

Cancer Types and Treatment Modalities in Patients Attending at Delta Medical College Hospital

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Abstract

Background: Cancer is a major health burden worldwide. By 2030, over 9 million cancer patients are assumed to die in developing countries from different types of cancers. Incidence of different types of cancers is increasing due to unhealthy life style. At present, lung cancer is most prevalent in Bangladeshi male whereas it is cancer cervix in female. **Objective:** To determine the frequency, pattern and treatment modalities in different types of cancer in different age and sex group to get an idea about national cancer scenario. **Materials and method:** A cross-sectional study was conducted on 1300 cancer patients attending at Delta Medical College Hospital within three months duration (from 15.07.10 to 15.10.10). Histologically proven malignant cases were included in the study. **Results:** There were 400 male and 900 female patients. Male: female ratio was 1:2.25. Among all patients, cervical cancer was the top most common malignancy (23.07%) followed by breast (22.46%). In male, lung cancer was found to be the most common cancer (15.75%), followed by non-Hodgkin's lymphoma (13.75%), colorectal (12%), stomach (6.75%), and oesophageal (5.75%) carcinomas. In female patients, carcinoma cervix was the top most cancer (33.33%), followed by breast (32.33%), ovary (6.11%), gall bladder (3.77%), and colorectal (3%) carcinomas. Majority of cancers occurred in middle and older age groups. Combination of surgery, chemotherapy and teletherapy was the most common form of treatment. **Conclusion:** The findings of the study may provide a helpful clue to important facts and figures of different types of cancers in Bangladesh.

Keywords: Cancer; distribution pattern.

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Introduction

Now a day, cancer is a major health burden worldwide. An estimated 12.7 million new cancer cases occurred with 7.6 million deaths (around 13% of all deaths) in 2008.¹ Incidence and mortality rates of most cancers are increasing in

several less developed countries due to adoption of unhealthy lifestyles like smoking, physical inactivity and consumption of calorie-dense food.² In the 1960s, almost 25% of global cancer burden was diagnosed in low-income and lower

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middle-income countries. In 2010, nearly 55% of the global cancer burden was found in these countries. By 2030, over 9 million cancer patients are assumed to die in developing countries.³

Globally, the most prevalent types of cancers were breast (5.2 million), colorectal (3.2 million), prostate (3.2 million), lung (1.67 million), stomach (1.6 million), cervical (1.5 million), urinary bladder (1.1 million), liver (0.6 million), and oesophageal cancer (0.48 million) in 2008.¹ Cancer is the sixth common cause of mortality in Bangladesh and 60% of cancer patients die within five years of diagnosis.⁴ Lung cancer in male and cervical and breast cancer in female constitute 38% of all cancer cases in Bangladesh.⁵ In some studies, it is found that cervical cancer is the most common cancer in women of reproductive age in Bangladesh and most patients come for diagnosis and treatment when it is too late.⁶

There are 1.3 to 1.5 million cancer patients in Bangladesh, with about 0.2 million patients newly diagnosed with cancer each year. At present, most common cancers in Bangladeshi male are lung, mouth-oropharynx, oesophageal and stomach cancers. In women, cancer cervix and breast cancer are the most prevalent followed by cancers of mouth-oropharynx, lung and oesophagus.⁷

There is no population based cancer registry in Bangladesh to provide reliable data on incidence, prevalence and mortality of cancer patients. The aim of this study was to find out the pattern of cancers in different age and sex groups and also the treatment modalities used in different types of cancer patients attending at Delta Medical College Hospital.

In this institution standard treatment protocol including surgery, radiotherapy (two types of radiotherapy. External beam radiotherapy [EBRT] or teletherapy is the form of radiotherapy where the patient sits or lies on a couch and an external source of radiation is pointed at a particular part of the body. In case of brachytherapy [internal radiotherapy], the radiation source is placed inside the body, in or next to the area requiring treatment) and chemotherapy, either singly or in combination is practiced.

