

# Profile of Malignant Tumours of Gastrointestinal Tract at Jinnah Hospital, Lahore

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A morphological study of malignant tumours of gastrointestinal tract (GIT) was carried out at Department of Pathology, Allama Iqbal Medical College, Lahore for a period of three years from January 1998 to December 2000. A total of 114 cases of malignant GIT tumours were diagnosed during this period. Out of these 114 malignancies 51(44.74%) were colorectal cancers, 39(34.21%) gastric cancers, 17(14.91%) oesophageal cancers and 7(6.14%) involving the small intestine. Regarding the age incidence of patients with malignant GIT tumours, most of the patients were above the age of 30 years (87.72%) with peak incidence in the age group of 40 to 69 years (57.02%). Sex distribution shows a slight male preponderance, 60 males (52.63%) as compared to 54 women (47.37%). Considering the histological types, out of 51 cases of colorectal malignancies 48(94.12%) were adenocarcinomas whereas one case(1.47%) each shows morphology of metastatic carcinoma, basaloid carcinoma and leiomyosarcoma. In case of gastric tumours, out of 39 malignant cases, 36(92.31%) were adenocarcinomas, two (5.13%) undifferentiated carcinomas while one (2.56%) was diagnosed as squamous cell carcinoma. In case of oesophagus, out of 17 cancers, 12(70.59%) were squamous cell carcinomas and five (29.41%), adenocarcinomas. The results were tabulated and compared with similar other studies.

**Key words:** Gastrointestinal tract, malignant tumours, adenocarcinoma, squamous cell carcinoma

Gastrointestinal tract (GIT) is one of the important site affected by malignant tumours in human body<sup>1</sup>. The subsites of digestive tract commonly affected by malignancies are stomach, large intestine and oesophagus<sup>2</sup> whereas small intestine, appendix and anal canal are less commonly affected sites<sup>3</sup>. The GIT cancers show marked geographic variations in their incidence<sup>4</sup>. They also show differences in terms of frequency, location within the GIT, morphology and prognosis<sup>5</sup>.

Oesophageal cancers are more common in developing countries especially in Asia<sup>2,5</sup> where it is the second most common site for GIT malignancies<sup>6</sup>. Gastric cancers show a high incidence in Far East but declines westwards to its lowest in the United States of America<sup>2,7</sup>. On the other hand colorectal cancer is the commonest GIT malignancy in industrialized western world<sup>8</sup>. The pattern of cancer also varies between high and low risk areas<sup>9</sup>. This difference is attributed to variation in environmental factors<sup>8</sup> and diet is the focus of most etiological theories<sup>4,10</sup>.

In the present work, we will see the morphology and frequency of primary gastrointestinal tumours, gross and microscopic descriptions. The slides of these cases were reviewed and findings are tabulated and compared with other studies on the subject.

## Results

A total of 114 cases of malignant GIT tumours were diagnosed at Department of Pathology, A.I.M.C, Lahore during this period of three years. Out of these 114 malignancies 51(44.74%) were colorectal cancers, 39(34.21%) gastric cancers, 17(14.91%) oesophageal cancers and 7(6.14%) involving the small intestine

including the ampula of Vater (Table-I). Regarding the age incidence of patients with malignant GIT tumours, most of the patients were above the age of 30 years (87.72%) with peak incidence in the age group of 40 to 69 years (57.02%)(TableII).

Table:I. Distribution of malignant GIT tumours in different sites of gut.

Sites	n=	%age
Oesophagus	17	14.91
Stomach	39	34.21
Small Intestine	7	6.14
Large Intestine	51	44.74
Total	114	100

Table:II. Age distribution in malignant tumours of GIT. (n = 114)

Age Groups ( Years)	n=	%age
10 - 19	2	1.75
20 - 29	12	10.53
30 - 39	16	14.04
40 - 49	23	20.18
50 - 59	18	15.79
60 - 69	24	21.05
70 - 79	14	12.28
>80	5	4.38
Total	114	100.00

Sex distribution (Table-III) shows a slight male preponderance, 60 males (52.63%) as compared to 54 women (47.37%). Considering the histological types, out of 51 cases of colorectal malignancies (Table IV),

Table:III. Sex distribution in malignant tumours of GIT. (n = 114)

Sex	n=	%age
Male	60	52.63
Female	54	47.37
Total	114	100



Table IV. Morphologic types of malignant Tumours of Colon ( n = 51)

Histologic Type	n=	%age
Adenocarcinoma	48	94.12
Basaloid Carcinoma	1	1.96
Metastatic Carcinoma	1	1.96
Leiomyosarcoma	1	1.96
Total	51	100

48(94.12%) were adeno-carcinomas whereas one case(1.47%) each shows morphology of metastatic carcinoma, basaloid carcinoma and leiomyosarcoma. In case of gastric tumours (Table V), out of 39 malignant cases, 36(92.31%) were adeno-carcinomas, two (5.13%) undifferentiated carcinomas while one (2.56%) was diagnosed as squamous cell carcinoma. In case of oesophagus (Table VI) out of 17 cancers, 12(70.59%) were squamous cell carcinomas and five (29.41%), adenocarcinomas.

