmission

are being known and widely debated among researchers– oral–oral, gastro-oral or faeco–oral. The organism has a striking biochemical characteristic of abundant urease enzyme production. H.pylori have a special affinity for gastric mucosa and is etiologically associated with chronic active gastritis, peptic ulcer (duodenal and gastric) and gastric cancer. H.pylori infection is almost always acquired in childhood and usually persists throughout life unless a specific treatment is given.**2** H.pylori infects atleast 50% of the world's population and poor socio-economic status is regarded as the most important risk factor for acquisition of infection. The prevalence of H.pylori was different world-wide, however rural population is found to have more prevalence. In India, the prevalence have been reported in the range of 60 – 80%.

TABLE – I :H.pylori eradication regimens:

Sl.No	Therapy	Duration	Efficacy	Study
1 . Omeprazole Amoxicillin	40Mg/D 500Mg/qid	14 Days	50%-80%	Ozmen et-al 1994
2 Omeprazole Clarithromycin	40Mg/d 500Mg/bd	14 Days	60%-80%	Labenz et-al 1994
3 Omeprazole + Amoxycillin + Metronidazole		14Days	90%	
4 Omperazole+Clarithromycin +Tinidazole		14 Days	90%	
5 Bismuth+Amoxycillin+ Metronidaazole		14 Days	60%-90%	
6. Ranitidine+Amoxycillin +Metronidaazole		14 Days	90%	
7. Lansoprazole+Clarithromycin +Tinidazole/Metronidazole		14Days	90%	Ozmen et-al

AIMS AND OBJECTIVES OF THE STUDY -
1. To estimate the prevalence of Helicobacter Pylori infection amongpatients in rural population with dyspeptic symptoms, undergoingUpper Gastro Intestinal ndoscopy.
2. To compute the association of H.pylori with Gastro-Intestinallesions such as gastritis, duodenal ulcer, gastric ulcer and gastriccarcinomas in a medical college and teritiary Hospital in a ruralarea in Andhra Pradesh.

PATIENTS AND METHODS
The present study comprises of 150 patients (inpatients and outpatients) undergoing upper gastro-intestinal endoscopy in Nellore Government Hospital from rural area Dt Nellore . .Institutional ethical committee approval is taken.

Inclusion Criteria
• All patients aged above 18 years with upper Gastro-intestinal symptoms undergoing Upper Gastro-Intestinal Endoscopy.
• Patients residing in rural area.
• Low socio-economic status.

A detailed history of upper abdominal symptoms was taken.
These patients are then subjected to standard questionnaire prepared by us and then subjected to study methods. A detailed proforma of each patient was prepared. Every patient after taking informed consent was subjected to upper gastro intestinal endoscopy after 12 hours of overnight fasting with "Olympus" fibre optic endoscope.

Mucosal biopsies were taken from the antrum of stomach and subjected to the following tests.
1) Rapid urease test
2) Culture on Enriched Skirrow's medium
3) Histopathological Examination
4) Giemsa staining.

The blood samples from each patient were subject to Rapid Immunoglobulin detection test – using commercially available rapid IgG detection kits.

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Specimen Collection and Transport
The clinical samples were taken from patients by performing UGI Endoscopy.

1..H.PYLORI RAPID ANTIBODY DETECTION KIT
2. Rapid Urease Test,3. Isolation by Culture: Isolation of H.pylori from biopsies was done by culturing specimen on skirrow's media enriched with Vancomycin,Polymyxin and trimethoprim antibiotics. H.pylori identified by gram staining.

Growth Characteristics: H.pyloriare slow growing organisms requiring enriched culture media and humid, micro aerophilic conditions for adequate growth.

