

Study Of Peroperative Mucosal Biopsy In Peptic Ulcer Perforation

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ABSTRACT

Peptic ulcer perforation is relatively common and most of the time patients will present to the emergency department with features of Perforative peritonitis. Aggressive management needed for the survival of patient. Early diagnosis and management favours the patient and gives good prognosis. The **aim** of this study is know the presence of *H.pylori* in patients with perforated peptic ulcer by using RUT and GIEMSA staining.

Objectives includes relationship between peptic ulcer and *H pylori*, etiological and risk factors. This research is a **prospective study** conducted in Government Nagapattinam medical college and hospital between August 2022 and January 2023. Most of the patients were middle aged (21 – 30 years) out of 50 patients, 43 were males and 7 were females in the ratio of 4 : 1. In our study 74% of patients had history of alcohol, 70% of patients had history of smoking and acid peptic disease, only 36% of patients had history of NSAID's use. Out of 50 cases studied, 34 patients were found to have duodenal perforation and 16 patients were found to have gastric perforation. In our study, prevalence of *H.pylori* infection in peptic ulcer perforation was 78% . In our study we found that *H.pylori* infection was the most common Risk factor for peptic ulcer perforation.

Key words: *H Pylori*, Perforation

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I. INTRODUCTION

Peptic ulcer perforation is relatively common and most of the time patients will present to the emergency department with features of Perforative peritonitis such as abdominal pain ,guarding, rigidity and some patients present late with features of shock and hypovolemia and needing aggressive management for survival of the patient, so that peptic ulcer perforation is relatively causing economical burden on health care services so that diagnosing the condition earlier will give good prognosis.

WARREN and MARSHALL identified the relationship between the *H. pylori* infection and peptic ulcer. It now recognized that *H. pylori* is one the most common cause of peptic ulcer and the prevalence if *H. pylori* varies with age, socio economic status and other associated risk factors so diagnosing and controlling the *H.pylori* infection will reduce the mortality and morbidity of the Patient.

Perforated peptic ulcer is most common in disease ranging approximately 7 to 10 cases per 100000 population per year. Perforation is one of the complication of peptic ulcer disease is present in about 7% of patients were admitted in hospital. So that there is a necessity of the study that the association of perforation in

peptic ulcer disease, but the correlation between the perforated peptic ulcer and H.pylori is not yet fully established if proved the control of H.pylori may reduce the economical burden on health services. We are going to study the presence of H.pylori in all cases of perforated peptic ulcer by taking the peroperative mucosal biopsy and confirming it with RUT and HPE examination.

II. AIMS AND OBJECTIVES

The aim of this study is know the presence of H.pylori in patients with perforated peptic ulcer by using RUT and GIEMSA staining.

Objectives of the studies are,

- 1) To study the cases of peptic ulcer perforation in relation to H. pylori
- 2) To study the correlation between the H. pylori and different etiological factors
- 3) To study the various risk factors in peptic ulcer perforation.

III. MATERIALS AND METHODS

About Fifty patients of perforated peptic (gastroduodenal) ulcer evaluated and analysed in an emergency basis in General surgery department in Nagapattinam medical college and hospital for a period of between August 2022 to January 2023 are included in this study.

INCLUSION CRITERIA:

- Patients of age group between 15-80 years
- Patients with perforated Gastro duodenal ulcers.

EXCLUSION CRITERIA:

- Patients below the age group of 15 years and above the age group of 80 years of age.
- Patients who was on NSAID's of more than one month.
- Patients received Anti-H.pylori treatment.

DURATION OF STUDY : 6 months (August 2022 to January 2023)

STUDY DESIGN : PROSPECTIVE COHORT STUDY

SAMPLE SIZE: 50

Emergency exploratory laparotomy has been performed in all these cases. Around Two mucosal biopsies taken in the perforation site in that one specimen is immediately put H.pylori detection kit for rapid urease test (RUT), which showed the urease production by the bacteria interpreted by colour change of the medium within a time , as follows

RAPID UREASE TEST:

Urea solution is prepared by adding 10gm of urea powder in 10ml of distilled water which gives 1% urea solution. 1ml of this prepared urea solution is added to 2 sterile plain bulbs. One of which is labelled as control and other is labelled as test. 2-3 drops of Phenol red is added (indicator). Of 2-3mm thickness tissue sample taken from the edge of ulcer and added to this testing bulb.