Table V. Morphological types of malignant tumours of stomach. ( n = 39 )

Histologic Type	n=	%age
Adenocarcinoma	36	92.31
Undifferentiated Ca.	2	5.13
Squamous Cell Ca.	1	2.56
Total	39	100

Table VI. Morphologic types of malignant tumours of oesophagus(n= 17)

Histologic Type	n=	%age
Squamous Cell Ca.	12	70.59
Adenocarcinoma	5	29.41
Total	17	100

## Discussion

Malignant tumours of gastrointestinal tract (GIT) are among the leading cancers in the world<sup>2</sup>. Stomach, colon and oesophagus are more common subsites to be affected by GIT malignancies and account for about a quarter of cancer burden in the world whereas small intestine and appendix are less commonly affected sites<sup>2,3</sup>.

In the present work colon is the commonest site of GIT malignancies accounting for 44.74% of gastrointestinal malignant tumours. This is consistent with western world where colorectal carcinoma is also the most common GIT malignancy. However its incidence is higher reaching to 79.7% in United States of America<sup>3,8,11</sup>. On the other hand a lower incidence is seen in Asia, Africa and some parts of South America<sup>12</sup>. In Saudi Arabia an incidence of 32.7% is described for colorectal carcinoma<sup>13</sup>. The incidence of colorectal carcinoma shows differences in various regions of Pakistan<sup>8</sup>. This geographic distribution is similar to that seen in Italy and Norway<sup>14,15</sup>. The incidence is higher in Faisalabad, Rawalpindi and Northern areas<sup>16,17,8</sup> whereas it is less in Southern Areas like Karachi where an incidence of 23% is described<sup>8,13</sup>. Adenocarcinoma is the most common histological type of colorectal malignancy in our study accounting for 94.12% of malignant tumours of large intestine. This frequency is

comparable to that in United States (95%) and Karachi (97%)<sup>1,3</sup>.

Gastric cancer ranked second in the present study giving an incidence of 34.21% in our patients. It is also ranked second in United States, Iran, Afghanistan and in Rawalpindi whereas it is ranked third in Karachi and Faisalabad<sup>1,3,19,16,17,18</sup>. In our patients gastric cancer gave an incidence of 34.21% which is higher than in United States (11.4%) but lower than in Southern Saudi Arabia (41.17%) and in Iran (35.7%)<sup>3,18,13</sup>. In Karachi the incidence of gastric cancer is 14% and 9% for males and females respectively<sup>1</sup>. Considering the histological types of gastric malignancies, the most common type in our cases is adenocarcinoma<sup>9,23</sup>. The frequency is comparable to that of United States (90%) but lower than Kashmir (99.4%) and Karachi where nearly all tumours were adenocarcinoma<sup>1,3,4</sup>. In our patients 5.13% cases were diagnosed as undifferentiated carcinoma, which is a rare variety and found in only 1.5% of the patients in United States<sup>3</sup>. Squamous cell carcinoma is a rare gastric tumour and found in 2.56% of our patients but found even less frequently in other studies<sup>3</sup>.

Cancer of oesophagus ranked third among malignant GIT tumours in our study as compared to its first rank in Iran, Saudi Arabia, parts of India, Karachi and Peshawar and third in United States and other western world<sup>1,3,19,18</sup>. In the present work oesophageal tumours comprise 14.91% of GIT malignancies as compared to 5.71% in United States, 41.4% in Iran and 20.26% in Saudi Arabia<sup>3,18,13</sup>.

There is an oesophageal cancer belt extending across Asia, from Iran to China, where it is more prevalent<sup>20</sup>. Peshawar and other northern areas of Pakistan show high incidence most probably because they are located along this belt and share the risk factors with these areas. For example the use of ``naswar`` is prevalent in NWFP<sup>21</sup> and in Karachi the higher incidence seems to be due to excessive ``pan`` chewing<sup>22</sup>. Considering the histologic type, squamous cell carcinoma was found in 70.59% of the patients in the present study. This incidence is lower than in United States (76%), Karachi and Peshawar but higher than United Kingdom (55.7%)<sup>1,3,4</sup>. Adenocarcinoma was found in 29.41% in our cases. This frequency is lower than that in United States (35%) and United Kingdom (41.5%) but higher than that in Kashmir (14.6%) and Karachi<sup>1,4,23</sup>.

Malignant tumours of small intestine ranked fourth (6.14%) in the present work. Lower frequencies are mentioned in other studies as 1.52% and 2.03% in United States and Rawalpindi respectively<sup>3,24</sup>. Adenocarcinoma was the most common histologic type which is similar to other studies<sup>3,24</sup>.

As regards the sex distribution of the patients suffering from GIT malignancies, males (52.63%) are affected a bit more than females(47.37%) in the present study. This male predominance with variation in extent of predominance is seen in almost all other such studies<sup>3,4,25</sup>.



Regarding the age incidence of patients with malignant GIT tumours, most of the patients in our study were above the age of 30 years (87.72%) with peak incidence in the age group of 40 to 69 years (57.02%). This is almost consistent with other studies in Pakistan but is lower as compared with USA and Japan<sup>1,3,26</sup>.

It is concluded that the most common site of GIT affected by malignant neoplasms is colon, followed by stomach, then oesophagus and then small intestine in this part of country. However a larger data from all centres of Lahore should be collected to see a more conclusive profile of malignant gastrointestinal in our population.

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