4. Histopathology and Giemsa Staining
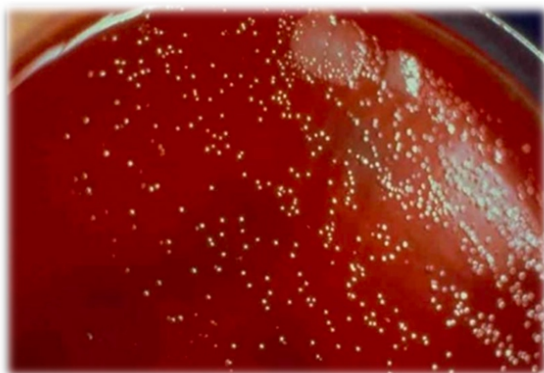
COLONIES OF H.PYLORI IN ENRICHED SKIRROW'S MEDIUM

OBSERVATIONS & RESULTS
One – fifty individuals. **The results are as follow**
Gastritis ; Fundal,Antral,Diffuse,Non – Diffuse

Gastric Ulcer: PrePyloric,JuxtaPyloric,MultipleUlcers,Associated with Gastritis,Associated with Erosions

Duodenal Ulcers: WithDuodenitis,With Duodenal Erosions,Duodenitis,Non-Ulcer Dyspepsia Malignancy

Total Number of Cases: 150(Gastritis – 77,Gastric Ulcer – 16,Duodenal Ulcer – 12

Malignancy – 10,Non – Ulcer Normal individuals -35)
→Out of 150 patients, majority were in third decade of life i.e., 28.6%. 21.3% in the

fourth decade of life, 20% in sixth decade of life,14% in fifth decade and 17.3% in second decade.

→Males were more predominant i.e., 52% when compared to 48% femal

Symptoms: Burning upper abdominal pain 97%,Vomitings 26%,Excessive Belchings 18% Anorexia 9%

Signs:
Epigastric Tenderness 90%
Anemia 41%

→Most prominent symptom among 150 cases was abdominal pain occupying 97%.

Among these cases, most common symptom is hunger pain 80% and 13% of the patients have pain immediately after taking food.

→Most prominent sign epigastric tenderness seen 90% of thecases..

Precipitating Factors:→Smoking in 70% ,→History of intake of alcohol in 38% **Location of Ulcer:** Anterior wall 58%,Posterior wall 38%,Multiple Ulcers 4%

Observations of the present study are as follows-
1) The association between H.pylori and upper GI disorders was seen in 54.6% of the cases.
2) Association between H.pylori and normal individuals was seen in 34.2% of the cases.
3) H.pylori was identified in 54.6% of the cases, out of them 67% in Gastroduodenitis patients, 20% in Malignancy patients, 62.5% in Gastric Ulcer and 50% in Duodenal Ulcer patient

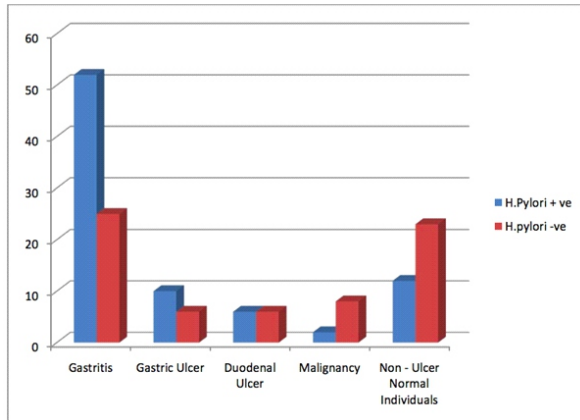**GRAPH– 1:** Distribution of study population based on Age and Sex
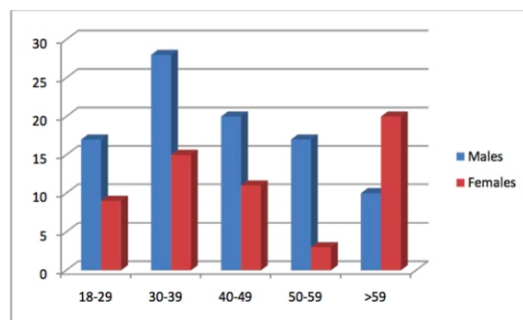
GRAPH : 2 DISTRIBUTION OF STUDY POPULATION ACCORDING TO ENDOSCOPIC DIAGNOSIS
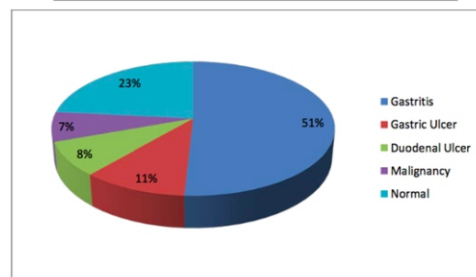
GRAPH – 3

