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A Study on Management of Helicobacter Pylori with Gastroduodenal Disorders

Dr. S.Ganesh Ram[1], Dr.A.Akshar[2]

[1]*Assistant Professor, Department of General Surgery ,Govenrment Karur Medical College Hospital*
[2] *Assistant Professor, Department of General Surgery , Government Karur Medical College Hospital*

Abstract: Aim: *The aim of the study was to analysis the following factors.*
1.To study the epidemiological aspects of Helicobacter pylori infection patients undergoing upper gastrointestinal endoscopy.
2.To study the epidemiological aspects of Helicobacter pylori infection.
3.It's association with specific symptomatology.
4.It's association with various gastro duodenal disorders.
Methods*: The study was conducted on 100 consecutive patients undergoing oesophagogastroduodenoscopy (OGD) IN THE Department of Surgery referred from various surgical units either for confirmation of a clinical diagnosis or for undiagnosed gastrointestinal symptomatology undergoing evaluation. None of the patients in the study group had received anti Helicobacter pylori treatment majority of patients hailed from in and around Karur City. The minimum age of the patient was 10 years and the maximum age 75 years.65% of the patients was males. The commonest age group in males was the 4th decade and in females a decade less. Most of them were farmers and casual labourers belonging to the lower socioeconomic strata.*

Results: *The age of the patients ranged from 15 years to 75 years. 53% of patients belonged to the 4th and 5th decade. The commonest age group in males was the 5th decade and in females a decade less. Best results are obtained with multi drug regiments given at least for a period of two weeks. Triple drug therapy is found to be the most effective. The drug is found to be more effective when taken with meals possibly because of longer duration of contact.*
Conclusion: *The URUT (Ultrapid Urease Test) has been found to be a simple, rapid, accurate and economically cheap method in the diagnosis of gastric, Helicobacter pylori infection. The prevalence of infection was wide spread in this region, increased with age, there was no significant sex predilection and was not associated with smoking, alcoholism, tobacco or betel chewing, tea or coffee drinking. No specific symptom was associated with Helicobacter pylori infection. Infection is highly prevalent in patients with chronic duodenal ulcers and chronic gastritis.*

Keywords: Gastroduodenitis, Oesophagitis, Helicobacter pylori ,Rapid urease test

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I. Introduction :

The Ultrapid Urease Test[43] was performed on gastric antral biopsies from 100 consecutive patients who underwent oesophagogstroduodenoscopy in the Department of Surgery at Karur. Medical College, Karur. In the year 2019, to study the prevalence of helicobacter pylori infection and it's association with gastroduodenal disorders. Through there are several reliable methods for

detection of Helicobacter pylori, they all are other experience and cumbersome to perform or need a long time for definitive diagnosis, This test provides a reliable, accurate, easy quick and economically cheap method for diagnosis of Helicobacter pylori infection with a degree of sensitivity and specificity.

Through the presence of ammonia in the stomach was identified in 1852 and urease activity 70 years later interest in further research wanted in 1960s as there was strong evidence that the gastric urease was of microbial in origin and not of stomach[14.] Spiral organisms in human stomach were firstnoted by Bottcher in 1874[24.]

The description of a unique bacteria by Warner and Marshall in 1983 in their classic article "Undenified curved bacilli on Gastric epithelium in active chronic gastritis" [46] led to rebirth of interest and the past decade has been intense research activity in defining the role of the bacteria, now called Helicobacter pylori in gastroduodenal disorders. The pathogenesis of acid peptic disorders is now being redefined. After initial skepticism no evidence exists now against the hypothesis that Helicobacter pylori causes Type B gastritis and is found to act as a cofactor in the development of duodenal ulcer. It is found to be one of the etiological factors for gastric malignancy and gastric MALT type lymphomas. Its association with gastric ulcer and non-ulcer dyspepsias is less clear[24].

BACKGROUND AND PURPOSE OF THE STUDY:

The main purpose of the study was to analyze the predisposing factors, stage of presentation, regional prevalence of gastric Helicobacter pylori infection in patients undergoing upper gastrointestinal endoscopy.

II. Materials And Methods

Study Area :

Government Medical College Hospital [KGMCH] , Karur.

Study population: 100 Patients undergoing oesophagogstroduodenoscopy in the Department of Surgery referred from various surgical units either for confirmation of a clinical diagnosis or for undiagnosed gastrointestinal sympomatology undergoing evaluation**.** in KGMCH.