As large number of cancer patients regularly attends Delta Medical college Hospital, this study may reflect representative data about the national cancer scenario in our country.

Materials and method

In this cross sectional study, histopathologically confirmed all types of cancer patients irrespective of age and sex attending at Delta Medical College hospital for treatment from 15th July to 15th October 2010 were included. There were total 1300 subjects attended during this study period and total 56 different types of cancers were found. Out of 1300 subjects 400 were male and 900 were female. Patients' personal data, history and medical records were collected from registry book. Before data collection, written informed consents were taken from patients and due permission was taken from hospital authority.

Results

There were total 56 different types of cancers found during the study period. For convenience top 20 cancers are listed in table I and top 10 cancers, each for male and female patients are showed in figures. But all the calculations are done considering 1300 patients (total study subjects).

Total 1300 patients were registered during the study period. Among 1300 patients, there were 400 (31%) male and 900 (69%) female patients. Male:female ratio was 1:2.25. Patients having different types of cancers were stratified according to age and sex. Considering all the study subjects (irrespective of sex), number of cervical carcinoma was the highest (23.07%), followed by breast (22.46%), non-Hodgkin's lymphoma (5.92%), lung (5.84%) and colorectal (5.77%) cancer. The most common cancer in male patients were lung (15.75%), followed by non-Hodgkin's lymphoma (13.75%), colorectal (12%), stomach (6.75%) and oesophageal carcinoma (5.75%). In female patients, carcinoma cervix was the top most cancer (33.33%), followed by breast (32.33%), ovary (6.11%), gall bladder (3.77%) and colorectal (3%) carcinoma (Table I, Fig 1 & 2).

Table I: Types and sex distribution of cancers (top 20 tumours)

Types of cancer	Frequency (%)		Total (N=1300)
	Male (n=400)	Female(n=900)	
Carcinoma cervix	-	300 (100)	300 (23.07)
Breast carcinoma	1 (0.07)	291 (99.66)	292 (22.46)
Non-Hodgkin's Lymphoma	55 (71.42)	22 (28.57)	77 (5.92)
Lung carcinoma	63 (82.89)	13 (17.10)	76 (5.84)
Colorectal carcinoma	48 (64)	27 (36)	75 (5.77)
Carcinoma ovary	-	55 (100)	55 (4.23)
Carcinoma oesophagus	23 (56.09)	18 (43.9)	41 (3.15)
Carcinoma gall bladder	6 (15)	34 (85)	40 (3.07)
Carcinoma stomach	27 (71.05)	11 (28.94)	38 (2.92)
Urinary bladder carcinoma	21 (75)	7 (25)	28 (2.15)
Unknown primary cancer	20 (77)	6 (23)	26 (2)
Endometrial carcinoma	-	21 (100)	21 (1.61)
Carcinoma larynx	16 (84.21)	3 (15.79)	19 (1.46)
Carcinoma prostate	17 (100)	-	17 (1.3)
Carcinoma tongue	9 (56.25)	7 (43.75)	16 (1.23)
Hodgkin's lymphoma	9 (60)	6 (40)	15 (1.15)
Testicular tumour	14 (100)	-	14 (1.07)
Vulvovaginal Carcinoma	-	12 (100)	12 (0.92)
Carcinoma head of pancreas	6 (54.54%)	5 (45.46)	11 (0.84)
Soft tissue sarcomas	4 (44.44%)	5 (55.56)	9 (0.69)

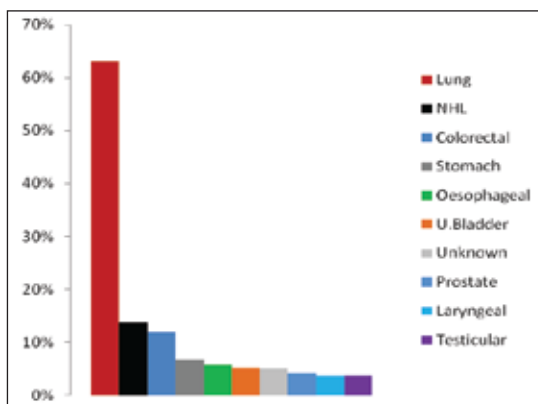


Fig 1: Distribution of tumours in male patients (Top 10)

