Research Paper

Medical Science

Clinical Cancer Audit in Depart of Surgical Oncology, A Tertiary Care Centre in Madhya Pradesh: Retrospective Analysis

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ABSTRACT

Background: A retrospective analysis of all patients who were admitted in surgical oncology department during the period of October 2013 to march 2016 was conducted to know the incidence, age and sex wise distribution, stage of disease at presentation, and type of malignancy among patients. Materials and Methods: A total of 672 Patients were admitted in the department of surgical oncology, Sri Aurobindo Institute of Medical Sciences, Indore, Madhya Pradesh. Data from cancer registers in surgical oncology department and histopathology registers of pathology department were collected and analyzed. Results: cancer incidence varied in both sexes, most common malignancy in both sexes is oral cavity (female to male ratio is 1:1.8) followed by ovary in females and lung in males. Most common age at presentation is fourth decade (26.10%) followed by fourth decade (21.40) %. Squamous cell carcinoma is the most common histological variant (64.5%). Among all malignancies patients with oral cavity malignancies presented with late stage disease

KEYWORDS :

Introduction:

Cancer is a leading cause of death worldwide, accounting for 14.1 million new cancer cases and 8.2 million cancer deaths occurred in 2012 worldwide (Globocan 2012)[1]. In 2010 alone mortality due to cancer accounted for 555,000 deaths in India (Dikshit et al., 2012)[2]. Cancer is the second most common cause of death after cardiovascular disorder worldwide. The burden of cancer continues to raise in developing nations due to growth in population, adaptation of cancer promoting habits like tobacco use, alcohol, and western type dietary habits. Nearly one third of cancer is preventable, simply by having a healthy diet, being physically active and moderating the use of alcohol abstaining from tobacco consumption. In developing nations majority of patients with cancer presents in late stages of the disease (80% are advanced) and this adds to the already high morbidity, mortality and expenditure. Treatment results are about 20% less than what is observed for similar conditions in more developed countries, mostly due to late diagnosis and inappropriate treatment [3]. The magnitude of cancer problem in the Indian Sub-continent is increasing due to poor to moderate living standards and inadequate medical facilities. Most frequently observed cancers in Indian population are of lungs, breast, oral cavity, colon, rectum, stomach and liver [4]. Attempts have been made to show the cancer scenario in our department and compare it with Indian scenario.

Materials and Methods:

It is a retrospective study of all patients who were admitted in surgical oncology department in Sri Aurobindo medical college and hospital, a tertiary care centre in Indore, Madhya Pradesh during the period of October 2013 to march 2016. Data is collected from OPD registers, ward registers, OT registers and pathology registers and analyzed. The demographic profile and clinical information obtained includes the information on age, gender, site of origin, histology of tumor, stage of tumor, duration of hospital stay and complications. Staging was based on the American Joint Committee on Cancer and included primary tumor size (T), regional neck status (N), and group stage. The site of cancer was classified based on the International Classification of Disease for oncology.

Results:

A total of 672 patients were admitted for various malignancies during the period of our study. Table 1and 2 shows the age and sex distribution of various malignancies and this reflects that peak age at incidence is in fifth decade followed by fourth decade, oral cavity malignancies are most common type in both males and females(36.7%), followed by hematological malignancies (4.1%) in males and ovarian cancers in females (6.6%).For purpose of data analysis pancreatic and peri ampullary tumors were reported as separate entity.

