

A CLINICOPATHOLOGICAL STUDY OF PRIMARY GASTRIC MALIGNANCY AND ITS COMPARISON WITH PRIMARY GASTROINTESTINAL MALIGNANCY IN TERTIARY CARE HOSPITAL IN SOUTH INDIAN. Rajesh Kumar¹**HOW TO CITE THIS ARTICLE:**

N. Rajesh Kumar. "A Clinicopathological Study of Primary Gastric Malignancy and its Comparison with Primary Gastrointestinal Malignancy in Tertiary Care Hospital in South India". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 29, April 09; Page: 4986-4992, DOI: 10.14260/jemds/2015/726

ABSTRACT: OBJECTIVES: The aim of the study is to determine the clinico-pathological features of primary gastric tumors and to compare with primary gastrointestinal malignancies. **MATERIALS AND METHODS:** 152 patients with primary Gastric tumors diagnosed over a 5 year period studied clinically and histopathologically they were classified using the Fletcher classification and compared with 300 primary gastrointestinal tumors. **DIAGNOSIS: RESULT:** 152 patients (50.6%) were Gastric malignancies arising out of 300 primary gastrointestinal malignancies, with a female to male ratio of 2.4: 1. Majority was males, majority were non vegetarians and most of the males were alcoholics and smokers. The mean age of the male patients was 46 years with age varying from 19–83 years, while for females, the mean age was 48 years, ranging from 40-70 years. Abdomen pain was the most common presenting symptom (70%), and the most common primary site was stomach (50, 6.2%), followed by large intestine (16%). Most of the gastric tumors were ulceroproliferative lesion and adenocarcinoma. **CONCLUSION:** Primary gastric malignancy constitute about 50.6% of all gastrointestinal malignancies males commonly affected (2.4:1) and more common in alcoholics and non vegetarians. Abdomen pain was the common presenting symptom ulceroproliferative type is common gross presentation (67.7%), adenocarcinoma (9, 97.3%) was the commonly tumor, pylorus and antrum was common site (57.9%).

KEYWORDS: Primary gastric malignancy.

INTRODUCTION: Carcinoma is the most important and the most common (90% to 95%) of malignant tumors of the stomach. Next in order of frequency are lymphomas (4%), carcinoids (3%), and mesenchymal tumors (2%) which include gastrointestinal stromal tumors, leiomyosarcoma, and schwannoma.¹

Gastric carcinoma is the second most common tumor in the world. Its incidence, however, varies widely, being particularly high in countries such as Japan, Chile, Costa Rica, Colombia, China, Portugal, Russia, and Bulgaria, and fourfold to six fold less common in the United States, the United Kingdom, Canada, Australia, New Zealand, France, and Sweden.² It is more common in lower socioeconomic groups and exhibits a male-to-female ratio of about 2:1. Diet and environmental factors are two reasons suggested for disparity in incidences of gastric carcinoma in various countries.³

In most countries, there has been a steady decline in both the incidence and the mortality of gastric cancer over the past six decades. In 1930, gastric cancer was the most common cause of cancer death in the United States⁴. Between 1930 and 1998, the annual mortality rate in the United States dropped from about 38 to 5 per 100,000 for men, and from 28 to 3 per 100,000 for women. Yet it causes 2.5% of all cancer deaths in the United States and is the leading cause of cancer death

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worldwide. *Helicobacter Pylori* has been implicated in the pathogenesis of both gastric carcinoma and gastric lymphoma.¹

MATERIAL AND METHODS: A total of 300 patients with gastrointestinal tumors out of which 152 gastric tumors diagnosed at Tertiary Care Hospital in Tamil Nadu, India over a period of 5 years were studied and medical records of all the patients were reviewed and clinical, the data on gastric tumors was analyzed with respect to age, sex and site incidence, clinical presentations, gross and histological information was recorded in a structured questionnaire form. The laboratory and radiological work-up done. The demographics, clinical presentation and associated syndromes, the lab investigations and computed tomography (CT), magnetic resonance imaging (MRI) and endoscopy findings were collected. The immune histochemical profile and special stains was performed were ever indicated.

RESULTS: A total of 19955 surgical specimens were received at the Department of Pathology in the tertiary care hospital, over a period of five years. Out of these, gastrointestinal specimens were 2724, constituting 13.6% of all the specimens received and 300(11%) specimens were malignant.

Total no of specimens	Gastrointestinal specimens	Gastrointestinal Malignancies
19955	2724(13.6%)	300(11%)

Table 1: Incidence of gastrointestinal specimens & GI malignancies

Site and sex incidence of gastrointestinal malignancies:

In the present study, stomach was the commonest site followed by, large intestine, esophagus and small intestine. There was male preponderance except in small intestine where there was female preponderance.

Site	Site of origin	Male	Female	M:F
Esophagus	45(15%)	35(77.7%)	10(32.3%)	3.5:1
Stomach	152(50.6%)	108(71%)	44(29%)	2.4:1
Small intestine	11(3.6%)	5(45.4%)	6(54.6%)	1:1.2
Large intestine	92(30.6%)	56(60.8%)	36(39.2%)	1.5:1
Total	300	204(68%)	96(32%)	2.1:1

Table 2: Site of origin and sex incidence of GI malignancies in the present study

In the present study, stomach was the commonest site followed by, large intestine, esophagus and small intestine. There was male preponderance except in small intestine where there was female preponderance.