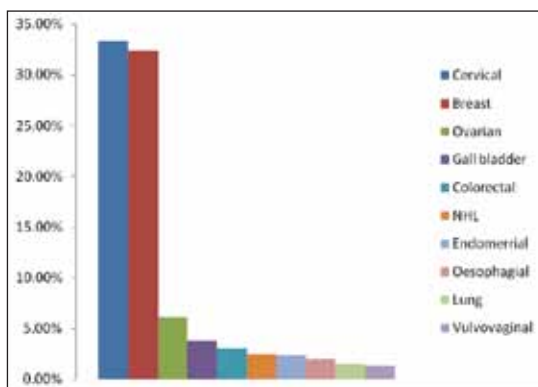


Fig 2: Distribution of tumours in female patients (Top 10)

Highest numbers of patients were in 41-60 years age group (54.38%), followed by in age group of 21-40 years (26.15%) (Table II).

Table II: Distribution of subjects according to age

Age group (in years)	Male n=400 (%)	Female n=900 (%)	Total N=1300 (%)
0-20	8 (0.61)	7 (0.54)	15 (1.15)
21-40	85 (6.53)	349 (26.84)	434 (33.38)
41-60	195 (15)	510 (39.23)	705 (54.23)
61-80	108 (8.61)	27 (8.46)	135 (10.38)
81-100	4 (0.3)	7 (0.54)	11 (0.84)

In this study, patients with different types of cancers of different stages received different modalities of treatment. Among the different modalities combination of surgery, chemotherapy and teletherapy was the highest (24.3%). Table III shows the treatment pattern of different cancer patients.

Table III: Treatment patterns of cancer patients (N=1300)

Treatment modalities	Number of patients (%)
Surgery + Chemotherapy + Teletherapy	316 (24.3)
Surgery + Chemotherapy	230 (17.7)
Chemotherapy+ Teletherapy	220 (16.92)
Surgery + Teletherapy	130 (10)
Chemotherapy	104 (8)
Teletherapy	94 (7.23)
Surgery	36 (2.77)
Surgery + Teletherapy + Brachytherapy	28 (2.15)
Chemotherapy + Teletherapy + Brachytherapy	28 (2.15)
Surgery + Chemotherapy + Teletherapy + Hormone therapy	28 (2.15)
Surgery + Chemotherapy + Teletherapy + Brachytherapy	28 (2.15)
No treatment started yet (new case)	24 (1.84)
Teletherapy + Brachytherapy	14 (1.07)
Surgery + Chemotherapy + Hormone therapy	8 (0.61)
Surgery + Chemotherapy + Teletherapy + Hormone therapy	8 (0.61)
Surgery + Chemotherapy + Brachytherapy	4 (0.3)

Discussion

Frequency of different types of cancer occurring in Bangladeshi population is not similar with that of other population groups worldwide. Ethnicity, genetic predisposition, life style, socio-economic condition, environmental pollution and many other risk factors interplay for the different distribution which is also evident in a number of other study findings.

