# STUDY OF THE CORRELATION BETWEEN ENDOSCOPIC AND HISTOPATHOLOGICAL FINDINGS IN BOTH NEOPLASTIC AND NON NEOPLASTIC GASTRIC LESIONS.

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## ABSTRACT

**Background :** Stomach is a common site for wide variety of lesions. The visualisation of the site with biopsy leads to the early detection of the pathologic process and appropriate therapy.

**Aims:** The objective of this study is to correlate the histopathological pattern of endoscopic biopsies with distribution of gastric lesions according to age and sex.

**Materials and methods :** The retrospective study was carried out among 50 cases with endoscopic biopsies and histopathological assessment, received at Department of Pathology, Tagore Medical College and Hospital using standard processing and staining techniques with Haematoxylin & Eosin and with Giemsa stain whenever required. All the sections were reported by a pathologist. Data was collected and analyzed for frequency, percentages and results were presented through tables.

**Results :** Out of 50 cases majority of cases were of male gender with male: female ratio was 1.2: 1. Our study showed a poor correlation between endoscopic and histopathological evidence of inflammation in the stomach. Two cases were diagnosed as intestinal metaplasia which were diagnosed as ulcer and erosion endoscopically. Out of 24 of cases diagnosed endoscopically as ulcer, only one case was confirmed histopathologicaly. Our study showed good correlation in the cases of carcinoma. Out of 5 cases diagnosed endoscopically as gastric carcinoma correlated histopathologically as gastric adenocarcinoma. Majority of carcinoma cases showed ulcerating, fungating growth followed by ulcero-proliferative growth.

**Conclusion :** Endoscopy is incomplete without biopsy and histopathology is the gold standard for the diagnosis of endoscopically detected lesions. Endoscopic examination and histopathological

examination of suspected gastric lesions should go parallel and neither should be a substitute of each other.

**Key Words:** Carcinoma, Endoscopy, Helicobacter pylori, Histopathology

## INTRODUCTION

Endoscopy with biopsy is important for the diagnosis and treatment of various diseases of the upper gastrointestinal tract. Implementation of recent protocols for taking biopsies and usage of appropriate classifications for reporting biopsies has revolutionised our understanding of the basic pathology [1]. However, due to the differences between recommendations and clinical practice, it is imperative to address the challenges of endoscopic biopsies [2].
Endoscopic appearances may be valuable in diagnosis but more accurate and detailed information results from histological examination of mucosal biopsy specimens. Over the years it has been realized that the endoscopic appearances are highly suggestive but are not pathgnomonic and they need histological confirmation. In majority of the conditions histological diagnosis is corroborative and hence for the final diagnosis a good dialogue between clinician, endoscopist, radiologist and pathologist is required.(3,4)

Histopathological study of biopsy specimens are used to confirm endoscopic diagnosis in suspected malignancy or to rule out endoscopically benign appearing lesion. The endoscopic biopsies are performed not only for the diagnosis of the disease but also for monitoring the course, determining the extent of a disease, as responses to therapy and for the early detection of complications.(5,6)

The various gastric lesions include inflammatory, non-neoplastic and neoplastic lesions. The various inflammatory lesions are acute gastritis, chronic gastritis, peptic ulcer disease, autoimmune gastritis, eosinophilic gastritis, lymphocytic gastritis, granulomatous gastritis and intestinal metaplasia. Neoplastic and non-neoplastic proliferations include menetrier disease, Zollinger-Ellison syndrome, hypertrophic pyloric stenosis, portal hypertensive gastropathy, inflammatory and hyperplastic polyps, fundic gastric polyps, gastric adenomas, gastric adenocarcinomas, primary gastric lymphomas, carcinoid tumors, gastrointestinal stromal tumor.[7] We aim to study correlation between endoscopic and histopathological findings in both neoplastic and non-neoplastic gastric lesions.

