

Original Article

Malignancy, a disease of old age: An analysis of 2520 cases

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Objective: To determine frequency of common malignancies in different age groups.

Design: Descriptive Study.

Setting: Holy Family Hospital, Benazir Bhutto Hospital, District Headquarter Hospital, Rawalpindi, and NORI Hospital, Shifa International Hospital, Pakistan Institute of Medical Sciences Islamabad.

Duration: From January, 2005 to February, 2009.

Patients and Methods: All the patients presenting with carcinoma breast, oesophagus, stomach, gall bladder, colon and rectum included in the study. Age of presentation noted. Patients were divided into different age groups; 15yr to 30yr, 31yr to 40yr, 41yr to 50yr and above 50yr age group. Total number of patients suffering from different malignancies calculated, by simply adding the data obtained from various hospitals. Frequency of these malignancies in these age groups compared.

Results: Among 2003 patients of carcinoma breast, 32% each belonged to 41yr to 50yr and above 50yr age groups, whereas above 50yr age group is commonest age group for carcinoma oesophagus, stomach gall bladder and colon, accounting for 60%, 51%, 65% and 48% respectively. However in carcinoma rectum 26% cases were in 15yr to 30yr age group with 37% patients in above 50yr age group.

Conclusion: All these malignancies are associated with old age, however carcinoma rectum and carcinoma breast also showed a slightly high frequency in 15yr to 30yr and 41yr to 50yr age groups respectively which is different from international data.

Key words: malignancy, age associated frequency.

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Introduction

Malignancy is leading cause of death in our era.¹ Despite our best efforts, human kind are unable to discover its treatment. Malignancies are usually associated with increasing age. Various factors are held responsible for this phenomenon.

Using a conventional age range of 15–19 for adolescents and 20–30 for young adults, there is ample evidence for an overall higher cancer incidence.¹ In fact, the incidence of cancer in young patients aged 15–30 years (220–250 cases per million youths) is higher and rising faster.¹ Data from the National Cancer Institute's (NCI) Surveillance, Epidemiology and End Results (SEER) program and the UK cancer registry indicate that the incidence of cancer in adolescents 15–19 years old is 50% higher than in younger persons, for a rate of 203 new cases per million persons.^{2–4} Overall, rates in both males and females were significantly higher at 20–24 years.⁵

There is evidence of an increase in the cancer incidence rate in adolescents and young adults over the

last quarter of the 20th century on both sides of the Atlantic.¹

In order to see whether there is some changing pattern involved in this phenomenon, we conducted a descriptive study at main hospitals of twin cities of Rawalpindi and Islamabad to determine age associated frequency of various common malignancies to determine whether the hypothesis that malignancy is associated with old age is correct or not. Malignancies studied in our study included carcinoma breast, gastrointestinal tract malignancies that included oesophagus, stomach, colon, rectum, and gallbladder carcinoma.

Materials and Methods

The study was conducted from January, 2005 to February, 2009. Data collected from Holy Family Hospital, Benazir Bhutto Hospital, District Headquarter Hospital, Rawalpindi, and NORI Hospital, Shifa International Hospital and Pakistan Institute of Medical Sciences Islamabad. Frequency of carcinoma breast,

oesophagus, stomach, gall bladder, colon and rectum were noted in various age groups

The age groups were, 15 year to 30 year, 31year to 40 year, 41year to 50 year and above 50 year age group. Frequency of malignancy was then compared among different age groups.

The data regarding various malignancies collected from different hospitals on a Performa. Data of different malignancies are simply then added.

Table I: The distribution of cases of ca breast into various age groups (n=2003)

AGE GROUP	INCIDENCE IN 2005	INCIDENCE IN 2006	INCIDENCE IN 2007	INCIDENCE IN 2008	TOTAL IN A AGE GROUP
<20	11	-	-	2	13(.6%)
21-30	86	39	43	18	186(9.2%)
31-40	133	121	187	85	526(26.2%)
41-50	182	132	186	139	639(32%)
>50	173	142	200	124	641(32%)
TOTAL	585	434	616	368	2003

Table II: The distribution of cases of ca oesophagus in different age (n=142)

AGE GROUP(CA OESOPHAGUS)	INCIDENCE	PERCENT AGE
<30	10	7%
31-40	20	14%
41-50	26	18.4%
>50	86	60.6%
TOTAL	142	

Table III The distribution of cases of ca Stomach in various age groups (n=98)

AGE GROUP (CA STOMACH)	INCIDENCE	PERCENT AGE
<30	8	8.2%
31-40	17	17.3%
41-50	23	23.5%
>50	50	51%
TOTAL	98	

Table IV: The distribution of cases of ca gall bladder in various age (n=40)

AGE GROUP (CA GALL BLADDER)	INCIDENCE	PERCENTAGE
<30	2	5%
30-40	5	12.5%
41-50	7	17.5%
>50	26	65%
TOTAL	40	

Results

The distribution of cases of ca breast into various age groups shown in Table 1(n=2003)

Table V: Distribution of ca colon in various age groups (n=122)

AGE GROUP (CA COLON)	INCIDENCE	PERCENT AGE
<30	17	14%
31-40	18	14.7%
41-50	28	23%
>50	59	48%
TOTAL	122	

Table VI Distribution of cases of ca rectum (n=115)

AGE GROUP (CA RECTUM)	INCIDENCE	PERCENT AGE
<30	30	26%
31-40	20	17%
41-50	22	19%
>50	43	37%
TOTAL	115	

Discussion

Though malignancy considered to be a disease associated with old age, a number of patients present in younger age groups in our setup. However results of our study clearly indicates that still malignancy is most common after 50 year of age.