In this study, number of cervical carcinoma was the highest (irrespective of sex), followed by breast, non-Hodgkin's lymphoma, lung and colorectal cancer. The most common cancers in male patients were lung, followed by non-Hodgkin's lymphoma, colorectal, stomach and oesophageal carcinoma. In female patients, carcinoma cervix was the top most cancer, followed by breast, ovary, gall bladder and colorectal carcinoma. In a recent study⁷ on cancer scenario update of Bangladesh, cancer of lung and mouth-oropharynx rank as the top two prevalent cancers in males. Other common cancers in males are oesophageal cancer, stomach cancer, lymphomas, and multiple myeloma. In women, carcinoma cervix and breast cancer are the most prevalent followed by mouth-oropharynx, lung and oesophageal cancer.⁷ A large study on 6492 cancer patients conducted in National Institute of Cancer Research and Hospital of Bangladesh, the common cancers were cancers of lung, lymphatic organs, larynx, oral cavity and skin in adult males and breast, cervix, lung, oral cavity, lymphatic organs, ovary in females.⁸ A similar study on 232 cancer patients attending Dhaka Medical College Hospital in 2010 showed the most common malignancies were cancers of respiratory tract, GIT, female genital organs, head-neck and breast.⁹ In India, the most common cancers are of lungs, breast, colon, rectum, stomach, oral cavity and liver.¹⁰ Most prevalent cancers in Pakistan are lung, oral cavity, larynx, urinary bladder in male and breast, oral cavity, ovary, cervix, oesophagus in female.¹¹ Some other studies done in India^{12,13} and Pakistan¹⁴ have shown variation in prevalence of different cancers.

In Indian subcontinent, carcinomas of breast and cervix are the commonest malignancies in female. Carcinoma cervix is less common in western population.¹ In USA (2012), prostate, breast, lung, colorectal, melanoma, non-Hodgkin's lymphoma, renal cancers have the highest incidences and mortality rates.¹⁵

In our study, number of female patients was much higher than males, notably due to large numbers of cervical and breast carcinoma patients. Similar Bangladeshi studies have shown male:female ratio of 1.4-1.8:1.8,⁹ However, in a study on cancer patients in Madhya Pradesh and Uttar Pradesh of India, relative percent prevalence of all type of carcinomas in both states was considerably high in females.¹³

In this study, the subjects were also categorized on the basis of age groups. It was observed that the highest number (54.23%) of patients were in 41-60 years age group, followed by 33.38% in 21-40 years age group. In a study on distribution of cancer patients in National Institute of Cancer Research of Bangladesh, 3.9% patients were of paediatric age group (0-15yrs) and 19.1% in older age group that is majority lied within the middle age group.⁸ Bangladesh Cancer Registry Report showed that maximum number of the cancer patients were in age group between 30-65 years, which is around 66%.⁵

In Bangladesh Cancer Registry Report (2005-2007)⁵, most frequent cancer was lung cancer followed by carcinoma cervix and breast. In our study, most frequent cancers were carcinoma cervix and breast. In present study, combined therapy was the most frequently used treatment modality. This has some similarity with Bangladesh Cancer Registry Report⁵ where combined therapy is the second frequently used treatment modality for cervix and breast cancer patients. This similarity was probably because both these studies had large numbers of breast and cervical carcinoma patients.

Regarding the treatment modalities used for patients of present study, highest number of

patients are treated with combination of surgery, chemotherapy and teletherapy. Bangladesh Cancer Registry Report (2005-2007)⁵ shows that highest numbers of breast and cervix cancer patients were treated with surgery followed by combined therapy and highest numbers of lung cancer patients were treated with chemotherapy followed by surgery. In a study⁷ conducted in a renowned oncology hospital of Bangladesh, highest numbers of their cancer patients were treated by chemotherapy followed by teletherapy and brachytherapy. A recent study⁹ on cancer patients in Dhaka Medical College Hospital shows highest number of their patients were treated with chemotherapy followed by surgery and chemotherapy combination.

Conclusion

Cancer is a major cause of death worldwide including Bangladesh. Incidence of different cancers is increasing day by day in our country. Cancer has a huge personal, social and economical bearing. Cancer treatment is still very costly worldwide. All cancer related studies have shown that a large number of cancer affected people are in working age group. These two factors greatly hamper the economy in personal and national levels. Development of a cancer registry in Bangladesh is very important to evaluate the actual picture of our national cancer situation which is needed to update our national cancer control strategy. The findings of the study may provide a helpful clue to important facts and figures of different types of cancers in Bangladesh. Such more studies should be carried out in larger scales to develop an updated national cancer registry in Bangladesh.

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