Inclusion criteria:

1. Patients diagnosed to have Gastroduodenal symptums..
2. Patients above 10 years
3. Patients who are willing for operative procedure for peptic ulcers
4. Patients willing for follow up.
5. Patients willing for Endoscopy / Biopsy.

Exclusion criteria:

1. Patient 's with suspected Gasrtic/oesophageal malignancy .
2. Patients not willing for intervention.
3. Patients with co existing co morbid morbidities.

Study Period:
12 Months.From July 2019-June 2020
Sample Size:30.All patients eligible by inclusion and exclusion criteria are to be included in the study.
Study Design:
An observational study is to be conducted on patients admitted in KGMCH,Karur for the above study. Informed consent will be taken from each respondent.

Parameters to be studied:
1. Prevalence of infection increases with age.
2. No gender predilection
3. H.Pylori and Non-Ulcer Dyspepsias.
4. H.Pylori and Chronic Duodenal Ulcer
5. H.Pylori and Antrral Gastritis
6. H.Pylori and Carcinoma Stomach.

III. Methodology:

The study was conducted on 100 consecutive patients undergoing oesophagogastroduodenoscopy (OGD) in the Department of Surgery referred from various surgical units either for confirmation of a clinical diagnosis or for undiagnosed gastrointestinal sympomatology undergoing evaluation. None of the patients in the study group had received anti Helicobacter pylori treatment majority of patients hailed from in and around Karur City. The minimum age of the patient was 10 years and the maximum age 75 years. 65% of the patients were males. The commonest age group in males was the 4^{th} decade and in females a decade less. Most of them were farmers and casual labourers belonging to the lower socioeconomic status.

IV. Discussion

Warren and Marshall [12] subscribed a small curved ”S” shaped organism in gastric biopsy specimens from patients with active chronic gastritis in 1983 after 3 years of observation.

They were able to culture the organism using Campylobacter isolation techniques and categorically ruled out the possibilities of being a species of Spirochectes of Campylobacter morphologically and biochemically. They well with Warthin Starry Silver stain.

The mode of transmission is not exactly known and It is likely that feco oral or oro oral transmission are important pathways.

Iatrogenic transmission of infection is well recognized. Two epidemics of acute hypochlorhydric gastritis due to H.Pylori occurred in research laboratory using Ph electrodes inadequately sterilized.

The ability to manufacture large amounts of powerful enzyme urease which rapidly breaks down endogenous urea, forming a cloud of ammonia around the organism, raises the pH and neutralizes the lethal effects of gastric acidity.

H. pylori urease is thought to be the most important determinant of pathogenecity since the enzyme has been produced by all clinical isolates.

1. The ammonia produced that H.pylori urease has many functions juice and provides a sources of N2 for bacteria, in addition to protecting the bacteria from gastric acidity.
2. Act as cytotoxin with human gastric cells especially susceptible to its activity.
3. Disrupting cell tight junctions in such a manner that cells remain viable but an ionic flow between cells occur.

DIAGNOSIS

1. Culture of the organism.
2. Direct Demonstration of the Organism.
3. Urease Tests.
4. The 13-C and 14-C Urea Breath Tests.

The 13-C and 14-C Urea breath tests have assumed "GOLD STANDARD" for clinical trials. They identify current infection.

5. Serological Tests:

The Enzyme linked immunosorbant assay, Indirect immunofluorescence test and the Latex agglutination tests are described, out of which the latter gives poor results.

6. The Polymerase Chain Reaction:

The Polymerase Chain Reaction is the most sensitive and specific test which will be the "Gold Standard" of the future.

Treatment

1. Eradication of Infection

Most Useful drugs are Bismuth compounds, Metronidazole, Amoxycilin, Tetracycline and Omeprazole. Colloidal Bismuth subscitrate 120 mg qid + Tetracyline 500 mg qid + Metronidazole 400 mg tds. For a period of 2 weeks.

A noval compound Ranitidine Bismuth Citrate (Ranitidine Hydrochloride 30 mg + elemental Bismuth 240 mg) is being developed with eradication rate reaching 100% when combined with a single or dual antibiotic.

V. Conclusion

The URUT has been found to be a simple, rapid, accurate and economically cheap method in the diagnosis of gastric, Helicobacter pylori infection. The prevalence of infection was wide spread in this region, increased with age, there was no significant sex predilection and was not associated with smoking, alcoholism, tobacco or betal chewing, tea or coffee drinking. No specific symptom was associated with Helicobacter pylori infection. Infection is highly prevalent in patients with chronic duodenal ulcers and chronic gastritis.

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