www.jmscr.igmpublication.org
Impact Factor 5.244
Index Copernicus Value: 83.27
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v4i10.87

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

A Retrospective and Single Centric Histopathological Study of Gastrointestinal Tumors from 2011 to 2015

Authors
Dhara H. Dadhania[1*], Shaila N. Shah[2]
[1,2]Department of Pathology, Government Medical College, Bhavnagar, INDIA
*Corresponding Author
Dr Dhara H. Dadhania
3rd year Resident, Department of Pathology, Govt. Medical College, Bhavnagar-364001
Email: *dr.dharadadhania@gmail.com*

ABSTRACT

Background: *This study was carried out to evaluate and to correlate the various histopathologic types of tumors at different sites of gastrointestinal tract in relation to age and sex of the patients.*

Materials and Methods: *A cross-sectional histopathological study of gastrointestinal tumors of 117 cases was carried out retrospectively; on biopsies and surgical specimens received from department of Surgery of a teaching institute, from January-2011 to December-2015. Specimens were sent in 10% formalin, ten times that of the specimen's volume; and kept for 24 hours in 10% formalin for proper fixation, subsequently dehydration, clearing, embedding in paraffin wax were carried out. Blocks were made, sections of 3-4µm thicknesses were cut and stained with Harris Haematoxylin and Eosin stain and observed microscopically.*

Results: *From the total 117 cases of gastrointestinal tumors: 72 were males and 45 were females with peak occurrence in sixth decade and anatomical distribution was in esophagus 50(42.74%), stomach 11(9.40%), small intestine 09(7.69%), appendix 00(0%), colon and rectum 40(34.19%), anal canal 07(5.98%) with histological types- epithelial 95(81.20%), mesenchymal 09(7.69%), lymphoma 03(2.57%), poorly differentiated carcinoma 07(5.98%), metastatic 02(1.71%) and others 01(0.85%).*

Conclusion: *Gastrointestinal tumors show a wide variation in the morphology. So, histopathological examination is must for the diagnosis and typing of these tumors. The peak age distribution was in the sixth decade. Male to female ratio was 1.6:1. The occurrence of gastrointestinal tumors was highest in the esophagus accounted for 42.74% of all cases. Most common type of malignancy was adenocarcinoma.*

Keywords: *Gastrointestinal Tumors, Histopathological examination, Adenocarcinoma.*

INTRODUCTION

Gastrointestinal tumors account for a large proportion of all neoplasms.[1] Colorectal cancer ranks second and stomach cancer ranks fourth among the most common tumors of the world, according to the World Cancer Report of 2000. [2] Curiously the small intestine is an uncommon site for tumor despite its great length and vast pool of dividing cells. There is worldwide variation in the distribution of these neoplasms, which appear largely due to exogenous factors rather than genetic.[3] The various histologic types of tumors at different gastrointestinal sites also differ in their incidence and prognosis.

Tumors arising from the mucosa of stomach and intestines predominate over mesenchymal and stromal tumors. Adenocarinomas constitute 70%

of all malignancies arising in the gastrointestinal tract. Without exception, all tumors are incurable when metastasis exists. However effective treatment in case of lymphoma and stromal tumors is likely to result in cure.[1] This study is undertaken to determine the relative frequency of various histopathologic types of gastrointestinal tumors, knowledge about their prognosisand to correlate the different types of these tumors in relation to age and sex of the patients.

MATERIALS AND METHODS

A cross-sectional histopathological study of gastrointestinal tumors of 117 cases was carried out retrospectively; on biopsies and surgical specimens received from department of Surgery of a teaching institute, from January-2011 to December-2015. All the data were collected from the reporting register of Histopathology department of the same institute and all the data were analysed by the software (Microsoft Excel). Specimens were sent in 10% formalin, ten times that of the specimen's volume. Specimens were kept for 24 hours in 10% formalin for proper fixation, subsequently dehydration, clearing and embedding in paraffin wax were carried out. Blocks were made, sections of 3-4µm thicknesses were cut and stained with Harris Haematoxylin and Eosin stain and observed microscopically.

Procedure of staining

Dewax sections in Xylene giving two changes for 20 minutes then hydrate sections in descending grade of alcohol, bringing them to water. Place sections in Haematoxylin for 5-10 minutes and wash in running water for 5 minutes then differentiate in 1% Acid alcohol (1 dip) and wash with water immediately, place in running water for 5 minutes and place in Eosin for 10 Seconds. Give 5 dips in running water then dehydrate through alcohols, clear and mount with DPX.

