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Research Article

A STUDY ON INCIDENTAL PROFILE OF WOMEN CANCER IN WEST BENGAL

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ABSTRACT
Cancer in all forms are posing threat worldwide. In developing countries it is ranked third, next to infectious diseases and cardiovascular diseases. The present study is an attempt towards an understanding of various types of malignancy profile among females in the population of West Bengal. Trend analysis of cancer incidence data for the period November 2002 to October 2012 showed that the overall rates of cancer are increasing with greater increase among females. In case of women, the occurrence of cancer in the descending order is of the breasts, cervix, ovary, liver and pancreas, stomach, oesophagus, urinary bladder and kidney. The incidence in rural areas was slightly low compared to more polluted urban counterparts. The present investigation also revealed that breast cancer is common in females of urban population with high socio-economic status, whereas cervix cancer is prevalent in rural women with low socio-economic status.

Key Words: *Breast cancer, cervical cancer, epidemic and severity*

INTRODUCTION
Cancer in all forms posing threat worldwide with over 10 million new cases, approximately 5.3 million men and 4.7 million women and causes over 6 million of deaths that include the developed and developing countries (Parkin *et al.*, 2001). In developed countries, cancer is ranked as the second commonest cause of death (205 million), while in developing countries it is ranked third (3.8 million), next to infectious diseases and cardiovascular diseases. In India nearly 3 million persons are suffering from cancer at any given time and around 100000 new cases are added each year. Despite significant advances achieved in cancer treatment, cancer still causes pain and death in modern world (Khorshid, 2009). It is widely held that 80-90% of human cancers may be attributable to environmental and lifestyle factors such as tobacco, dietary practices, inadequate physical activity, alcohol consumption, infections due to viruses and sexual behavior (Galvao *et al.*, 2007). In India the majority of cancer is diagnosed in the advanced stage and hence morbidity remains high. Beside this, cancer mortality rates are under-reported due to poor recording of the cause of death. Among Indian women the cancer of the breast and cervix form a large group of 60 percent of all cases (Chatterjee and Mukherjee, 2011 and Chatterjee, 2011). In India the majority of breast cancer is diagnosed in the advanced stage and hence morbidity remains high. So, the challenge is to implement an effective screening programme using genomic and proteomic imputs and identifying new cancer markers and their regulation by modem cell biology techniques. Thus the present study is an attempt towards an understanding of severity of various types of malignancy profile among females in the population of West Bengal.

MATERIALS AND METHODS
The present study was assessed for successive ten years from November 2002 to October 2012. Female cancers were taken into account from patients attending to OPD of Barasat Cancer Research and Welfare Centre. Multi-centre based cancer detection programs were organized by this prime health centre covering many districts of West Bengal to do the study. Written informed consent was obtained from all in accordance with the guidelines from hospital center review board. The malignancy was diagnosed by various investigations like radio-imaging, molecular markers, cytology and histo-pathological

examinations. The data of age, sex, pathological status of cancer patients, demographic as well as environmental data was recorded. Socioeconomic status of the concerned family was determined as per criteria of Kumar (1993).

RESULTS AND DISCUSSION

Trend analysis of cancer incidence data for the period (November 2002 to October 2012) showed that the overall rates of cancer are increasing with greater increase among females. The cancer frequency was moderate during initial years (below 5.23 %), but it rises drastically from 2007 and reached maximum in the recent years (17.56 %). The largest increase among females was seen for cancer of the breast (Table 1). Increasing trends were also noticed for ovary, liver and pancreas, oesophagus, stomach, urinary bladder, kidney, etc. Cancer of the colon was increasing in females, too. Cancer of parotid and uterus showed a decreasing trend in the studied population. In case of women, the occurrence of cancer in the descending order is of the breasts, cervix, ovary, liver and pancreas, stomach, oesophagus, urinary bladder and kidney (Table 1).

