

REPORTS OF GASTROINTESTINAL CANCERS AT BAHAWAL VICTORIA HOSPITAL, BAHAWALPUR – PAKISTAN

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ABSTRACT

Background and Objectives: Gastrointestinal (GI) cancers are amongst the common tumours showing a rise in incidence globally. This study aims to establish the pattern of gastrointestinal malignancies in southern Punjab – Pakistan. This is a retrospective tumour record data analysis based upon histopathology. It was carried out from January 2004 to December 2006 at the Department of Pathology, Quaid-e-Azam Medical College / Bahawal Victoria Hospital, Bahawalpur – Pakistan.

Methods: Data of all the biopsy proven malignancies of gastrointestinal tract was retrieved from individual case files from the record of Pathology Department. The epidemiological data was reviewed and analysed for the site of involvement, age, sex and the histological types of cancers.

Results: During 3 years of study a total of 151 patients were diagnosed having gastrointestinal (GI) tract malignancies. One hundred two males and 49 females were affected (M:F ratio 2.1:1). Majority of the cancer stricken patients in our population were relatively young, falling in the age range of 45 – 65 years. Colorectal carcinomas were most frequent (35%), followed by oesophagus (13.9%), liver and bile ducts (11.9%), stomach (11.2%), gall bladder (5.2%), tongue (4.6%), pancreas (3.9%), small intestine (3.3%), and lip (2.6%) malignancies. One case of malignant tumour of the appendix in a male was also found.

Conclusion: Colorectal cancer is the commonest GI tumour reported in south Punjab – Pakistan. Cases less than 25 years of age were more frequent and peak incidence was in a younger age group in our population when compared to different Western studies. Adenocarcinoma, squamous cell carcinoma and hepatocellular carcinoma were the most frequent histological subtypes in colon and rectum, oesophagus and liver respectively.

INTRODUCTION

Gastrointestinal cancers are among the commonest tumours showing a rise in incidence globally.^{1,2} Colorectal cancer is the second most common cause of cancer mortality worldwide. Mortality from gastric carcinoma has decreased significantly in recent years but remains a major public health concern in developing countries and is still the fourth most common cancer worldwide. Pancreatic cancer is the fifth most common cancer in females and fourth in males. The hepatocellular carcinoma (HCC) is the sixth and esophageal cancer the eighth most common cancer in the world.³ A high prevalence of both oral cavity and gastrointestinal malignancy in both genders has been reported from India recently.⁴ According to a nine year study of patients reporting to Karachi Institute of Radiology and Nuclear Medicine, GI cancer was the 3rd most common malignancy in males and 4th in females.⁵ Numerous studies have reported the pattern of malignancy in gastrointestinal tract from different regions of Pakistan like Karachi, Lahore, Peshawar, Faisalabad and Rawal-

pindi but none from south Punjab. This study aims to establish the pattern of gastrointestinal malignancies in southern Punjab, Pakistan by analysing the cases reported at the tertiary care health facility Bahawal Victoria Hospital, Bahawalpur.

MATERIALS AND METHODS

Design

A retrospective tumour record data analysis based upon histopathology.

Place and Duration

January 2004 to December 2006 at the Department of Pathology, Quaid-e-Azam Medical College / Bahawal Victoria Hospital, Bahawalpur – Pakistan.

METHODS

Data of all the biopsy proven malignancies of gastrointestinal tract was retrieved from individual case files from the record of Pathology Department. The epidemiological data was reviewed and analysed for

the site of involvement, age, sex and the histological types of cancers.

RESULTS

During 3 years of study a total of 151 patients were diagnosed having a GI tract malignancy. One hundred and two males and 49 females were affected. Male to female ratio was 2.1:1 (Table 1). Majority of the cancer stricken patients in our population were relatively young, falling in the age range of 45 – 65 years.

Table 1: Sex distribution in malignant GI tumours.

Sex	Number	Percentage (%)
Male	102	67.54
Female	49	32.46
Total	151	100.0

Table 2: Frequency of sites in GI tract affected by malignancy.