## MATERIALS AND METHODS

The retrospective study was carried out among 50 cases with endoscopic biopsies and histopathological assessment, received from 1st January 2022 onwards to till date at Department of Pathology, Tagore Medical College and hospital. Endoscopy was done in all the patient clinically diagnosed with gastric lesions and lesions were diagnosed on gross visualization during endoscopy.

### Inclusion criteria

Patient of 21 years to more than 71 years .
Inpatients, outpatients and those with diagnostic gastric endoscopies .

### Exclusion criteria

Patient of less than 21 years
Pregnant women
Lactating women

**Methodology**

Gross examination of specimen according to the gross technique was done and documented. Tissue processing was done by using automatic tissue processor. Specimens were processed and embedded in paraffin wax and were cut into sections of 5 micrometre thickness, all the slides were stained with Haematoxylin & Eosin and with Giemsa stain whenever required. All the sections were reported by pathologist. Data was collected and analyzed for frequency, percentages and results were presented through tables.

**RESULTS**

**Table 1: Age and sex distribution of study group**

| Age(years) | No.of cases | Male | Female |
|---|---|---|---|
| 21-30 | 4 ( 8% ) | 2(4 % ) | 2(4 % ) |
| 31-40 | 7( 14% ) | 6( 12% ) | 1( 2% ) |
| **41-50** | **10(20 % )** | 5( 10% ) | 5(10 % ) |
| **51-60** | **10(20 % )** | 7(14 % ) | 3( 6% ) |
| 61-70 | 9(18 % ) | 2(4 % ) | 7( 14% ) |
| **>71** | **10(20 % )** | 5( 10% ) | 5( 10% ) |
| Total | 50( 100% ) | 27(54%) | 23(46%) |

Among the 50 cases, 54 % were male and 46% were females. The age and sex distribution of the study groups are shown in Table 1.

**Table 2: Correlation between endoscopic and histopathological diagnosis**

| Clinical Diagnosis | Endoscopic Diagnosis | | Histopathological Diagnosis | | | | |
|---|---|---|---|---|---|---|---|
| | Normal | Ulcer | Gastritis | Metaplasia | Carcinoma | H pylori induced gastritis | Total |
| Erythema | 2(33%) | - | 2(33%) | - | - | 2(33%) | 6(12%) |
| Ulcer | 4(17%) | 1(4%) | 8(33%) | 1(4%) | 1(4%) | 8(33%) | 23(46%) |
| Erosion | 4(24%) | - | 6(35%) | 1(6%) | - | 6(35%) | 17(34%) |
| Growth | - | - | | - | 4(100%) | | 4(8%) |
| Total | 10(20%) | 1(2%) | 16(32%) | 2(4%) | 5(10%) | 16(32%) | 50(100%) |

Out of six cases of erythematous patches diagnosed endoscopically, 33% were found to be normal, 33% as chronic gastritis and 33% were diagnosed as Helicobacter pylori induced gastritis. Out of 23 cases which were diagnosed as gastric ulcer endoscopically, 17% were found to be normal, 33% cases were diagnosed as chronic gastritis, 33% cases were diagnosed as Helicobacter pylori induced gastritis and 1% of cases were diagnosed as ulcer, metaplasia and carcinoma respectively. Similarly, among 17 cases diagnosed as erosion endoscopically,24% were normal,35% showed Helicobacter pylori induced chronic gastritis, 35% shows chronic gastritis and 6% showed metaplasia.(Table 2).

