


ORIGINAL ARTICLE**Histological Analysis of Gastric Cancer- A Retrospective Study**Neha Sood¹, Anil Kumar², Rashmi Gautam³, Shachi Ahlawat⁴, Kriti Sauran⁵^{1,3,4}Assistant Professor, ²Associate Professor, General Pathology, Saraswathi Institute of Medical Sciences, Hapur, U.P., ⁵MBBS Final Year, Lady Hardinge Medical College, New Delhi, India**ABSTRACT:**

Background: Gastrointestinal (GI) cancers account for 20% of estimated new cancer cases and 15% of estimated death worldwide. At present it is the second most cancer after lung malignancy. The present study was conducted to assess the cases of gastric cancer in study population. **Materials & Methods:** Microscopic data was recorded from the available sections and recent blocks, using haematoxylin and eosin, routinely. Special stains like PAS and Alcian blue and reticulin were used. The histological classification was based on Laurens (1965) classification as follows: (1) Intestinal type, (2) Diffuse type and (3) Mixed type. **Results:** Male consisted of 54 and females 32. The difference was significant (P<0.05). Histological type of gastric cancer. Intestinal metaplasia was intestinal (14), diffuse (6) and mixed (4). Similarly chronic follicular gastritis showed intestinal (7), diffuse (10) and mixed (9). Lymphoid hyperplasia showed intestinal (8), diffuse (5) and mixed (12). The difference was significant (P< 0.05). Out of 86 gastric cancer, Pyloric antrum included 43, body (21) and cardia and fundus comprised of 22. The difference was significant (P<0.05). Adenocarcinoma of antrum was 3, body was 2 and cardia/ fundus was 1. Adenocarcinoma with carcinoid of antrum was 2, body was 1 and cardia/fundus was 2. **Conclusion:** The number of cases of gastric cancers is increasing day by day. The most common histological type reported was intestinal followed by diffuse and mixed.

Key words: Gastric cancer, Intestinal, Mixed.**Corresponding author:** Dr. Anil Kumar, Associate Professor, General Pathology, Saraswathi Institute of Medical Sciences, Hapur, U.P., India**This article may be cited as:** Sood N, Kumar A, Gautam R, Ahlawat S, Sauran K. Histological Analysis of Gastric Cancer- A Retrospective Study. J Adv Med Dent Scie Res 2017;5(11):93-95.

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INTRODUCTION

Cancer is a major public health problem all over the world, accounting for almost one in every four deaths. Gastric cancer is still one of the major causes of cancer deaths, although mortality has been consistently decreasing.¹ Gastrointestinal (GI) cancers account for 20% of estimated new cancer cases and 15% of estimated death worldwide. At present it is the second most cancer after lung malignancy. After the age of 40, the incidence of gastric cancers gradually increases with age, the highest incidence being after the age of 80.²

Among the malignant tumours of the stomach, carcinoma is the commonest accounting for about 90-95% cases. The incidence and mortality is double for males in both high and low risk countries. Esophageal cancer is the eighth most common cancer worldwide and the sixth most common cause of cancer-related death.³ Cancer of the esophagus accounts for 5.5% of all malignant tumors of the GI tract. The most common carcinoma of the oesophagus is squamous cell carcinoma. Adenocarcinoma predominantly

arises from Barrett's oesophagus and long standing gastroesophageal reflux disease. It also shows strong gender bias, being seven fold more common in men. Gastric Cancer is still the fourth most common cancer in the world. It accounts for 10% of new cancer cases in the world.⁴

Among the malignant tumors that occur in the stomach, adenocarcinoma is overwhelmingly the most important and the most common malignancy. Environment plays an important role and common characteristics of high risk areas being high intake of starchy foods smoked and salted meat with low intake of fresh fruits and vegetables. Risk factors include atrophic gastritis with intestinal metaplasia, pernicious anaemia, adenomatous polyps and previous partial gastrectomy.⁵ The present study was conducted to assess the cases of gastric cancer in study population.

