



Original Article

# A study of gastrointestinal tract tumors at Kathmandu Medical College teaching hospital

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## Keywords:

Benign;  
Colorectal;  
Malignant;  
Polyp;  
Tumour;

## ABSTRACT

**Background:** Gastrointestinal tract tumour is responsible for more cancers and death than any other cancers. The tumour in GIT include the tumour of the Oral cavity, Esophagus, Stomach, Colon, Rectum, Liver, Gallbladder, Pancreas and Biliary tree.

**Materials and methods:** A cross sectional study was carried out among all the gastrointestinal tract tumours specimens received for histopathological examination in between January 2016 to June 2017 in Department of Pathology, Kathmandu Medical College Teaching Hospital. All tumors diagnosed either benign or malignant were included in this study. Ethical clearance was obtained from the Institutional Review Committee in KMCTH.

**Results:** Colorectum was found to be the most commonly involved site for malignant lesion comprising 40.2% among all malignant lesions followed by stomach comprising 28.6%. Malignancy was found to be more prevalent among male with M:F ratio of 1.6:1 in colorectal region and 1.4:1 in stomach cancers. Regarding benign lesions (polyps), rectum was found to be the commonest site (57.5%), followed by colon (20.0%) and stomach, the least common site. Malignant lesions were more common among the age group of 51-60 years (37.66%) with 70.13% above 50 years. Benign lesions were also found to be the most common above 50 years comprising 40.0 percent.

**Conclusion:** Rectum & colon was found to be the most commonly involved site for both malignant and benign lesion. Malignancy were more prevalent among male and common above 50 years of age. However, malignant cases noted in the adult age group are a matter of great concern.

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## INTRODUCTION

Cancer is a major health issue in the world despite significant development in the medical field. It is one of the major causes of morbidity and mortality worldwide.<sup>1</sup> Gastrointestinal tract (GIT) tumour are responsible for more cancers and death than any other cancers.<sup>2</sup> The tumour in GIT include the tumour of the oral cavity, esophagus, stomach, colon, rectum, liver, gallbladder, pancreas and biliary tree. Out of these, gastric cancers, colorectal cancers, liver cancers, and pancreatic cancers are the most common in Asia.<sup>3</sup> Gastric and colorectal cancers are the major cancers of the GIT. As per incidence of the malignant disease, colorectum

**Table No 1: Distribution of Malignant lesion (n=77)**

Tumor site	Age group (years)						Total	Gender	
	<30	31-40	41-50	51-60	61-70	>71		M	F
Colorectal	5	2	2	13	5	4	31(40.2%)	19	12
Stomach		1	2	7	6	6	22 (28.6%)	13	9
Oesophagus						1	1 (1.3%)	1	
Appendix		1					1 (1.3%)	1	
Ampulla		1		5		1	7 (9.1%)	5	2
Cholangiocarcinoma			2	3			5 (6.5%)	4	1
Gall bladder		1	2		1		4 (5.2%)	1	3
Pancrease			3	1			4 (5.2%)		4
CBD			1		1		2 (2.6%)		2
<b>TOTAL</b>	<b>5(6.5%)</b>	<b>6 (7.8%)</b>	<b>12 (15.6%)</b>	<b>29 (37.6%)</b>	<b>13(16.9%)</b>	<b>12(15.6%)</b>	<b>77 (100.0%)</b>	<b>44</b>	<b>33</b>

comes third most common site among male & second most common site among female worldwide.<sup>4,5</sup> Likewise, the fifth most common site for cancer in the world is stomach.<sup>6</sup> The progress of tumour development from benign to invasive cancer is a long process.<sup>7</sup> Therefore, the invasive tumour can be prevented by early diagnosis of cancer and can reduce the morbidity and mortality related to an advanced stage. An attempt was made to find out the prevalence of benign & malignant lesions in gastrointestinal & hepatobiliary system in KMCTH.