RESULTS

The total of 117 cases: 72 were males and 45 were females with peak occurrence in sixth decade. The most common malignancy in the present study was esophageal malignancy accounted for 42.74% of all cases and second most common carcinoma was colorectal carcinoma followed by carcinoma of stomach and small intestine (anatomical distribution is shown in Table 1).The distribution of Gastrointestinal Tumors age and gender wise are shown in Fig. 1 and Fig. 2 respectively. The histological types were epithelial 95(81.20%), mesenchymal 09 (07.69%), lymphoma 03 (02.57%), poorly differentiated carcinoma 07 (05.98%), metastatic 02(01.71%) and others 01 (00.85%) (Table 2). Most common type of malignancy was adenocarcinoma and the most common site was colon.

Table 1: Anatomical distibution of Gastrointestinal tumors

Site	Number	%
Esophagus	50	42.74
Stomach	11	9.40
Small Intestine	09	7.69
Colon and Rectum	40	34.19
Anal Canal	07	5.98
Total	117	100

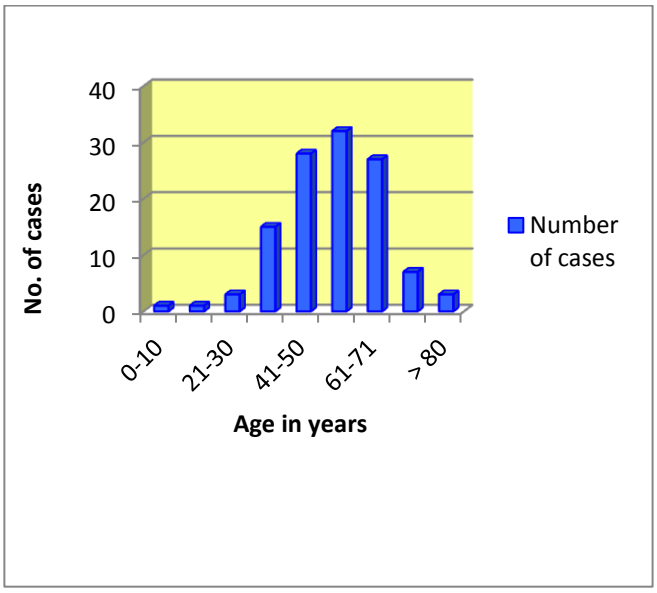

Fig. 1 Age distibution of Gastrointestinal tumors

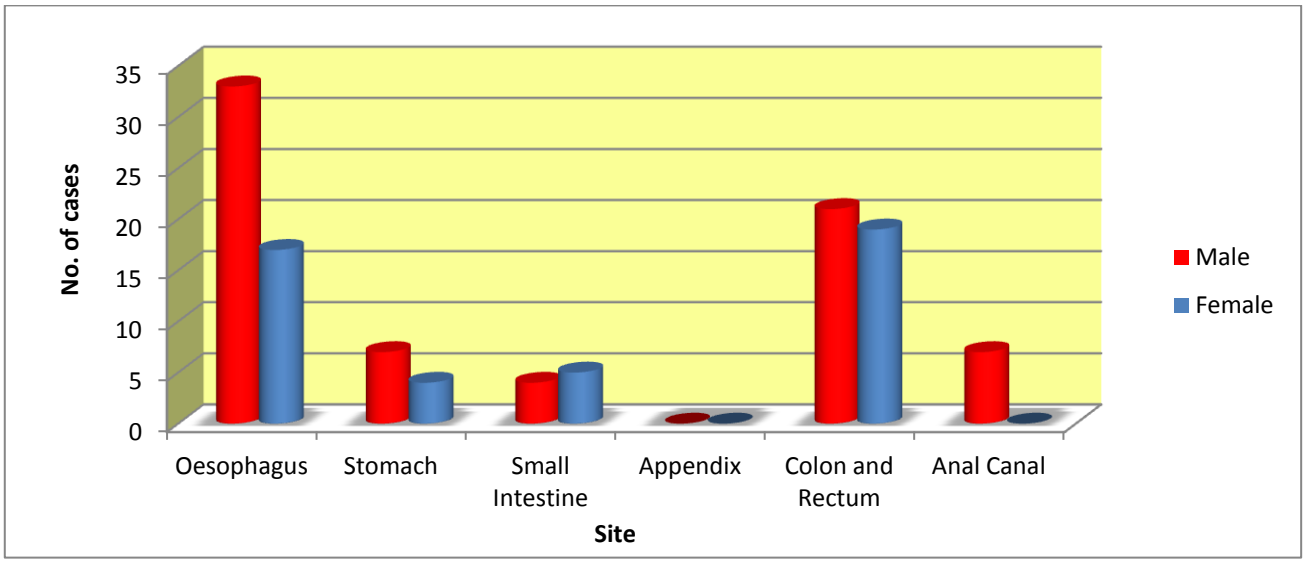

Fig. 2 Gender distribution of Gastrointestinal tumors

Table 2: Histological types of Gastrointestinal tumors