Table 1: Frequency (percentage value) of different types of women cancer

Year	Types of Cancer							
	Breast	**Cervix**	**Ovary**	**Liver and Pancreas**	**Oesophagus**	**Stomach**	**Urinary Bladder**	**Kidney**
Nov 2002-Oct 2003	3.52	3.88	2.21	9.77	11.89	9.52	14.32	1.23
Nov 2003-Oct 2004	6.32	5.21	2.28	11.65	7.16	4.82	19.12	0.96
Nov 2004-Oct 2005	4.82	5.44	4.12	4.59	6.71	7.32	11.06	6.24
Nov 2005-Oct 2006	8.82	9.13	5.28	7.88	8.62	10.56	2.01	18.76
Nov 2006-Oct 2007	15.20	16.54	15.03	10.42	13.35	14.86	7.96	6.29
Nov 2007-Oct 2008	18.89	18.63	21.54	14.32	15.47	16.12	14.29	18.77
Nov 2008-Oct 2009	19.77	19.23	23.49	18.67	16.32	18.23	17.23	24.69
Nov 2009-Oct 2010	22.34	21.84	25.71	22.77	20.22	19.56	15.81	25.42
Nov 2010-Oct 2011	18.93	17.26	5.89	3.17	5.11	7.19	1.22	2.36
Nov 2011-Oct 2012	18.66	18.21	12.64	8.23	6.79	7.02	5.46	5.21

The present investigation revealed that cancer rate was alarmingly high in females as compared to males. The incidence in rural areas was slightly low compared to more polluted urban counterparts. There is variation in the site-wise distribution within the population. Present epidemiological studies indicate that environmental pollution may be responsible for increased rate of morbidity and mortality in malignancy, as the severity is higher in more polluted urban areas as compared to rural areas. This may cause due to use of various carcinogenic products, knowingly or unknowingly, in their daily life and also due to the increased environmental pollutants in modern days. This devastating cancer scenario can be altered in a positive direction by regular screening and by training the prevention measures of life style modification in a wide scale through proper way.

The result highlighted that in different types of carcinoma of females breast cancer (18.66 %) and cervix cancer (18.21 %) were most threatening in the population of West Bengal. Both of them proportionally increased in successive years from November 2002 to October 2012. The present investigation also revealed that breast cancer is common in females of urban population with high socio-economic status, whereas cervix cancer is prevalent in rural women with low socio-economic status. The risk of ovarian cancer was low at early days but from 2007 it rises alarmingly and reached maximum in the year 2010 (25.71 %).

The demographic study highlights that the cancer rate is climbing at epidemic proportions in this population and the ignorance is partially responsible for that climax. Maybe we wish to ignore the fact that in many areas the cancer rates for particular cancers are spiraling out of control. Urbanization, industrialization, changes in lifestyles and food habit, population growth and ageing all have contributed for epidemiological transition in the country (Ahmed *et al.,* 2006 and Oricha *et al.,* 2005). The absolute number of new cancer cases is increasing rapidly, due to growth in size of the population and increase in the proportion of elderly persons as a result of improved life expectancy following control of communicable diseases (Murthy and Mathew, 2004). Beside this malignant burst newer and newer types of cancer emergence are also pronounced and this feature is more threatened in polluted sites.

The result was in line with the early investigation that in this population the cancer of the breast and cervix forms a largest group (Chatterjee and Mukherjee, 2009 and 2011). Previous observation also proved that for the last 50 years, the breast cancer rate has been rising in every area of the industrialized world; with a rise of 26% in USA from 1973 to 1988. North American women have one chance in nine of developing invasive breast cancer at some point in their lives (Laux, 2005). Stomach carcinoma was with lower incidence among females as was reported in early investigation (Chatterjee, 2009 and 2011).

The epidemic peak of cancer scenario can be considered as cancer cluster, as the incidence pattern is greater than expected number of cases of cancer within a group of people in a geographic area or a certain period of time. In certain region a similar types of cancers are pronounced in groups and seems to show one kind of association in them due to similar environmental status. This multiple neoplastic syndrome was common for cancers of breast-ovary, liver-stomach-kidney and others in this population and more specifically in multiple endocrine neoplasias. Since, it is hard to prove, the jury is still out on many of these cancer clusters, may be due to the environmental pollution and dietary toxicants which are vulnerable carcinogens causing cancers world wide. Previous study reported the fact that cancers are associated with exposures to agricultural chemicals, dietary practices, abnormal sexual practices and it can be prevented by lifestyle modifications including breast cancer (Murthy and Mathew, 2004 and Sahni, 2006). The little hope lies in the fact that during the year 2011 there is a sudden decrease of cancer frequency was observed in case of carcinoma of ovary, liver and pancreas, stomach, oesophagus, urinary bladder and kidney. This can be due to the profuse awareness camp organized by the Government, non-government and private sectors, as well as the lifestyle modifications among the general peoples.

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