Table : 1 Age Distribution Of Study Group

AGE	NO OF PATIENTS
<20	10(1.9%)
20-29	42(8.2%)
30-39	107(21%)
40-49	130(25.5%)
50-59	99(19.4%)
60-69	88(17.2%)
70-79	24(4.7%)
>80	9(1.7%)

Table . 2: Gender Wise Distribution of leading site of cancer

Site of disease	Male	Female
Oral Cavity	118	69
Larynx	11	
Esophagus	4	9
Stomach	11	15
Periampulla	13	8
Pancreas	4	4
Colon	10	8
Liver	6	2
Adrenal	3	-

Rectum	14	10
Breast	1	31
Thyroid	1	8
Parotid	4	2
Lung	14	4
Cervix	-	24
Ovary	-	34
Vagina	-	7
Endometrium	-	8
Urinary Bladder	2	2
Penis	4	-
Soft tissue tumors	18	6
Lymphomas And Leukemias	21	11

Table 3 shows stage at time of initial presentation for treatment. Most common stage is stage IV (44.6%) followed by stage II (25.2%), and stage III (24.9%). Only (5%) presented with early disease for treatment.

Table:3 Stage Of Disease At Presentation

STAGE	PERCENTAGE
STAGE I	5.1%
STAGE II	25.2%
STAGE III	24.9%
STAGE IV	44.6%

Histologically squamous cell carcinoma is the most common histological variant (64.50%) and most cases of squamous cell carcinoma belong to head and neck region; and most of them presented in late stage of disease, followed by adenocarcinoma (23.80%) and lymphomas (9%).

Table:4 Histological Type Of Tumor

Histology	Percentage
Squamous Cell Carcinoma	60.50%
Adenocarcinoma	23.80%
Lymphoma and Leukemia	9%
Sarcoma	6.60%

Region wise head and neck malignancy is the most common site followed by abdomen. Average length of hospital stay was 14 days for abdominal tumors and 3 days for hematological malignancies as they were admitted for biopsy or chemo port insertion and then transferred to medical oncology department for further management. Post operative complication rates was highest in abdominal surgeries (14%) followed by breast surgeries (12.5%). During the study period 19 patients expired in hospital out of which 8 cases were of abdominal malignancy followed by head and neck cancer(7). Overall morbidity in our study is (10.4%) and mortality is (3.7%).

Table:5 Complications

System	NO Of Cases	Avg Days Of Admission	Complications	Mortality
Head And Neck	212	11	23(10.8%)	7(3.3%)
Abdomen	108	14	16(14%)	8(7.4%)
Female Reproductive System	69	11	5(7%)	1(1.4%)
Breast	32	12	4(12.5%)	-
Lymphoma and Leukemia	32	3	-	-
Soft tissue tumors	24	12	3(1.2%)	1(1.4%)
Thorax	18	12	2(9%)	2(11%)

A total of 191 minor cases were operated during the study which includes 6 emergency tracheostomies, 21 cases of chemo port insertion, 59 cases of excision biopsy, 35 cases of benign tumors, 22 cases of laryngoscopies, and 48 cases of revision flaps and re suturing.

Discussion:

The cancer causes in India are almost same as in other parts of the world with tobacco being the major contributor of about 22% of cancer deaths worldwide[5] .A significant variation of cancer has been reported due to life styles and food habits (Helbock et al, 1998)[6]. Around one third of cancer deaths are due to the 5 leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, alcohol use. The peak incidence of cancer is seen in middle age in both sexes. In our study male to female ratio of cancer incidence is 1:1.05 with peak incidence for men of age group 30-39 years and in females it is between 40-49 years. In a study conducted by Imran Ali et al[7] in 2011 incidence of cancer was higher in female population in major cities in India. Oral cavity is the commonest site of cancer in both sexes followed by soft tissue sarcoma in men and ovarian carcinoma in women.

Table 6: Leading Sites Of Cancer In Indian Cities[8]

City	Male	Female
Indore (Our Study)	Oral cavity (45%)	Oral cavity (26%)
Mumbai	Oral cavity (12.3%)	Breast (30%)
Bangalore	Hypopharynx (8.4%)	Cervix (27%)
Chennai	Stomach (9.2%)	Cervix (25.5%)
Chandigarh	Lung (9.2%)	Cervix (18%)
Guwahati	Oesophagus (15%)	Cervix (16%)

The data in our study is of single departmental data from our institute and does not reflect the true incidence.