Site	Esophagus	Stomach	Small Intestine	Colon and Rectum	Anal canal	Total	%
Epithelial	43	04	05	36	07	95	81.20
Mesenchymal	00	07	02	00	00	09	7.69
Lymphoma	00	00	01	02	00	03	2.57
Poorly differentiated Ca	06	00	00	01	00	07	5.98
Metastatic	01	00	01	00	00	02	1.71
Others	00	00	00	01	00	01	0.85
Total	50	11	09	40	07	117	100

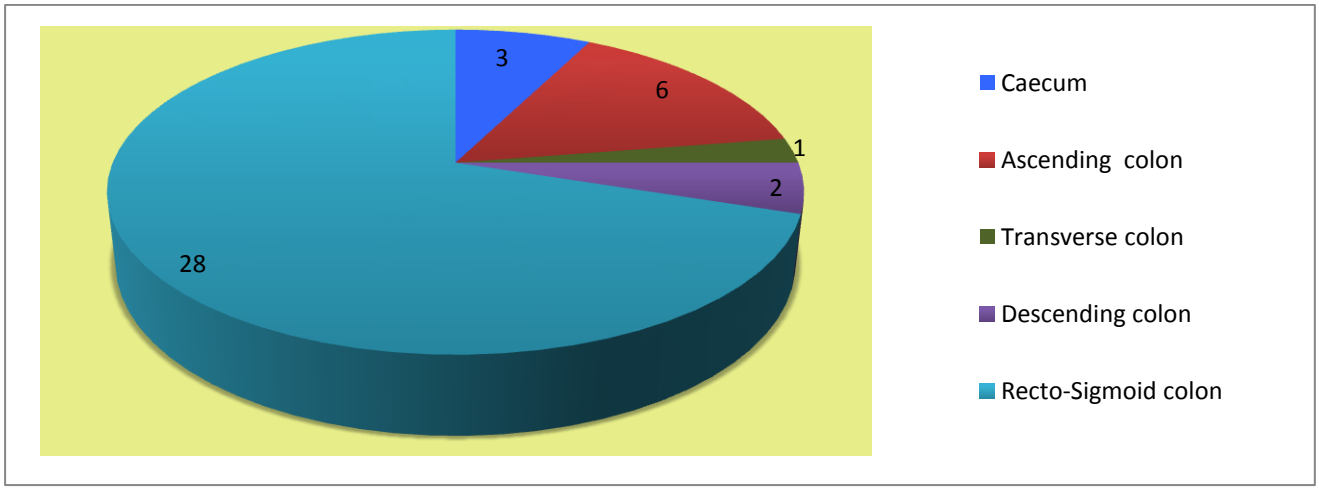

Fig. 3 Anatomical distribution of colorectal carcinomas

According to anatomical distribution shown in Fig.3; Recto-sigmoid colon 28 (70%) was the most common site among total 40 (100%) cases of colorectal carcinomas. In Table 3; the histological variants of colorectal carcinomas are tabulated that Adenocarcinomas were majority accounted for 65% of all colorectal tumors.

Table 3: Histological variants of colorectal carcinomas

Variants	Number	%
Adenocarcinoma	26	65.00
Mucinous Adenocarcinoma	05	12.50
Signet ring cell Carcinoma	04	10.00
Malignant Melanoma	01	02.50
Non-Hodgkin's Lymphoma	02	05.00
Carcinoid tumor	01	02.50
Poorly differentiated Ca	01	02.50
Total	40	100

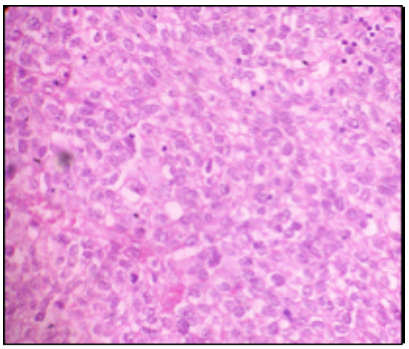

Fig. 4 Photomicrograph of GIST of stomach- pure epitheloid variant (H&E, 40X)