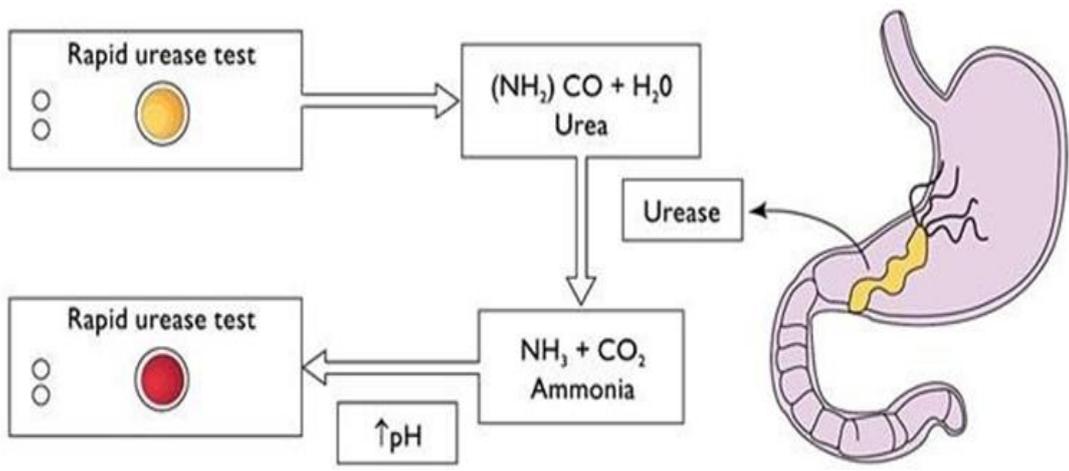
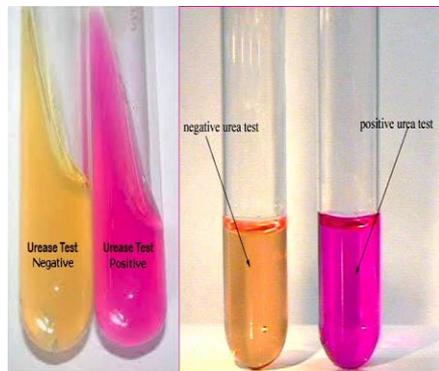
PRINCIPLE:

H.pylori secretes an enzyme-urease which catalyse conversion of urea to ammonia and bicarbonate there by raising the PH of medium which is interpreted by Colour change YELLOW TO PINK.

INTERPRETATION:

1. Within 30 mins of the test PINK colour developed the test is taken as strongly positive.
2. Pink colour doesn't developed within 30 minutes but if it developed within two hours it is taken as moderately positive.
3. Pink colour doesn't developed within 2 hours but if it developed within 24 hours it is taken as weakly positive.
4. Pink colour doesn't developed at the end of 24 hours then it is taken as negative for H pylori.