## MATERIALS AND METHODS

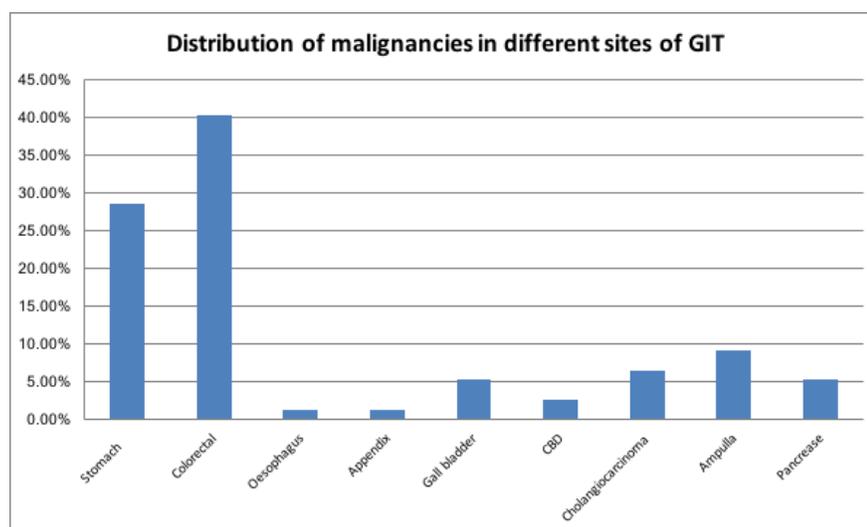
A cross sectional study was carried out in the Department of Pathology, KMCTH during the period of eighteen months from January 2016 to June 2017. Ethical clearance was obtained from the institutional review committee in KMCTH. All the histopathologically proven tumour specimens of GI tract received in Department of Pathology were included in the study. The paraffin embedded sections stained with Haematoxylin and Eosin were taken for microscopic examination. The slides were examined by

pathologists and data were recorded in the Microsoft Excel. Data analysis was performed using Microsoft Excel 2010.

## RESULTS

A total of 117 cases of lesions were studied. Among these, 77 cases were malignant and 40 cases were benign. Colorectal was the most commonly involved site for malignant lesion comprising 40.2% among all malignant lesion followed by stomach comprising 28.6%. Malignancy was found to be more prevalent among male with M:F ratio of 1.6:1 in colorectal region and 1.4:1 in stomach cancers except in gallbladder carcinoma where the M:F ratio was 1:3. (Table 1) Regarding benign lesions (polyps), rectum was found to be the commonest site (57.5%), followed by colon (20.0%) and stomach is the least common site (7.5%). (Table 2)

Malignant lesions were found to be more common among the age group of 51-60 years (37.66%) with 70.13% above 50 years. Benign lesions were also found to be the most common above 50 years comprising 40.0% but 6.5% malignant cases out of all malignant cases were observed



**Figure 1: Distribution of malignancies in different sites of GI System**

**Table 2: Benign Polypoidal lesions at various sites of gastrointestinal tract**

Polyp site	Types	Total (years)					Total	Gender	
		11-20	21-30	31-40	41-50	>50		M	F
Rectal polyp	Retention		1	1			2		2
	Inflammatory	1	1	2	1	2	7	3	4
	Hyperplastic			1		1	2	2	
	Tubular adenoma		1			4	5	1	4
	Adenomatous					6	6	3	3
	Fibroepithelial					1	1	1	
	<b>Total</b>		1	3	4	1	14	23(57.5%)	10
Colonic polyp	Adenomatous		1			1	2	1	1
	Hyperplastic			1			1	1	
	Inflammatory		1	2			3	2	1
	Tubular adenoma				1	1	2	2	
	<b>Total</b>		2	3	1	2	8(20.0%)	6	2
Sigmoid polyp	Tubulovillous			1			1	1	
	Inflammatory		1	1			2		2
	Tubular adenoma				1	2	3	2	1
	<b>Total</b>		1	2	1	2	6 (15.0%)	3	3
Gastric polyp	Hyperplastic					1	1		1
	Inflammatory	1	1				2		2
	<b>Total</b>	1	1			1	3 (7.5%)		3
<b>Grand total</b>		<b>2 (5.0%)</b>	<b>7 (17.5%)</b>	<b>9 (22.5%)</b>	<b>3 (7.5%)</b>	<b>19(47.5%)</b>	<b>40 (100.0%)</b>	<b>19</b>	<b>21</b>

among adult age group (<30 years). (Table 1 and 2)

Among the studied population, most common malignancies in gastrointestinal tract was colorectum, followed by stomach, whereas, esophageal and appendiceal malignancies were the least common site (fig. 1).