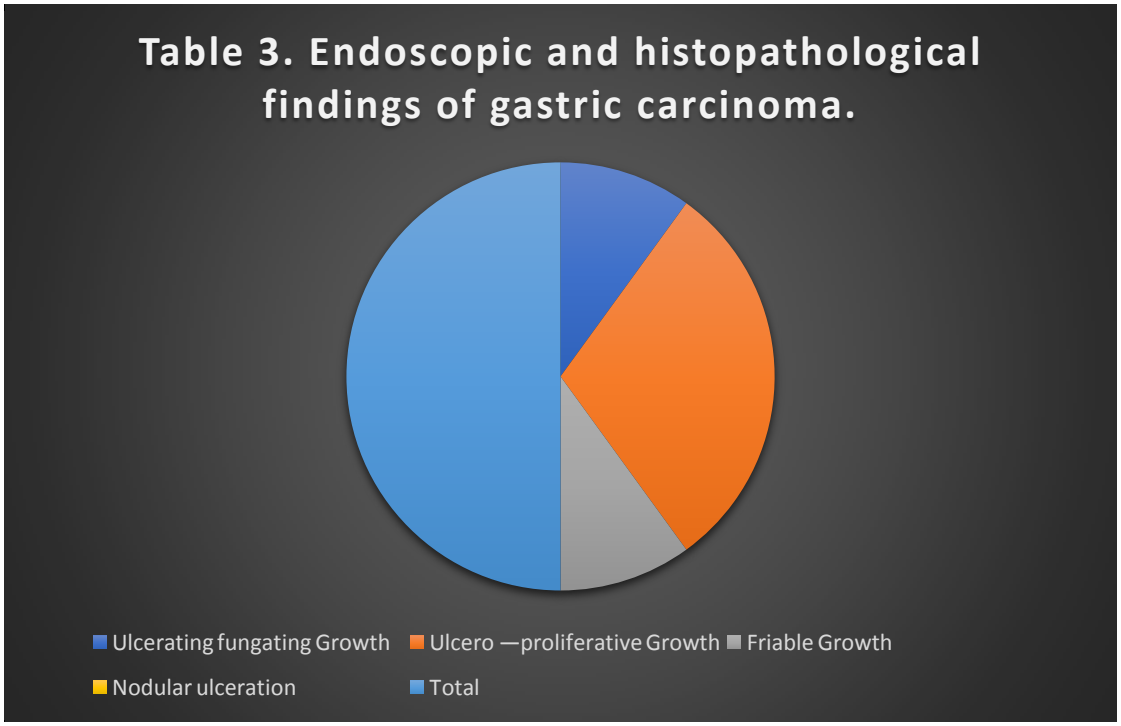


**Table 3. Endoscopic and histopathological findings of gastric carcinoma.**

| Endoscopic findings | Adenocarcinoma |
|---|---|
| Nodular ulceration | - |
| Friable Growth | 1(20%) |
| Ulcerating fungating Growth | 1(20%) |
| Ulcero —proliferative Growth | 3(60%) |
| Total | 5(100%) |

However, all 5 of the endoscopically suspected carcinoma correlated histologically as adenocarcinoma, majority of carcinoma presented as an ulcerating fungating growth on endoscopy. (Table 3)

The correlation between pathologic and endoscopic results for antrum, body and fundus were 0.42, 0.46 and 0.36 respectively. Also, the significant correlation between endoscopy and histopathology was found ($P<0.001$).
The common clinical features in patients with gastric lesions were pain epigastrium present in 30 (60%) and dyspepsia present in 20 (40%) patients. Dyspepsia was present in 3 out of 5 cases of adenocarcinoma and 10 out of 16 case of chronic gastritis. Hence dyspepsia has a significant correlation with adenocarcinoma and chronic gastritis (p-value $< 0.05$). Tobacco, alcohol, NSAIDs and hot tea intake were found in significant number of cases with gastric lesions particularly adenocarcinoma and chronic gastritis.

**Table 4: Endoscopic and histopathological findings of gastric carcinoma in comparative studies**

| Endoscopic findings | Sharma al study [8] | Present study |
|---|---|---|
| Nodular ulceration | 2(12%) | - |
| Friable Growth | 4(24%) | 1(20%) |
| Ulcerating fungating Growth | 6(35%) | 1(20%) |
| Ulceroproliferative Growth | 5(29%) | 3(60%) |
| Total | 17(100%) | 5(100%) |