Age incidence of gastrointestinal malignancies: In the present study of the gastrointestinal malignant tumors, the age incidence varied from 19 years to 83 years, with peak age incidence in 6th decade followed by 5th and 7th decade. The mean age and median age of gastrointestinal malignant tumors are 52.17 and 53 respectively.

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Except in small intestine which showed slight female preponderance, the other sites which are included in the study showed male preponderance irrespective of age group.

Age in yrs	11-20		21-30		31-40		41-50		51-60		61-70		71-80		81-90	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Esophagus	-	1	-	-	2	1	6	3	17	3	9	1	1	1	-	-
Stomach	1	-	2	3	16	9	32	14	33	13	21	4	2	2	-	-
Small intestine	-	-	-	-	1	1	-	3	3	1	1	1	-	-	-	-
Large intestine	-	1	3	1	10	6	12	8	18	15	7	4	5	1	1	-
Total	1	2	5	4	29	17	50	28	71	32	38	10	8	4	1	-

Table 3: Age incidence of GI malignancies in the present study

Presenting complaints of gastrointestinal malignancies: There is great variation in the presenting symptoms depending upon the site involved.

In esophagus, the presenting symptoms in the decreasing order of frequency are dysphagia, anorexia, weight loss, hematemesis and abdominal pain.

In stomach, weight loss, anorexia, vomiting, abdominal pain is the commonest presenting symptoms and dysphagia, hematemesis, altered bowel habits are present in few cases.

Altered bowel habits, abdominal discomfort, is the commonly presenting symptom in small intestine followed by vomiting, abdominal pain and general weakness

In large intestine, the presenting symptoms in the decreasing order of frequency are abdominal pain, bleeding per rectum, altered bowel habits, painful defecation, malena, general weakness, abdominal discomfort, constipation, perianal pain, anorexia and diarrhea.

Presenting complaints	No. of patients			
	Esophagus	Stomach	Small intestine	Large intestine
Dysphagia	43	4	-	-
Weight loss	32	117	-	-
Anorexia	38	140	-	6
Vomiting	5	130	4	2
Hematemesis	13	5	-	-
Abdominal pain	8	138	2	42
Altered bowl habits	-	3	7	23
General weakness	-	-	01	16
Bleeding per rectum	-	-	-	32
Painful defecation	-	-	-	17
Malena	-	-	-	10
Abdominal discomfort	-	-	7	8
Perianal pain	-	-	-	8
constipation	-	-	-	9
Diarrhea	-	-	-	5

Table 4: Presenting complaints of gastrointestinal malignancies

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GASTRIC MALIGNANCIES: The most common site of malignant tumors of the stomach are in the pylorus & antrum followed by equal frequency in body and in cardia & fundus. There is high male preponderance in all the sites throughout the stomach.

Site	No. of cases	Males	Females	M:F
Cardia & fundus	32(21.05%)	21	11	1.9:1
Body	32(21.05%)	22	10	2.2:1
Pylorus & antrum	88(57.89%)	65	23	2.8:1

Table 5: Site of origin of malignancies in stomach

Gross appearance of gastric malignancies: Most of the gastric carcinoma presented grossly as ulcerative pattern of growth (67.7%) followed by fungating, polypoid and infiltrative pattern of growth in decreasing order of frequency. These are more predominant in males.

Gross appearance	No. of cases	Males	Females	M:F
Ulcerative	103(67.76%)	80	23	3.4:1
Polypoid	13(8.55%)	7	6	1.16:1
Fungating	28(18.42%)	16	2	8:1
Infiltrating	8(5.26%)	6	2	3:1

Table 6: Gross appearance of gastric malignancies

Incidence and sex wise distribution of various histological types of gastric malignancies: In the present study majority of the gastric malignant tumors are adenocarcinomas constituting 97.3% of all gastric tumors, with male: female ratio of 2.6:1.

Histological type	Total cases	Males	Females	M:F
Adenocarcinoma	148(97.3%)	107(72.2%)	41(27.8%)	2.6:1
Poorly diff carcinoma	4(2.6%)	1(25%)	3(75%)	1:3

Table 7: Incidence and sex wise distribution of various histological types of gastric malignancies

Incidence, age and sex wise distribution of various histological types of gastric malignancies: Adenocarcinoma are common in 4th, 5th, 6th, 7th decades and more frequently occurred in males.