Among the benign lesions (n=40), colon was the most common site comprising 37 (92.5%) cases. In colon rectal polyp was the most frequent (n=23; 57.5%) and histologically inflammatory pseudopolyp was the most common (n=7; 17.5%). Among neoplastic polyp of colon tubular adenoma was the most common (n=9; 22.5%) followed by adenomatous polyp (n=8; 20%). Table 2 Most of the benign colorectal polyps were seen in the patients older than 50 years of age. All the tubular adenoma and adenomatous polyps were observed in patients after 40 years of age, except one from each type, which was seen in young age group (21-30 years age)

## DISCUSSION

Cancer is one of the major causes of morbidity and mortality in the world.<sup>1</sup> Among all the tumours, gastrointestinal tract tumours are responsible for more cancers and death than any other cancers.<sup>2</sup> The most common cancers in the GIT system in Asia includes Gastric cancers, Colorectal cancers, Liver cancers, Esophageal cancers and Pancreatic cancers. As per incidence colorectal cancer (CRC) is the third and Gastric

cancer is the fifth most common cancer in Asia.<sup>4-6</sup> Similarly, hepatocellular carcinoma comes sixth whereas esophageal cancer is the eighth most common cancer worldwide.<sup>8</sup>

The reason of high prevalence could be due to old age, population growth and exposure to the risk factors like smoking, chemical, obesity, Helicobacter pylori, HBV, HCV, limitation of early cancer detection and treatment services.<sup>9-13</sup>

Here in our study, out of 117 cases of lesions of GI system, 77 cases were malignant and 40 cases were benign. Colorectum was found to be the most commonly involved site for malignant lesion comprising 40.2% among all malignant lesion. Colorectal carcinoma was found to be more common among the age group of 51-60 years which was similar to the findings of a study done by Shah S et al.<sup>14</sup> It is a matter of great concern that out of all colorectal cancers, 22.6% cases were found below 40 years which was 28.77% in a study of Shah et al.<sup>14</sup> Malignancy was found to be more prevalent among male with M: F ratio of 1.6:1. The finding of Kansakar et al<sup>15</sup> was found to be 4:3 however, it was found to be equal in as study done by Shah S et al<sup>14</sup> and Khan MR et al.<sup>16</sup>

Stomach was found to be the second most commonly involved site comprising 28.6% however it was only 19.2% and 15.9% in a study done by Mohammad AM et al<sup>17</sup> and Jose L et al<sup>18</sup> respectively. Gastric carcinoma was

found to be slightly more prevalent among male with M: F ratio of 1.4:1 but it was found to be 3:1 in a study done by Mohammad AM et al.<sup>17</sup> Regarding age involvement, the finding of Mohammad AM et al.<sup>17</sup> is similar to our finding as Gastric carcinoma was found to be less prevalent below 50 years (13.6%).

Most of the malignancy arises from the pre-existing polyps, so determination of potential risk of malignancy of the polyp is essential for the treatment. Rectum was found to be the commonest site (57.5%), followed by Colon (20.0%), Sigmoid colon 15.0% and Stomach the least common site (7.5%). However in a study done by Mirzaie AZ et al.<sup>19</sup> & El-Badry AI et al.<sup>7</sup>, Colon was found to be the most commonly involved site.

Benign lesions were also found to be more common above 50 years of age comprising 47.5%, followed by 31-40 years age group (22.5%) which is similar with findings of other studies.<sup>7,19,20,21</sup> In our study, both genders were found to be almost equally involved with mild female predominance (M:F=1:1.1). However prevalence was more common among male in a study of Mirzaie AZ et al.<sup>19</sup>

## CONSLUSION

Rectum & Sigmoid colon were found to be the most commonly involved site for both malignant and benign lesion followed by Stomach. Malignancy is more prevalent among male and common above 50 years of age however malignant cases noted in adult age group is a matter of great concern.

**Conflict of interest:** None

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