	Site	Number	Frequency
1.	Colon and Rectum	53	35%
2.	Oesophagus	21	13.9%
3.	Liver and Bile Ducts	18	11.9%
4.	Stomach	17	11.2%
5.	Gall Bladder	8	5.2%
6.	Tongue	7	4.6%
7.	Omentum (metastatic)	7	4.6%
8.	Pancreas	6	3.9%
9.	Small intestine	5	3.3%
10.	Lip	4	2.6%
11.	Anal Canal	4	2.6%
12.	Appendix	1	0.6%
	Total	151	100%

Colorectal carcinomas were most frequent GI cancers according to our data. Details of frequency of sites in GI tract affected by malignancy are given in Table 2. From surgical specimens of colon 26 (92.8%) patients were diagnosed having an adenocarcinoma while only two (7.8%) had mucinous adenocarcinoma. Diagnosis of adenocarcinoma was made in twenty two (88%) and signet ring cell carcinoma in three (12%) specimens from rectum. Peak

age of incidence of colorectal carcinoma was 49 years according to our results. Fourteen patients of colorectal carcinoma were younger than 25 years of age. Age distribution in malignant tumours of GI tract according to our results is given in Table 3. Colon and rectum were the site for almost 1/3rd (35%) of the malignancy of GI tract according to our observation as 53 out of 151 patients had colorectal carcinoma.

Table 3: Age distribution in malignant tumours of GI tract.

Age Groups (Years)	Number	Percentage (%)
15 – 25	16	10.5
25 – 35	17	11.2
35 – 45	20	13.2
45 – 55	39	25.8
55 – 65	36	23.8
65 – 75	18	12
> 75	5	3.3
Total	151	100.0

Twenty one patients suffered from carcinoma of oesophagus as 17 (81%) had squamous cell carcinoma while 4 (19%) had adenocarcinoma. Oesophagus was the second most common site (13.9%) affected by malignancy in GI tract. High frequency of oesophageal cancer in south Punjab is probably due to frequent use of pan and tobacco by indigenous population.

Sixteen patients had hepatocellular carcinoma (88.8%); one (5.5%) had cholangiocarcinoma and one (5.5%) klatskin tumour. Thus bile ducts and liver was the third most common site (11.9%) involved by malignancy in gastrointestinal tract. This is a high percentage. It can be due to the very high prevalence of chronic viral hepatitis in the region of south Punjab.

Gastric carcinoma was the fourth most common malignancy (11.2%) in this study. Sixteen (94.1%) patients had adenocarcinoma of the stomach and one had malignant lymphoma (4.9%). Frequency of gall bladder malignancy was high as 8 patients (5.2% of GI cancers) suffered from it. All of them had adenocarcinoma of gall bladder.

Seven patients had squamous cell carcinoma of tongue (4.6%). Malignancy of pancreas accounted for 3.9% as 6 patients suffered from it. Out of these 5 (83.3%) had adenocarcinoma and one had neuroendocrine carcinoma (16.6%). Small intestine accounted for 3.3% of all malignant tumours as 3

Table 4: Site wise distribution of malignant GI tumours for the years 2004 – 2006 at Bahawalpur.

ICD-O-3 Site*	Malignancy	'04	'05	'06	Total	Grand Total
COO Lip	Squamous Cell Carcinoma	1	1	2	4	4
Co1 – 02 Tongue	Squamous Cell Carcinoma	2	2	3	7	7
C15 Esophagus	Squamous Cell Carcinoma	5	6	6	17	21
	Adenocarcinoma	1	2	1	4	
C16 Stomach	Adenocarcinoma	6	4	6	16	17
	Malignant Lymphoma	0	1	0	1	
C17 Small Intestine	Adenocarcinoma	1	1	1	3	5
	B – Cell Lymphoma	1	0	1	2	
C18 Colon	Adenocarcinoma	6	7	13	26	28
	Mucinous Adenocarcinoma	1	1	0	2	
C20 Rectum	Adenocarcinoma	8	7	7	22	25
	Signet Ring Cell Carcinoma	1	0	2	3	
C21 Anal Canal	Squamous Cell Carcinoma	1	0	1	2	4
	Adenocarcinoma	0	1	0	1	
	Basaloid carcinoma	0	0	1	1	
C22 Liver and bile ducts	Hepatocellular Carcinoma	4	5	7	16	18
	Cholangiocarcinoma	0	0	1	1	
	Klatskin tumour	0	1	0	1	
C23 Gall bladder	Adenocarcinoma	3	2	3	8	8
C25 Pancreas	Adenocarcinoma	1	2	2	5	6
	Neuroendocrine Carcinoma	0	0	1	1	
Omentum	Adenocarcinoma	2	3	2	7	7
Appendix	Adenocarcinoma	1	0	0	1	1

*International classification of diseases for oncology, 3rd edition

patients suffered from adenocarcinoma (60%) of small intestine and 2 (40%) from B – cell lymphoma.