Histological type	Age in yrs													
	11-20		21-30		31-40		41-50		51-60		61-70		71-80	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Adeno carcinoma	1	-	2	3	16	9	32	13	33	12	20	3	2	2
Poorly diff carcinoma	-	-	-	-	-	-	-	1	-	1	1	1	-	-

Table 8: Incidence, age and sex wise distribution of various histological types of gastric malignancies

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DISCUSSION:

GASTROINTESTINAL MALIGNANCIES: In the present study of gastrointestinal malignancies, maximum incidence was observed in stomach (50.6%) followed by large intestine (30.6%), esophagus (15%) and small intestine (3.6%) while esophagus (42%) followed by stomach (24%) and intestine (34%) was most commonly involved in the earlier study.⁵

An overall male preponderance among malignancies of GI tract, and female preponderance among small intestine malignancies observed in the present series is similar to available reports.⁵

The peak incidence in 6th decade and the mean age of 52.7 years observed in the present study also correlates with the earlier studies.⁵

GASTRIC MALIGNANCIES:

Age and sex distribution: In the present series, the youngest age of gastric malignancies occurred in a 19 year old patient while the oldest patient was 83 years old, with peak age incidence in 6th decade followed by 5th and 7th decade with median age of 50 years which is less than the earlier studies. There is male preponderance similar to the earlier studies.^{4,5,2,3,6} [Table 9]

Series	Median age	Sex ratio
J. C. Paymaster et al ⁴ (1968)	54.4 years	3.4:1
Si Chun Ming et al ⁵ (1977)	-	1.5:1
Harold J. Wanebo et al ⁶ (1993)	70.6 years	1.7:1
Jamal Hamdi et al ² (1994)	60 years	4.6:1
Hajiani Eskandar et al ⁶ (2006)	60.6 years	2.6:1
Present study	50 years	2.4:1

Table 9: Comparative analysis of median age and sex incidence of gastric malignancies

Clinical Presentation: In the present series, patients have presented with anorexia, abdominal pain vomiting and weight loss in that order of frequency which is similar to the earlier reports while dysphagia, hematemesis and altered bowel habit were also encountered in some cases.^{2,7}

Location: In the present study, pylorus & antrum (57.89%) are most commonly involved followed by body, cardia and fundus similar to the earlier reports, while predominant involvement of cardia & fundus was reported in one series.^{2,3,5} [Table 10]

Site	J. C. Paymaster et al ⁵ (1968)	Harold J. Wanebo et al ² (1993)	Jamal Hamdi et al ³ (1994)	Present study(2007)
Upper third/cardia & fundus	18%	30.5%	26%	21.05%
Middle third/body	24%	13.9%	27%	21.05%
Lower third/antrum & pylorus	58%	26%	47%	57.89%
Entire stomach	-	10%	-	-
unknown	-	20.2%	-	-

Table 10: Comparative analysis of locations of malignancies in stomach

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Macroscopic appearance: In the present series, gastric malignancies most commonly presented as ulcerative growths (67.7%) followed by fungating (18.4%), polypoid (8.5%) and infiltrative (5.2%) growth while predominance of fungating lesions was reported to be the most common pattern followed by ulcerative and diffuse pattern. in an earlier study.^{8,9}

Histological type of gastric malignancies: In the present study majority of the gastric malignant tumors are adenocarcinomas (69.07%), as reported by earlier workers.^{2,3,5,6,8,10,11}[Table 11]

Histological type	Harold J. Wanebo et al ⁴ (1993)	Jamal Hamdi et al ³ (1994)	Hajiani Eskandar et al ⁶ (2006)	NCRP ⁸ (2007)	Present study(2007)
Adenocarcinoma	84.3%	75%	94.5%	60.5%	69.07%
Diffuse adenocarcinoma	1.4%	11%	-	-	-
Signet ring cell carcinoma	8.3%	-	-	26.0%	-
Mucinous adenocarcinoma	2.8%	-	-	1.1%	20.3%
Intestinal type adenocarcinoma	1.3%	-	-	-	-
Papillary adenocarcinoma	0.8%	-	-	0.2%	7.8%
Adenosquamous	0.2%	-	-	-	-
Malignant lymphoma	-	14%	2.3%	-	-
Poorly differentiated	-	-	-	-	2.6%
Undifferentiated	0.8%	-	-	-	-
Tubular adenocarcinoma	0.1%	-	-	-	-
Others	-	-	3%	5.9%	-

Table 11: Comparative analysis of microscopic appearance of gastric malignancies

CONCLUSION: The current study showed 50.6 % were gastric malignancies of the gastrointestinal malignancies, stomach is the commonest site followed by large intestine, esophagus, and small intestine in decreasing order of frequency. Men (71%) are more commonly affected than women with a mean age of 52.17 and median age of 53 years, the youngest patient affected is 19 years old and the oldest patient is 78 years old. Tumor more common in the fourth and fifth decade of life. Weight loss, anorexia, vomiting, abdominal pain is the commonest presenting symptoms and dysphagia, hematemesis, altered bowel habits are present in few cases. Pylorus and antrum was commonest site (57.98%) followed by equal promotion in cardia, fundus and body. The commonest gross presentation was ulcerative type (67.76%) followed by fungating type (18.4%). Adenocarcinoma was the most common histological type (97.3).

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FINANCIAL OR OTHER
COMPETING INTERESTS: None

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Date of Submission: 30/01/2015.
Date of Peer Review: 31/01/2015.
Date of Acceptance: 27/03/2015.
Date of Publishing: 08/04/2015.