RAPID UREASE TEST

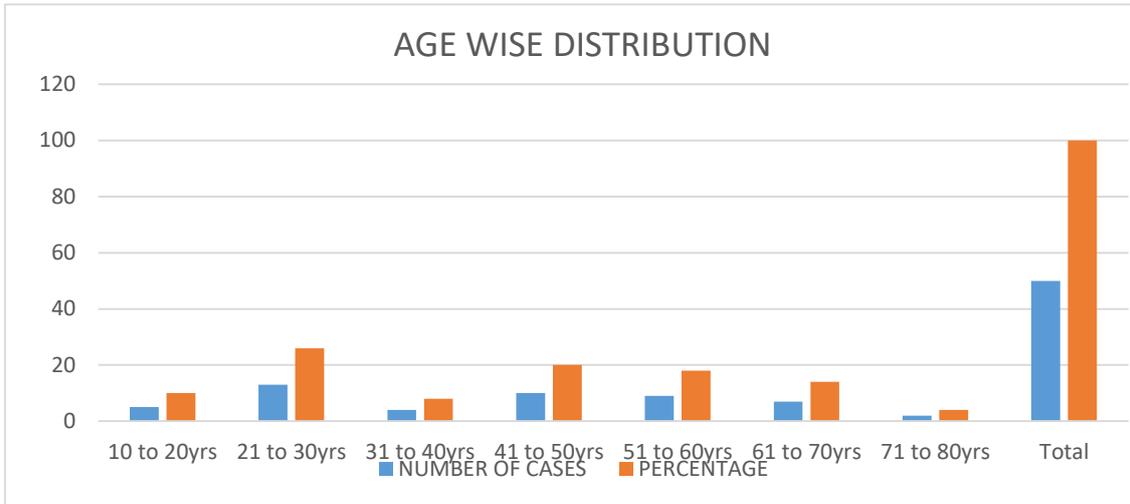


The Rapid Urease Test. Done on biopsy samples to determine the presence of H.Pylori (Images.MD)

The **Second biopsy specimen** is done with STAINING technique. It is fixed in a 10% formalin solution further subjected to geimsa staining in PATHOLOGY department demonstrating the histopathologic characteristics of the biopsy tissue while optimally demonstrating H. pylori.

IV. OBSERVATION AND ANALYSIS

AGE WISE DISTRIBUTION OF CASES IN PEPTIC ULCER PERFORATION



i.e Bar diagram showing age wise distribution of cases in peptic ulcer perforation

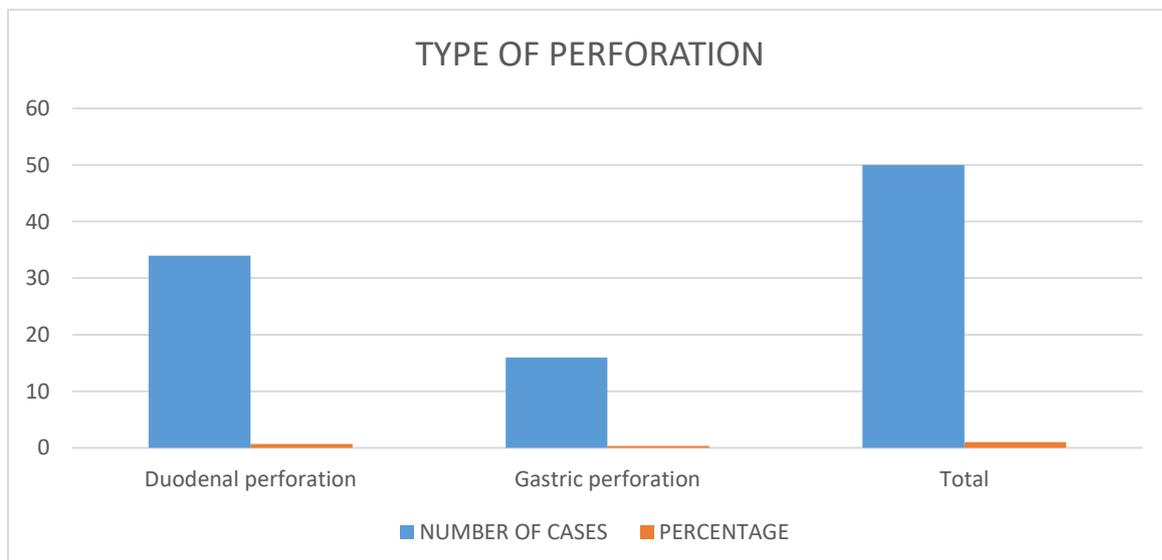
Maximum(26%) number of patients belong to the age group of 21-30 Years