Four patients had malignancy of anal canal (2.6%); out of these 2 had squamous cell carcinoma (50%), 1 had adenocarcinoma (25%) and 1 (25%) had basaloid carcinoma.

Squamous cell carcinoma of lip was diagnosed in 4 patients (2.6%). Adenocarcinoma (probably metastatic), was the diagnosis in 7 cases (4.6%) from specimens labelled as omentum. One case of malignant tumour of the appendix in a male was also found. It was an adenocarcinoma. Complete breakup of histopathological sitewise distribution of malignant GI tumours for the year 2004 – 2006 at

Bahawalpur is given in Table 4.

DISCUSSION

According to our results male to female ratio was 2.1:1 and peak incidence was in 45 – 65 years age group (almost 50% patients of GI malignancy); roughly similar results were obtained from a study in northern Pakistan at AFIP Rawalpindi.⁶ Many patients with GI malignancy were also less than 45 years of age and this trend has been shown in Pakistani population when compared to different western studies.²

Colorectal cancer was the most common malignancy according to our study and it has been reported that it is a common malignancy with its inci-

dence rising in Pakistan.⁷ It is also the most common GI malignancy reported from northern Pakistan and Lahore.^{6,8} Thirty two (60.3%) patients of this malignancy were males; similar trend has also been documented by another study on Pakistani subjects.⁷ Adenocarcinoma was the most common type of histological malignancy in our study; similar results were obtained from Karachi and Lahore.^{2,8} Twenty six percent patients with colorectal carcinoma were younger than 25 years of age and this younger age at presentation is recognised for Pakistani population as they share many epidemiological features with developing countries for this cancer.^{9,10} Where as this cancer is very unusual in young adults in developed nations.¹¹ The peak age of incidence was 49 years while it is 65 years in the West and peaks in 6th and 7th decades of life in developed countries.^{12,11}

Malignancy of oesophagus was the second common cancer in our study while it is reported to be the third common malignancy in northern Pakistan and Lahore.^{6,8} It is probably due to the frequent use of tobacco, dietary deficiencies and less consumption of raw vegetable and fruits; similar risk factors have been proposed for its incidence in Karachi.¹³ Carcinoma esophagus was seen even more frequently than gastric and colorectal carcinoma in Karachi, while it was the first malignancy in Peshawar.^{2,14} Considering the histological type, squamous cell carcinoma was found in 81% of the patients in our study while it was the predominant type in studies conducted in Karachi and Lahore.^{2,8}

Malignancy of liver and bile ducts was the third common in our list. Sixteen cases of hepatocellular carcinoma were seen. This is probably because of high prevalence of chronic viral hepatitis in south Punjab and it has a potential to turn malignant. A recent study showed that HCV (43% alone and 6% combined infection with HBV (28%) infections are most common causes of cirrhosis at Bahawalpur and the patients affected are relatively younger (80% with age ranges from 20 – 59 years) than western studies.¹⁵ High prevalence of HCV and HBV in the country has also been documented by other investigators as well.¹⁶⁻¹⁸ Strong association between chronic HCV infection and hepatocellular carcinoma has already been demonstrated in Pakistan.¹⁹

Gastric cancer was the fourth most common malignancy in our results and its incidence is thought to be rising in Pakistan despite falling into the category of a low risk developing country.²⁰ It is reported to be the second common malignancy in northern Pakistan and Lahore while third in Karachi and Faisalabad.^{6,2,8,21} Diagnosis of adenocarcinoma was made in 94% patients of gastric carcinoma; nearly equal frequencies have been reported from Karachi and Lahore as well.^{2,8} Gall bladder cancer

ranked fifth in our list of malignancies and it is worth mentioning that Pakistan is a country where one of the highest incidence rates of gallbladder cancer world – wide are reported.²²

It is *concluded* that colorectal cancer is the commonest GI tumour reported in south Punjab – Pakistan. Cases less than 25 years of age are more frequent and peak incidence is in a younger age group in south Punjab population when compared to different Western studies. Adenocarcinoma, squamous cell carcinoma and hepatocellular carcinoma were the most frequent histological subtypes in colon and rectum, oesophagus and liver respectively.

ACKNOWLEDGEMENTS

The authors are grateful to the Chairman Department of Pathology for encouraging them to do this work.

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