The main contributing factor for significant difference in site of cancer in Madhya Pradesh is due to high consumption of tobacco in any form. In a study conducted by ministry of family health and welfare in 2015-16 in the state of Madhya Pradesh it was found that 59.5% of men and 10.4% of women use tobacco in any form [9]. According to Global Adult Tobacco Survey (GATS) India 2009-10, around 17% in Madhya Pradesh (26.7% male and 6.4% female) are tobacco users in the form of gutkha. Gutka consumption not only causes oral cancer, but has also been linked with development of oral sub mucous fibrosis, a precancerous lesion. In a study conducted by Bobba et al[10] men in Bhopal, Madhya Pradesh have the highest rate of tongue cancer in the world (nine per 100,000) high incidences of oral cancers in Madhya Pradesh is owing to the consumption of beetle leaves and tobacco in different forms. The low incidence of gastrointestinal malignancies (15.9%) in our study is mainly due to vegetarian diet followed in Indian population compared to western countries. In a study conducted by (World cancer research fund, 1997), Indian diet containing adequate quantities of vegetables, fruits, and fiber rich grains provides protection against the increased risk of colon and breast cancers[11]. A comparison of non-vegetarian and vegetarian diets and alcohol and tobacco uses in India was carried out through case control studies. It was observed that Vegetarians have a lower risk of Esophageal (Roa, 1997)[12], Oral (Roa et al, 1994)[13] and Breast cancers (Jain et al, 1999)[14]. 44.6% patients presented with stage IV disease to the hospital during the study and the main contributing factors are low socio economic status, lack of awareness, illiteracy and rural background, use of alternate medicine. In a study conducted by Amos et al[15], advanced stage at diagnosis may relate to factors that prolong the help-seeking intervals, for example, long distances from diagnostic facilities, low socio economic status, and/or non-recognition of cancer symptoms. A study conducted on 825 cancer patients by Alex broom et al [16] in Delhi showed that 34.3% of cancer patients had used alternate medicine, ayurvedic treatment as most common practice followed by homeopathy. The results also demonstrated a statistically significant relationship between the use of alternate medicine and reported delay in seeking help from clinical medicine (p<0.001). A study conducted by Dinesh Kumar et al[17] on 1117 cancer patients showed that Closer to nature (64%), easy availability (62.9%), noninvasive (60.8%), and inexpensive (57.4%) were main positive motivations regarding alternative medicine by the patients. In a study conducted by Qiong Wang et al [18 in] china it was shown that more breast cancer cases in low socio economic status areas (25.5%) were diagnosed later (stages III & IV) than those in high (20.4%) or highest (14.8%) socio economic status areas.

CONCLUSION:

During the last 20 years, India has emerged as a fast growing economy with changes in lifestyle-related behavior partially responsible for the increasing cancer burden. The disease is among top three killers among adults in both rural and urban India. Cancer incidence rates, while still lower compared with many western countries have been changing over recent decades. Smokeless tobacco results in considerable, potentially preventable, morbidity and mortality from cancer. A substantial proportion burden of cancer can be prevented through the widespread application of existing cancer control knowledge, including tobacco control, vaccination, early detection, and the promotion of physical activity and healthy dietary patterns. There is no uniform cancer prevention strategy for the entire country. Treatment facilities are also mostly limited to urban areas of the country. The majority of patients with cancer present to a cancer treatment centre in late stages of the disease and this add to the already high morbidity, mortality and expenditure. Treatment results are less than what is observed for similar conditions in more developed countries, mostly due to late diagnosis and inappropriate treatment. A coordinated and intensified response from all sectors of society, including governments, civil society, the private sector, and individuals, is required to seize control of the growing burden of cancer. The government Organization needs to consider incorporating regulation of smokeless tobacco into its framework Convention for Tobacco Control.

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