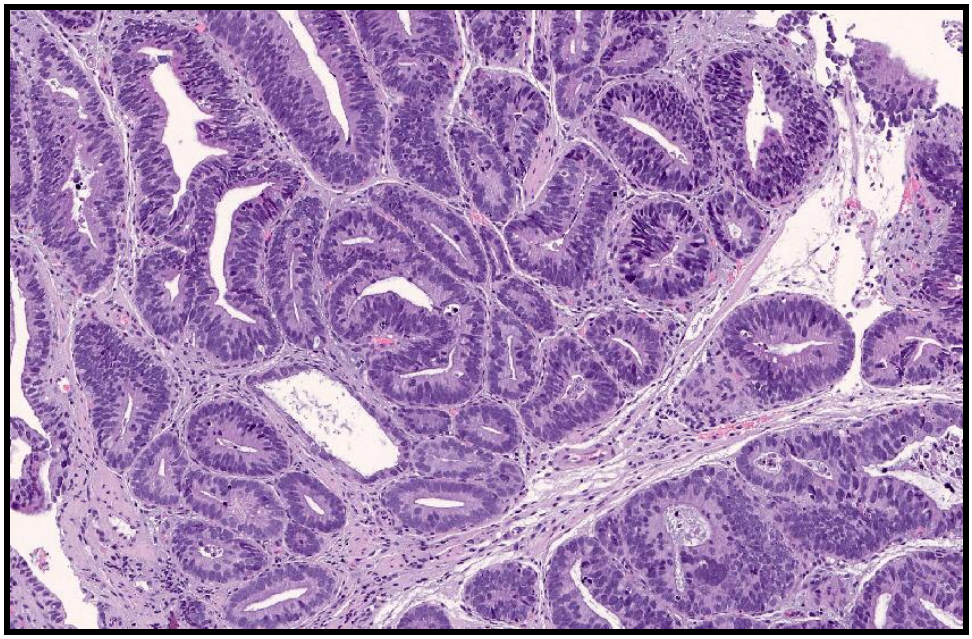

**IMAGE 1: Adenocarcinoma H&E (40x)**

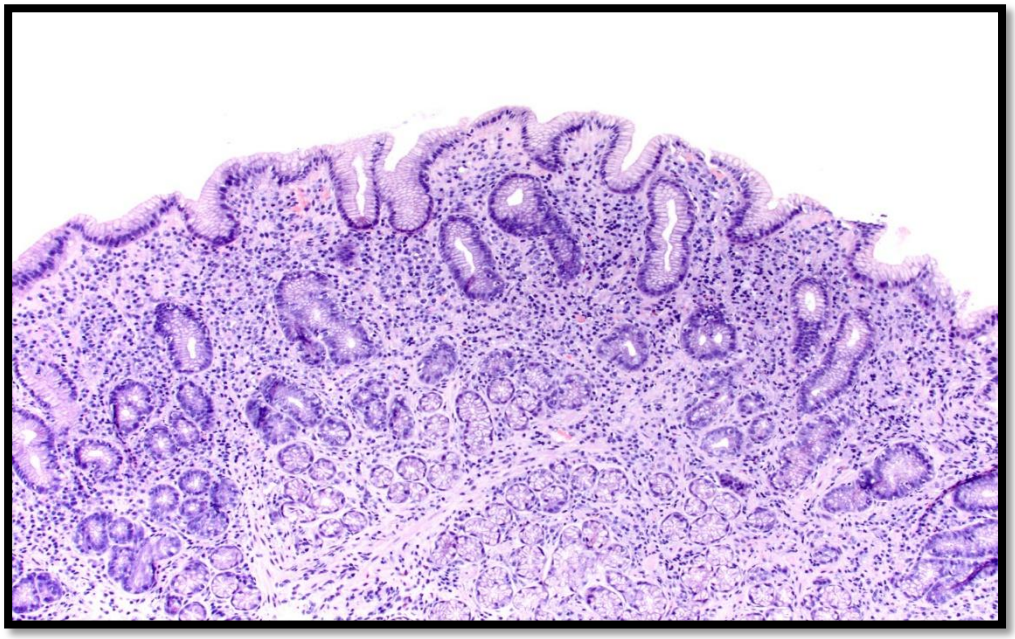

**IMAGE 2: H pylori induced gastritis giemsa stain (10x)**

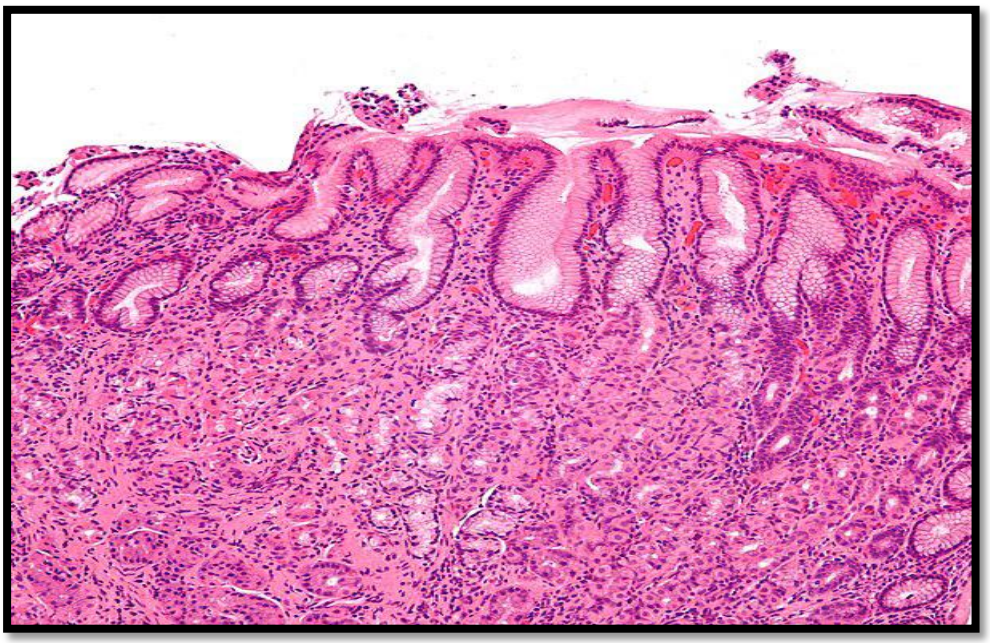

**IMAGE 3 : Chronic gastritis H&E (10x)**

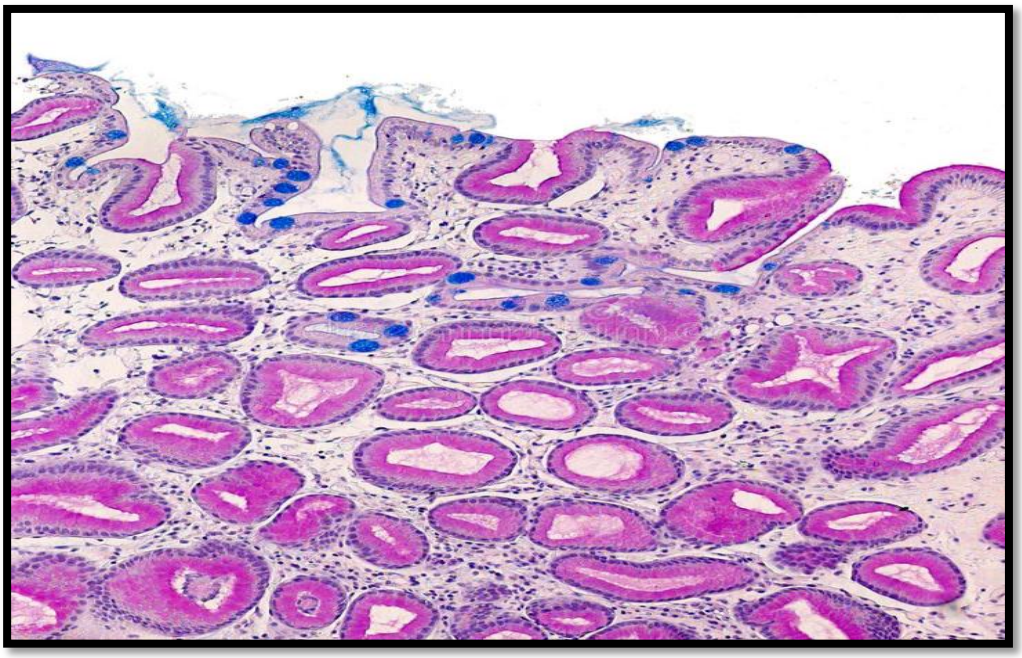

**IMAGE 4: Intestinal metaplasia Alcian blue + PAS (10x)**

## DISCUSSION

The biopsy sampling of the gastric mucosa at diagnostic endoscopy provides useful information which helps in the diagnosis of various lesions. This study aimed toward finding a strong endoscopic and histological correlation of gastric lesions.

In the present study Among the 50 cases, 54 % were male and 46% were females. Similar findings were observed in S Sharma et al[8] out of 50 cases majority of cases were of male gender with male: female ratio was 1.3:1. Amoldeep et al[9] study found that in all age groups, male patients were more than females and the maximum number of patients were in the age group of 51-60 years. In Anunayi et al [10]study among the 87 cases, 71.26% were male and 28.74% were females. In Golmehr Taher study [11] the mean age of patients was 51±6 years and 207 patients (59.1%) were male. In Poudel et al study[12] 29 (67.4%) were male and 14 (32.6%) were female with a male to female ratio of 2.07:1. The age range of patients was from 21 years to 96 years with a mean age of 52.52 years.