MATERIALS & METHODS

The present retrospective study was conducted in the department of general pathology. It included gastrectomy

specimens. Ethical clearance was obtained from institutional ethical committee.

The gross detail included topography and gross details of the tumour. Gross morphology was based on Borrmann (1926) classification as; polypoid, fungating, infiltrating and ulcerative types. Microscopic data was recorded from the available sections and recent blocks, using haematoxylin

and eosin, routinely. Special stains like PAS and Alcian blue and reticulin were used. The histological classification was based on Laurens (1965) classification as follows: (1) Intestinal type, (2) Diffuse type and (3) Mixed type. Results thus obtained were subjected to statistical analysis using chi-square test. P value <0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 86		
Male	Female	P value
54	32	0.05

Table I shows that male consisted of 54 and females 32. The difference was significant (P<0.05).

Table II Histologic type of gastric cancer

Histologic type	Intestinal metaplasia	Chronic follicular gastritis	Lymphoid hyperplasia
Intestinal	14	7	8
Diffuse	6	10	5
Mixed	4	9	12

Table II shows histologic type of gastric cancer. Intestinal metaplasia was intestinal (14), diffuse (6) and mixed (4). Similarly chronic follicular gastritis showed intestinal (7), diffuse (10) and mixed (9). Lymphoid hyperplasia showed intestinal (8), diffuse (5) and mixed (12). The difference was significant (P< 0.05).

Table II Gastric cancer according to Lauren's classification

Type	Pyloric antrum	Body	Cardia and fundus
Intestinal	14	8	7
Diffuse	10	6	5
Mixed	14	4	7
Adenosquamous carcinoma	3	2	1
Adenocarcinoma with carcinoid	2	1	2
Total- 86	43	21	22

Table II shows that out of 86 gastric cancer, Pyloric antrum included 43, body (21) and cardia and fundus comprised of 22. The difference was significant (P<0.05). Adenocarcinoma of antrum was 3, body was 2 and cardia/fundus was 1. Adenocarcinoma with carcinoid of antrum was 2, body was 1 and cardia/fundus was 2.

DISCUSSION

The definitive diagnosis of gastrointestinal lesions largely depends on the histopathological confirmation and is one of the bases for planning proper treatment regimen. Helicobacter pylori infection and a high dietary salt intake are the risk factors for the development of gastric adenocarcinoma.⁶ Approximately 25-50% of all Non-Hodgkin's lymphomas arise at extra nodal sites with the gastrointestinal tract as the commonest extra nodal site accounting for about 4-20 % of all, especially in Asian countries lymphoma constitute up to 10 % of all gastric malignancies. Most gastrointestinal mesenchymal neoplasms are gastro intestinal stromal tumors (GISTs).⁷

The present study comprised of 54 males and 32 females. We analyzed the histologic type of gastric cancer. It was intestinal, diffuse and mixed. Most common type was intestinal (29) followed by diffuse (25) and mixed (21). Our results are in agreement with Morsan.⁸

We found that out of 86 gastric cancer, most common gastric cancer was of pyloric antrum (43), followed by fundus (22) and body (21). Adenocarcinoma of antrum was 3, body was 2 and cardia/fundus was 1. Adenocarcinoma with carcinoid of antrum was 2, body was 1 and cardia/fundus was 2. This is in agreement with Sipponen et al.⁹

Small bowel, which represents 75% of the length of the alimentary tract, constitutes 2% of all malignant neoplasms of the gastrointestinal (GI) tract occur in the small intestine. Most commonly found lesions are NHL etc. Cancer of the stomach, also called gastric cancer, is the fourth-most-common type of cancer and the second-highest cause of cancer death globally. Eastern Asia (China, Japan, Korea, Mongolia) is a high-risk area for gastric cancer, and North America, Australia, New