Breast carcinoma: Breast cancer is the most common cancer in women in developed countries, and 12% of breast cancer occurs in women 20-34 years. Survival from breast cancer has significantly improved, and the

potential late effects of treatment and the impact on quality of life have become increasingly important.⁶

Increases in the incidence of postmenopausal breast cancers have been linked to screening and menopausal hormone use, but younger women have received less attention.⁷

Cancer incidence increases at a faster rate with increasing age. Young women cancers tend to be larger and higher grade with poorer prognostic characteristics, resulting in a higher risk of recurrence and death from breast cancer when compared to older women.⁸

The median age of Mexican women with breast carcinoma is 51 years, and 45.5% of all breast carcinomas develop before patients reach age 50 years. The most frequently affected age group is that of 40-49 years (29.5%), whereas the groups from 30 to 39 and from 60 to 69 years of age have a similar percentage (14%) of frequency. This contrasts with women from the United States, as well as with women from European countries, where the median age at presentation is 63 years, and only one-fourth of the patients are younger than 50 years of age, and three-fourths are postmenopausal.⁹

In our study, 32% patients belonged to 41 year to 50yr and above 50 year age group respectively, a trend similar to Mexico but different from Western countries.

Esophagus carcinoma: Esophageal cancer is one of the 10 most common cancers and the sixth most common cause of cancer deaths worldwide. It is the third most common gastrointestinal malignancy after gastric, colorectal and hepatocellular cancers.¹⁰

The malignancy is relatively more common in Pakistan, being the seventh most common cancer in men and the sixth most common in females in Karachi.¹¹ According to another study, prevalence of esophageal cancer in Pakistan is 5% of all cancers in men.¹² At other places within the country, the prevalence is reportedly even higher. Quetta, a city in Northern Pakistan reports that this is the third most common cancer in men.¹³

This place has close proximity to Afghanistan and Iran where this disease is endemic. The median age at presentation is 72 years according to data from Scotland.¹⁴

The etiology of esophageal cancer is mainly associated with consumption of tobacco (smoking or smokeless) and alcohol. In addition Barrett's esophagus, diet and nutrition, reflux disease also play an important role in etiology of esophageal cancer.^{15,16} In our study, 60.6% patients belonged to above 50 year age group, confirming the fact that carcinoma oesophagus is disease of old age.

Stomach carcinoma: While gastric cancer is much more common in the second half of life¹⁷, it does occur

in the younger individuals with a much higher rate of morbidity and mortality.¹⁸

It has been reported that patients younger than 30 years of age occupy 1.1% to 3.3% of all patients with gastric carcinoma¹⁹⁻²¹ whether gastric carcinoma in young patients differs from that in elderly patients is controversial. It is reported that poorly differentiated adenocarcinoma and signet ring cell carcinoma were more frequently detected in younger patients, but survival rates between the young and elderly patients were not significantly different.²⁰

The incidence of gastric carcinoma in young patients was found to be 13.06%. The average age of the patients was 28.57 + 5.9 years; the youngest being 19 years old.¹⁸

Furthermore, it is reported that gastric carcinomas of young and elderly patients have different genomic profiles, indicating different pathogenic mechanisms of the disease for young and elderly patients.²² These results suggest that the pathways of gastric carcinogenesis differ between young and old patients

Infections with *Helicobacter pylori* having genetic predisposition of host have been suggested to be the most important causes of stomach cancer in general population.²³

In our study, 51% patients belonged to above 50 year age group, a trend similar to other studies.

Colon and rectum carcinoma: Incidence rates for colorectal cancer are decreasing in the United States, possibly due to preventative cancer screening. Because these programs target older patients, their beneficial effects may not apply to young patients. Incidence rates for colon and rectal cancers in young patients are rising, and they have more advanced disease.²⁴

Although the incidence of colorectal carcinoma in individuals over 45 years declined during the period 1975 to 2000, the incidence in 15- to 29-year-olds increased. The incidence of colorectal carcinoma was approximately equal in white non-Hispanics, Hispanics, African Americans/blacks, and Asians/Pacific Islanders who were 15 to 29 years of age when diagnosed.²⁵

Several reports have described the poor prognostic factors for the survival in young patients with colorectal carcinoma. These factors include advanced stage at presentation, delay in diagnosis and poorly differentiated carcinoma.²⁶

In our study, 48% patients of ca colon belonged to above 50 year age group similar to other studies but carcinoma rectum showed interesting age distribution, 26% of cases of carcinoma rectum belonged to less than 30 year age group whereas 37% of cases were seen in above 50 year age group. This pattern is completely different from pattern reported in Western studies.

Gallbladder cancer: The most common cancer of the biliary tract and has a particularly high incidence in Chile, Japan, and northern India²⁷.

Risk factors include genetic susceptibility, gender, presence of gallstones, chronic biliary infections, diet and some anatomical anomalies.⁽²⁷⁾ Carcinoma gall bladder is disease of old age.²⁸ In our study also commonest age group is above 50 year age group, 65% patients belonged to this age group, confirming that carcinoma gall bladder is disease of old age.

Conclusion

Though we had a limited data but still it proves the hypothesis that malignancy is associated with old age. Various malignancies studied in our study, showed the same trend, above 50 year age group being commonest. However, in managing younger patients, we must keep in mind that in carcinoma rectum 26% cases belonged to 15yr to 30yr age group similarly 32% cases of carcinoma breast belonged to 41 year to 50 year age group which needs further research.

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