Minimum(4%) number of patients belong to the age group of 71-80 Years

SEX WISE DISTRIBUTION OF CASES IN PEPTIC ULCER PERFORATION

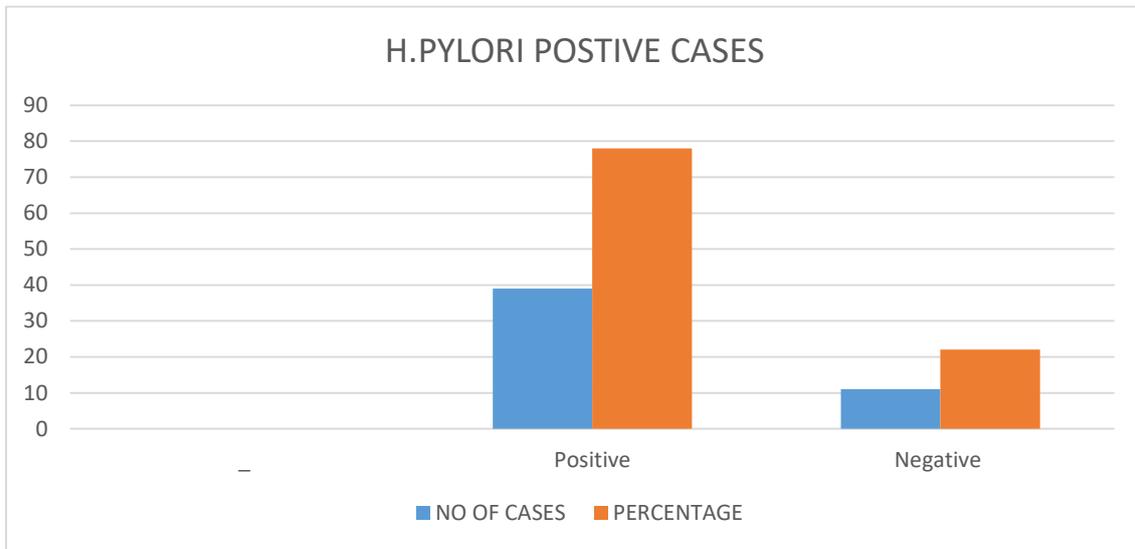
i.e BAR diagram showing sex wise distribution of cases In peptic ulcer perforation. In our study 86% of patients were found be MALE and 14% patients were found to be FEMALE

TYPE OF PERFORATION IN TOTAL NUMBER OF CASES



i.e Bar diagram showing type of perforation in all cases of peptic ulcer disease. In our study duodenal perforation were found to be 68% and gastric perforation were found to be 32%.