In our study the common clinical features in patients with gastric lesions were pain epigastrium present in 30 (60%) and dyspepsia present in 20(40%) patients Amoldeep et al [9]also noted pain in the epigastrium as most common symptom in 123 (82%) and dyspepsia present in 101 (67.3%) patients.

In the present study, Out of six cases of erythematous patches diagnosed endoscopically, 33% were found to be normal, 33% as chronic gastritis and 33% were diagnosed Helicobacter pylori induced gastritis Out of 23 cases which were diagnosed as gastric ulcer endoscopically, 17% were found to be normal, 33% cases were diagnosed as chronic gastritis, 33% cases were diagnosed as Helicobacter pylori induced gastritis and 1% of cases were diagnosed as ulcer, metaplasia and carcinoma respectively. Similarly, among 17 cases diagnosed as erosion. In a study done by S Sharma et al[8] 18 cases were diagnosed as intestinal metaplasia which were diagnosed as ulcer and erosion endoscopically. Out of 32% of cases diagnosed endoscopically as ulcer, only one case was confirmed histopathologically. In Anunayi et al study [10]out of eight cases of erythematous patches diagnosed endoscopically, 12% were found to be normal, 25% as chronic gastritis and 63% were diagnosed Helicobacter pylori induced gastritis. Out of 23 cases which were diagnosed as gastric ulcer endoscopically, 5% were found to be normal, 34 % cases were diagnosed as chronic gastritis .35% cases were diagnosed as Helicobacter pylori induced gastritis, 5% cases were diagnosed as ulcer, 8% and 14% of cases were diagnosed as metaplasia and carcinoma respectively.