Zealand and western and northern Africa are areas with low risk. The most common type of gastric cancer is adenocarcinoma, which causes about 750,000 deaths each year.⁶ Important factors that may contribute to the development of gastric cancer include diet, smoking and alcohol consumption, genetic aspects (including a number of heritable syndromes) and infections (for example, *Helicobacter pylori* or Epstein-Barr virus) and pernicious anemia. Chemotherapy improves survival compared to best supportive care, however the optimal regimen is unclear.¹⁰

Gastric cancer develops within areas (field defects) of the stomach with atrophic gastritis and intestinal metaplasia: these lesions represent the cancerization field in which (intestinal-type) gastric cancers develop. In one study, the field defect was clearly demonstrated in gastric carcinogenesis using miRNA high throughput data from normal gastric mucosa (from patients who had never had a gastric malignant neoplasm), non-tumor tissue adjacent to a gastric cancer, and gastric cancer tissue. Greater than 5-fold reductions were found in four miRNAs in tumor-adjacent tissues and gastric cancers as compared to those miRNA levels in normal gastric tissues.¹¹

A Mediterranean diet lowers the risk of cancer as does the stopping of smoking. There is tentative evidence that treating *H. pylori* decreases the future risk. If cancer is treated early, many cases can be cured. Treatments may include some combination of surgery, chemotherapy, radiation therapy, and targeted therapy. If treated late, palliative care may be advised. Outcomes are often poor with a less than 10% five-year survival rate globally. This is largely because most people with the condition present with advanced disease. In the United States five-year survival is 28% while in South Korea it is over 65% partly due to screening efforts.¹²

CONCLUSION

The most common histologic type reported was intestinal followed by diffuse and mixed. Males showed higher prevalence over females.

REFERENCES

1. Si-Chun M. Gastric carcinoma. *Cancer*. 1977; 39: 2475-85.
2. Gangadharan D, Reddy DB. Carcinoma of the stomach. *Ind J Path Bact*. 1962; 5: 80-92.
3. Donald A, Antonioli, Goldman H. Changes in the location and type of gastric adenocarcinoma. *Cancer*. 1982; 50: 775-81.
4. Cassell P, Robinson JO. Cancer of the stomach: a review of 854 patients. *Br J Surg*. 1976; 63: 603-07.
5. Schindler R, Steiner PE, Smith WM, Dailey ME. The classification of gastric carcinoma. *Surg Gynaecol Obst*. 1941; 73: 30-39.
6. Cruze K, Mass HE, Clarke JS, Mass HE, Clarke JS, Sabriel Farra BA. Squamous cell carcinoma of the stomach: a case report. *Gastroenterol*. 1960; 39: 787-89.
7. Yamashina M, Flinner RA. Concurrent occurrence of adenocarcinoma and carcinoid tumour in the stomach: A composite tumour or collision tumours. *J Clin Pathol*. 1985; 38: 233-36.
8. Morson BC. Intestinal metaplasia of gastric mucosa. *Brit J Cancer*. 1995; 9: 365-77.
9. Sipponen P, Kekki M, Siurala Max. Atrophic chronic gastritis and intestinal metaplasia in gastric carcinoma. *Cancer*. 1983; 52: 1062-68.
10. Miettinen M, Lasota J. Gastrointestinal stromal tumors: review on morphology, molecular pathology, prognosis and differential diagnosis. *Arch Pathol Lab Med* 2006;130:1466-1478.
11. Gascoynar D, Muller-Hermelink HK, Chott A, et al. B cell lymphoma of the small intestine. In Hamilton SR, Aaltonen LA, eds. WHO Classification of Tumors, Pathology, and Genetics: Tumors of the Digestive System. Lyon, France: IARC Press, 2000:83-86.
12. Domizio P, Owen RA, Shepherd NA, et al. Primary lymphoma of the small intestine: a clinicopathological study of 119 cases. *Am J Surg Pathol* 1993;17:429-442

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