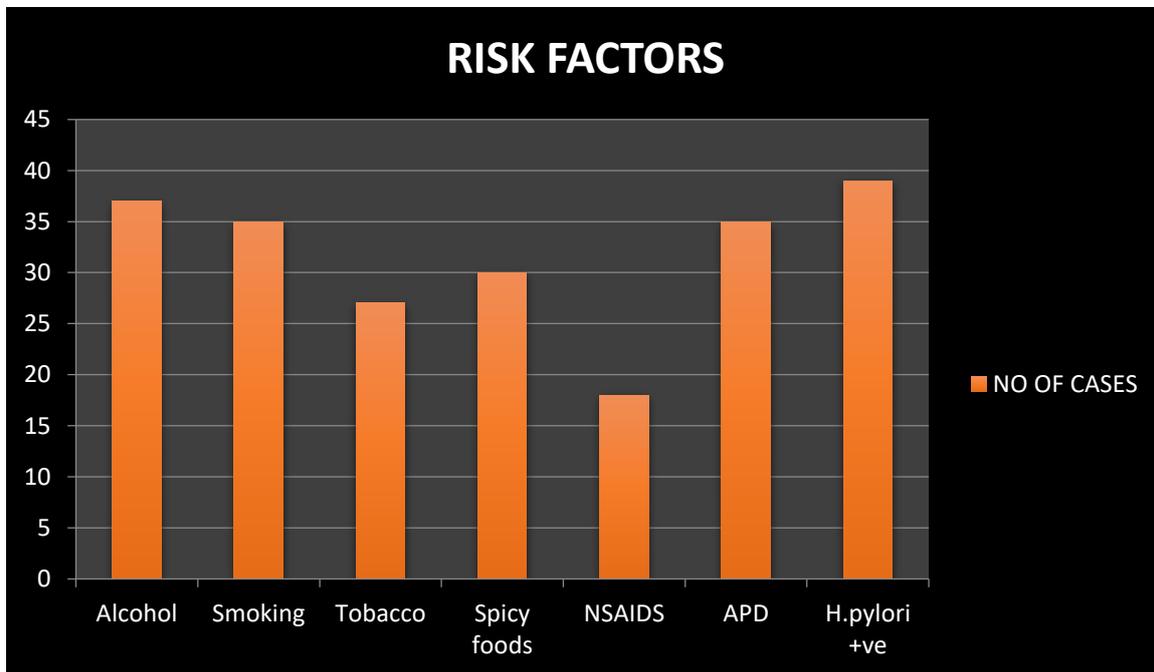
H.PYLORI POSITIVE CASES IN PEPTIC ULCER PERFORATION



i.e Bar diagram showing H.pylori positive cases in peptic ulcer perforation

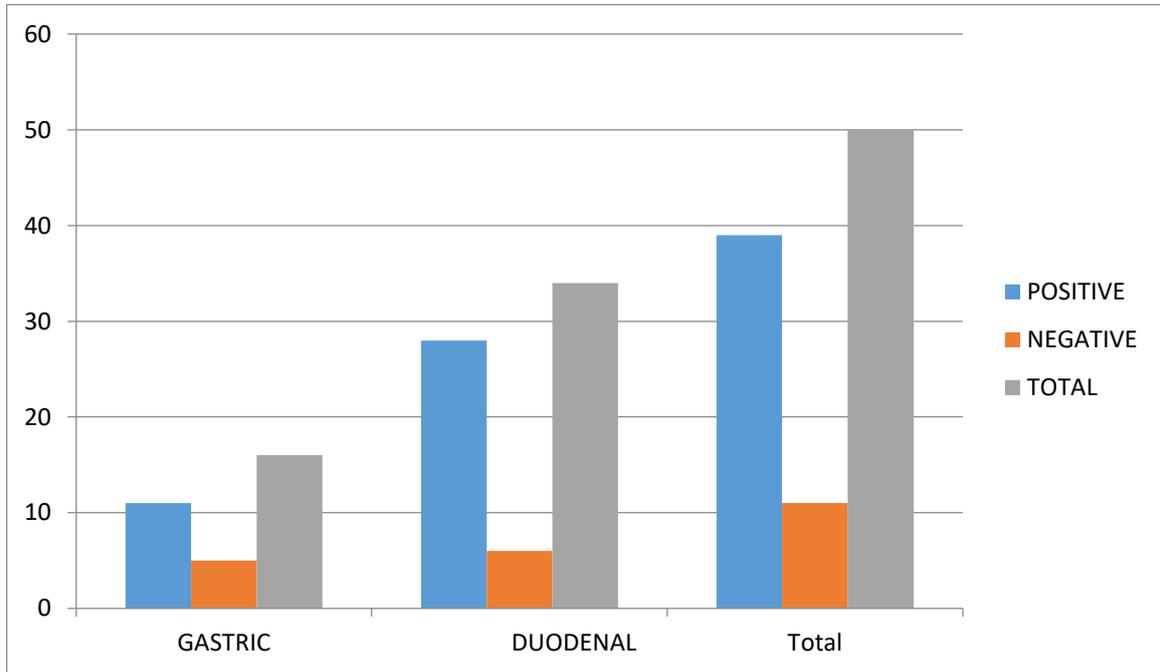
Our study showed that 78 % of patients were found to be Positive for H.PYLORI and 22% were found to be Negative

RELATION OF RISK FACTOS WITH PERPTIC ULCER PERFORATION:

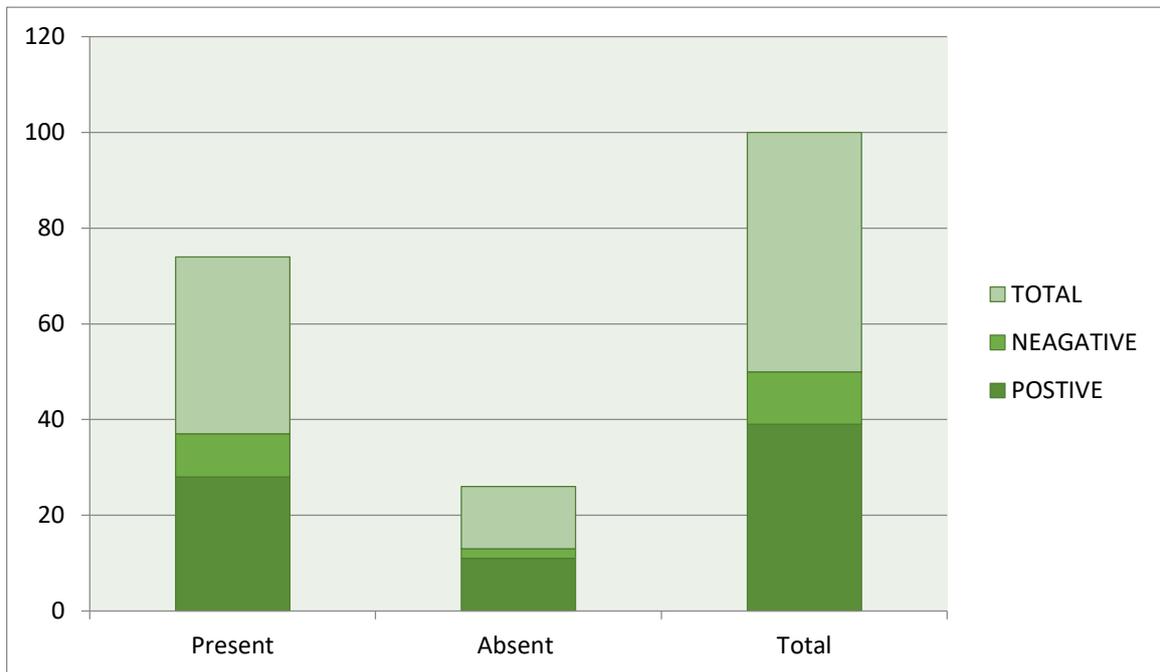


In our study we found that maximum number of the patients (39) i.e 78% shows H.pylori as a common risk factor & Alcohol (74%) is the 2nd most common risk factor ,followed by smoking and Dypepsia (70%) contributes for peptic ulcer perforation.