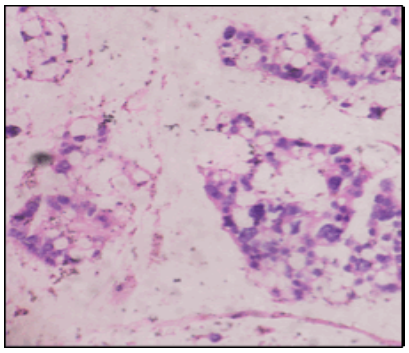

Fig. 5 Photomicrograph of Mucinous adenocarcinoma of colon with signet ring cells(H&E, 40X)

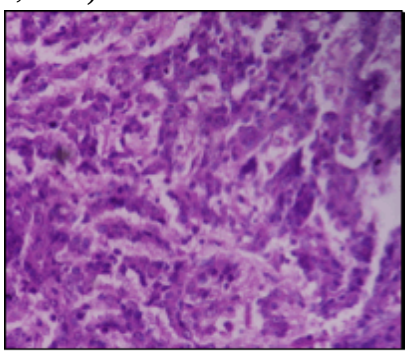

Fig. 6 Photomicrograph of Malignant carcinoid tumor of colon (H&E, 40X)

Photomicrographs of GIST of stomach-pure epitheloid type, Mucinous adenocarcinoma of colon with signet ring cells and Malignant carcinoid tumor of colon are shown in Fig. 4, Fig. 5 and Fig. 6 respectively.

DISCUSSION

Gastrointestinal Tumors were seen over a wide range of age (03 years to 88 years). The highest distribution was found in the 6th decade, which was consistent with the study by Assem O. et al, 2000 [4] and Patel Mandakini et al, 2012 [5]. However the peak distribution was 7th decade in study done by Mohammad et al, 2005 [3]. A male predominance was observed in this study with a male to female ratio of 1.6:1 which is consistent with study by Assem O. et al, 2000 [4]. While male to female ratio was1.39:1 and 2.28:1 in studies by Patel Mandakini et al, 2012 [5] and Shahid Jamal et al, 2005 [6] respectively. The histological types of Gastrointestinal Tumors showed immense variation. However, adenocarc-inomas were the commonest tumors all over the gastrointestinal tract. The present study also showed similar findings. The anatomical site commonly involved was esophagus, constituting 42.74% of all gastrointestinal cancers which was consistent with study by Patel Mandakini et al, 2012 [5]. However in study by Leena Devi et al, 1980 [7] and Abdul Kareem et al, 2011 [8]; majority cases were of recto-sigmoid colon and transverse colon respectively.

CONCLUSION

Gastrointestinal tumors show a wide variation in the morphology. So, histopathological examinat-ion is must for the diagnosis and typing of these tumors. The peak age distribution was in the sixth decade. Males outnumbered females with a male to female ratio of 1.6:1. The occurrence of gastrointestinal tumors was highest in the esophagus accounted for 42.74% of cases. Adenocarcinomas were common all over the gastrointestinal tract, accounted for 41.03%; majority were well differentiated. 17 cases were presented with Lymph node Metastasis and 2 cases were presented with Distant Metastasis.

REFERENCES

1. Kumar, Abbas, Fausto, Aster. *Robbins andCotran's Pathologic basis of Disease* 8th ed. (Philadelphia: Saunders; 2010) 763-832.
2. Norio Matsukura, Hiroko Ohgaki, Rens Lambert. *World Cancer Report, IARC Press Lyon 2003; 194-202.*
3. Mohammad A, Makaju R. Retrospective histopathological analysis of various neoplasms of different parts of the

gastrointestinal tract seen at the Kathmandu University Teaching Hospital (KUTH),Nepal. *Kathamandu University Medical Journal 2005; 4: 474-478.*

4. Assem O. et al. Primary gastrointestinal cancers in the Western Region of Saud Arebia. *Saudi Medical Journal 2000;21(8):730-734.*
5. Patel MM, Gamit B, Patel PR. Analysis of gastrointestinal malignancy:A Five Years study. *National Journal of Community Medicine 2012; 3(3):555-557.*
6. Shahid J, Nadira M, Sajid M, Muhammad L, Analysis of Gastrointestinal malignancy at Armed Forces Institute of Pathology (AFIP),Ravalpindi,Pakistan. *Asian pacific journal of cancer prevention 2005; 6:497-500.*
7. Leena Devi KK, Suvarna N. Patterns of Gastrointestinal tumors in North Kerala. *Indian Journal of Cancer 1980; 17: 159-163.*
8. F. B. Abdulkareem et al. Malignant Gastrointestinal Tumors in western Nigeria: A Histopathologic analysis of 713 cases. *West African Journal of Medicine 2009; 8:173-176.*