In our study out of six cases of erythematous patches diagnosed endoscopically, 33% were found to be normal, 33% as chronic gastritis and 33% were diagnosed Helicobacter pylori induced gastritis. Out of 23 cases which were diagnosed as gastric ulcer endoscopically, 17% were found to be normal, 33% cases were diagnosed as chronic gastritis, 33% cases were diagnosed as Helicobacter pylori induced gastritis and 1% of cases were diagnosed as ulcer, metaplasia and carcinoma respectively. Similarly, among 17 cases diagnosed as erosion endoscopically,24% were normal,35% showed Helicobacter pylori induced chronic gastritis, 35% shows chronic gastritis and 6% showed metaplasia.(Table 2). Poudel et al [12]noted highest number of patients with Gastritis followed by PU, erosion, carcinoma and normal study. Amoldeep et al[9] noted out of 150 cases reviewed, there were 99 (66.0%) cases of chronic gastritis, 12 (8.0%) cases of adenocarcinoma, 12 (8.0%) cases with no specific diagnosis, 7 (4.7%) cases of hyperplastic polyp, 7 (4.7%) cases of dysplasia, 5 (3.3%) cases of acute on chronic gastritis, 3 (2.0%) cases of eosinophilic gastritis, 2 (1.3%) cases of acute gastritis, 2 (1.3%) cases of intestinal metaplasia and 1 (0.7%) case of chronic atrophic gastritis Anunayi et al [10]study Similarly , all 38 of the endoscopically suspected carcinoma correlated histologically as adenocarcinoma, majority of carcinoma presented as an ulcerating fungating growth on endoscopy .