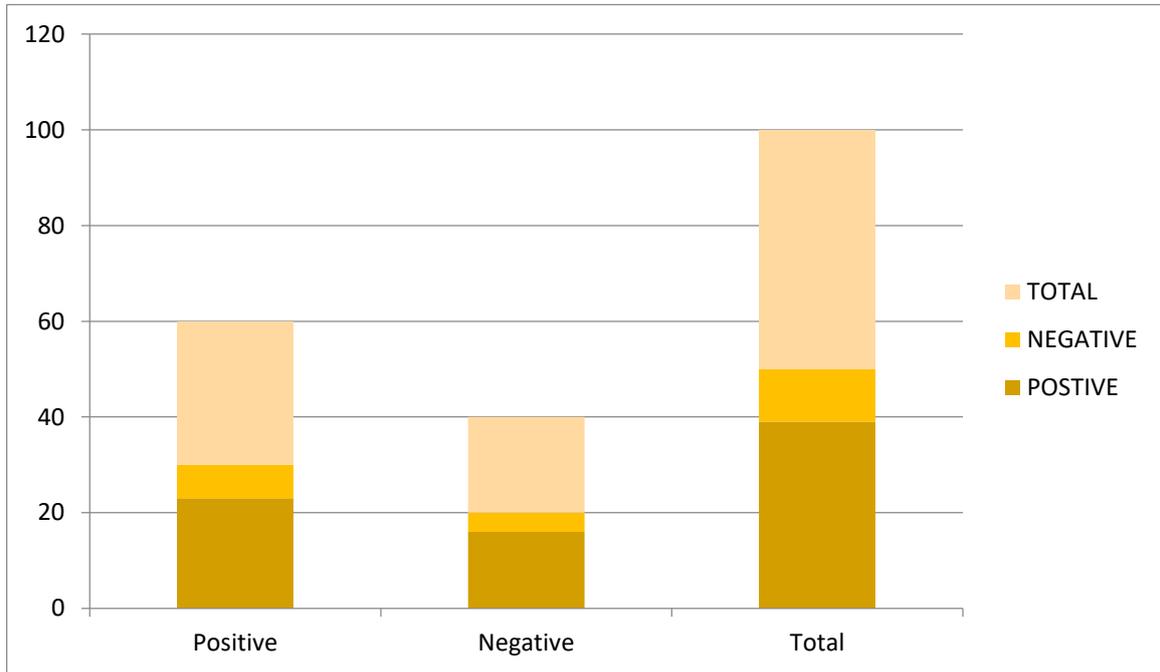
RELATIONSHIP BETWEEN THE TYPE OF PERFORATION AND H.PYLORI STATUS:



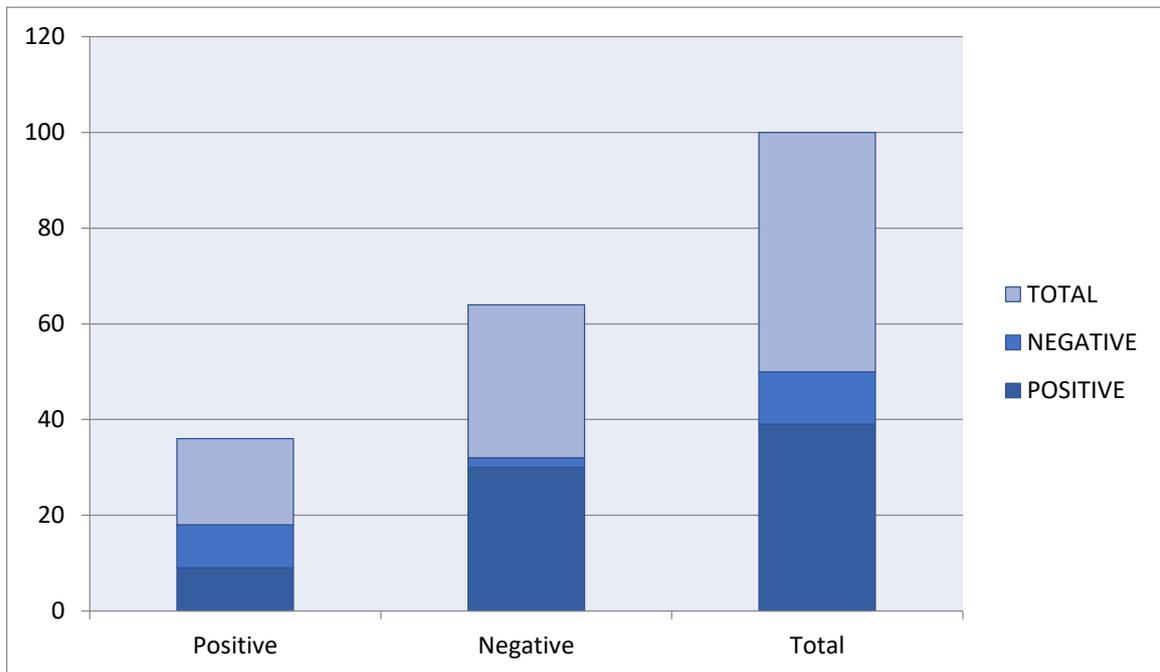
COMPARISON OF ALCOHOLISM AND H.PYLORI STATUS



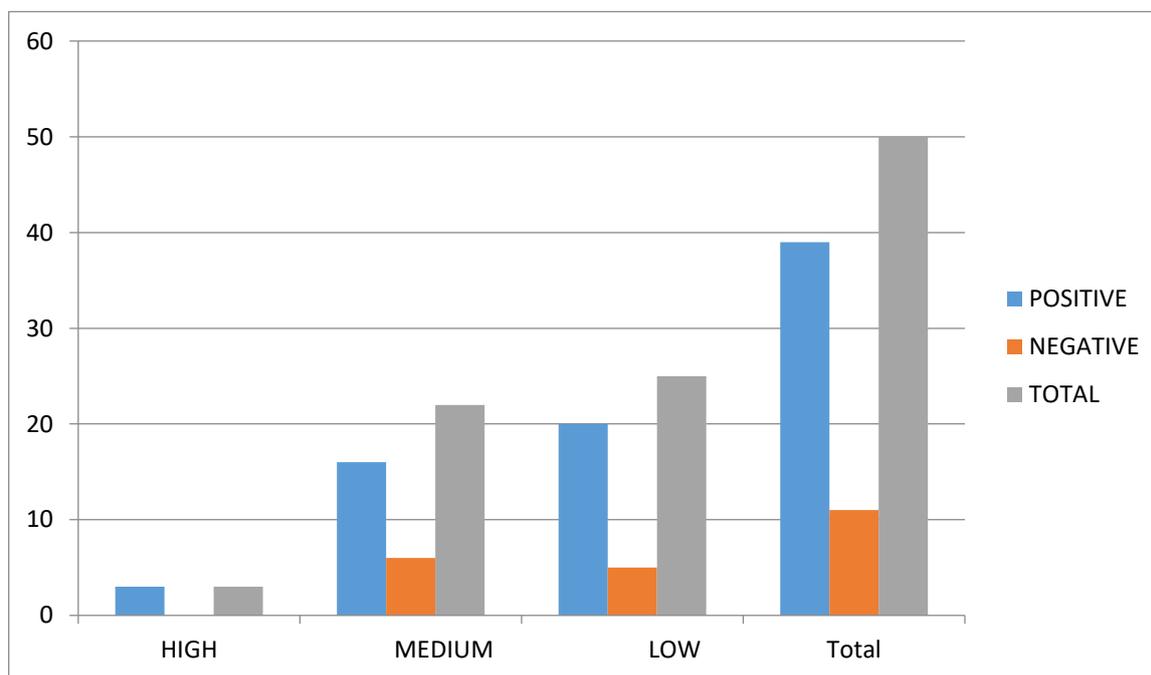
COMPARISON OF SPICY FOODS AND H.PYLORI STATUS



COMPARISON OF NSAIDS AND H.PYLORI STATUS



RELATIONSHIP BETWEEN H.PYLORI AND SOCIOECONOMIC STATUS:



V. DISCUSSION

Most of the patients were middle aged (21 – 30 years) out of 50 patients, 43 were males and 7 were females in the ratio of 4 : 1. In our study 74% of patients had history of alcohol, 70% of patients had history of smoking and acid peptic disease, only 36% of patients had history of NSAID’s use. Out of 50 cases studied, 34 patients (68.00%) were found to have duodenal perforation and 16 patients (32.00%) were found to have gastric perforation. In our study, prevalence of H.pylori infection in peptic ulcer perforation was 78% (39 cases out of 50). In our study we found that H.pylori infection was the most common Risk factor for peptic ulcer perforation. This study shows that patients of peptic ulcer perforation with Dyspepsia has a high prevalence rate of H.pylori infection. Therefore if we treat these patients with Anti H.pylori triple therapy postoperatively we can reduce the recurrence of ulcer and reperforation and by controlling the H.pylori infection in Acid Peptic Disease patients may reduce the incidence of peptic ulcer perforation and prevent the morbidity and mortality of the patient.

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