PREVALENCE OF HELICOBACTER PYLORI

DISCUSSION
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In this study, Acid Peptic diseases were more common in younger age group i.e., 3_{rd} decade. Among the Acid Peptic disease, Gastroduodenitis (67%) was the most common followed by gastric ulcer disease (62.5%), Duodenal Ulcer Disease (50%) and Malignancy (20%) each in our study.

The occurrence of Acid peptic disease was found to be slightly higher in males in this study.

Most of the studies in developing countries noted that prevalence of H.pylori increases with age within 1st 10 years of life., however we found no significant association between age and prevalence of H.pylori infection in this study as we we have enrolled only adults in the study.The increasing prevalence of H.pylori infection with age in most of the places probably reflects the infection acquired at different ages as a result of poor sanitation facilities and hygienic practices as well as crowding during childhood.There is no doubt that improvements in the standards of living is an important factor changing the risk factors related to H.pylori infection.

The major symptoms in patients in this study were upper abdominal pain, Excessive Belchings and vomitings. Of these, burning type of upper abdominal pain was the commonest – 97%, Predominantly hunger pain (80%) in the epigastricregion.The incidence of various other factors, known to precipitate peptic ulcer was Alcoholic Beverages (90%), Spicy Foods (72%), Irregular Food Habits (70%), and Smoking(69%).

Our study has some limitations.First we were not successful in enrolling the desired number of patients diagnosed with stomach cancer.We believe this is owing to the facts related to high mortality rate among individuals diagnosed with stomach cancer in India and also to low proportion of patients diagnosed with stomach cancer seeking active treatments.Future studies need to utilize innovative strategies such as individual patient counseling and organizing patient education seminars to boost enrollment of patients diagnosed with stomach cancer into research studies.

We came across a lot of missing data for the amount of cigarettes and alcohol consumed by the participants.,owing probably to the stigma attached ,patients were reluctant to share the amount of alcohol and tobacco consumed by them.We also made attempt to elucidate the intrafamilial transmission pathways of H.pylori by enquiring about the spouses' and other family members' H.pyloristatus.Unfortunately 94% of our participants did not know the H.pylori status of their spouse or other family members..

SUMMARY AND CONCLUSIONS
The conclusions deduced from the present study are as follows:

1. The Endoscopic Biopsy examination proved that there is definite relationship betweenH.pylori and upper GI disorders. The prevalence in Duodenal Ulcer was 50%, gastro-duodenitis-67%, Gastric ulcer- 62.5%, Malignancy- 20%, and Normal Individuals- 34.2%.

2. We came to know that the spectrum of events which can occur in association of H.pylori in upper Gastro-Intestinal tract ranges from-----
- Colonization in Asymptomatic individuals.
- Colonization with symptoms but no significant endoscopic lesion
- Colonization along with symptoms and significant endoscopic lesion
- Stomach malignancies.

3. Apart from Genetic, Dietary, Neuropsychiatric causes, association of H.pylori with upper Gastrointestinal Disorders is well established and definite.

4. An Easy and screening method to detect H.pylori is with Rapid Antibody Detection kits by detecting serum antibodies against H.pylori.

5. Early Detection of H.pylori in symptomatic individuals helped to plan eradication treatment for H.pylori thus it can be eliminated to avoid future complications.

6. A rational treatment plan for patients with Upper Gastrointestinal Disorders is to be considered categorizing each patient in view of H.pylori presence instead of indiscriminate use of various Antacids, as prolonged treatment of symptomatic individuals with antacids in H.pylori presence may produce a relative low acid environment thus more ideal for H.pylori to grow and thus become a causative agent for pathologically significant lesions.