In our study there was significant correlation between endoscopy and histopathology was found (P<0.001). and in Golmehr Taher[11] et al also noted significant correlation between endoscopy and histopathology was found (P<0.001).S Sharma et al [8] Our study showed good correlation in the cases of carcinoma. Out of 17 cases diagnosed endoscopically as gastric carcinoma correlated histopathologically as gastric adenocarcinoma. Majority of carcinoma cases showed ulcerating fungating growth followed by ulcero-proliferative growth.

## CONCLUSION

Endoscopy is incomplete without biopsy and histopathology is the gold standard for the diagnosis of endoscopically detected lesions. Endoscopic examination and histopathological examination of suspected gastric lesions should go parallel and neither should be a substitute of each other.

## REFERENCES

1. Montgomery E, Voltaggio L. Biopsy interpretation of the gastrointestinal tract mucosa volume 1: Non-Neoplastic. 2nd ed. Lippincott Williams and Wilkins, Philadelphia: 2012.
2. Peixoto A, Silva M, Pereira P, Macedo G. Biopsies in gastrointestinal endoscopy: When and how. GE Port J Gastroenterol. 2016;23(1):19-27.
3. Hopkins HH. Optical principles of endoscope. In: Berci G, ed. Endoscopy. 2nd ed. New York: Appleton Century Grafts, 1976: 3 - 26.
4. Ofman JJ, Shaheen NJ, Desai AA, Moody B, Bozymski EM, Weinstein WM. The quality of care in Barrett's esophagus: Endoscopist and pathologist practices. Am J Gastroenterol. 2001; 96:876 - 81.
5. Raao DN, Desai PB, Balasubramaniam G. Epidemiological observation of cancer of the esophagus- a review of Indian studies. Indian J of Cancer 1996;33(2):55-75.
6. Marson BC, Dawon IMP. IN: Gastrointestinal pathology. 2nd edn. London: Black Well scientific publications 1998:148-51.
7. Kumar, Abbas, Aster. The Gastrointestinal Tract- Stomach. Robbins and Cotran Pathologic Basis of Disease – South Asia edition 2015; 2:760-77.
8. Sharma S, Makaju R, Dhakal R, Purbey B, Gurung RB, Shrestha R. Correla on between Endoscopic and Histopathological Findings in Gastric Lesions. *Kathmandu Univ Med J* 2015;51(3):216-9.
9. Bhatti AK, Singh H, Kumar A, Kundal RK, Kaur P. Histopathological and Endoscopic Correlation of Gastric Lesions in Endoscopic Gastric Biopsies. Ann. Int. Med. Den. Res. 2018; 4(3): PT13-PT17.
10. Jeshtadi A, Mohammad AM, Kadaru MR, et al. Study of gastric biopsies with clinicopathological correlation – A tertiary care centre experience. J. Evid. Based Med. Healthc. 2016; 3(57), 2937-2940.
11. Taheri G, Hemmasi G R. Correlation between endoscopic and histopathological findings in patients with stomach lesion referred to Firoozgar Hospital, Tehran (2016-2017). Journal of Inflammatory Diseases. 2018; 22 (5) :44-50
12. Poudel A, Regmi S. , Poudel S. , Joshi P: Correlation between endoscopic and histopathological findings in gastric lesions: journal of Universal College of Medical Sciences: 2013:Vol.1 No.03, 37-41