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Research Article

Study of Incidence and Pattern of Cancer among Biopsy Specimens in a Rural Teaching Hospital, Tamilnadu, India

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ABSTRACT
Objective: *To study the incidence and pattern of cancer in a rural teaching hospital.*
Methods: *All the diagnosed cancer cases from Department of Pathology, Rajah Muthiah Medical College and Hospital, for a period of one year, from January 2016 to December 2016 were taken for the study which is for one year period. The cancers were classified according to the organs affected and ranked in their order of frequency. Male cancers accounted for 51.51% while female cancers were for 48.49%. Following the analysis, gastrointestinal tract cancers topped the chart with 44 patients (26.67%) followed by head &neck malignancies in 32 (19.39%) patients, breast cancersin 24 patients (30%) and gynecological malignancies in 19 patients (23.75%).*
Conclusion: *Dietary habits, tobacco and alcohol related cancers predominated in males. In females, breast cancers predominated followed by Gynecological malignancies that included cervical and endometrial cancers.*
Keywords: *Malignancy, Rural hospital.*

INTRODUCTION

Cancer is one of the leading causes of adult death worldwide[1]. According to the world cancer report, global cancer rates could increase by 50% by the year 2020. Incidence of cancer has been increasing due to pesticides, ionizing radiation, heredity, hormonal imbalance, tobacco, alcohol consumption and dietary habits. Death from cancer in the world are projected to rise and the study of the magnitude and pattern of cancer is the first step in determining clues to the causes of cancer and in having a baseline to plan and assess control measures[2]. The present study was started to determine the incidence and pattern of cancer and to determine most common types of cancer and to calculate the incident rate, male to female ratio and age of cancer presentation in a rural teaching hospital in Tamil Nadu.

MATERIAL & METHODS

This study was carried out in the Department of Pathology, Rajah Muthiah Medical College & Hospitals, Tamilnadu, a rural teaching hospital. The materials of the study were all surgical and gynecological specimens that were received in the Department from 1st January to 31st December 2016for a period of one year. Cancers were classified according to the organs affected. The incidence rate, sex and age of all the cases were analyzed.

RESULTS

165 cases of cancer were diagnosed between January 2016 to December 2016 were included in the study. A total of 3220 specimens were received during the study period. The numbers of cancer cases were 165 (5.12%).Of 165 cases, 85 were male patients (51.51%) and 80 were female patients (48.49%). The relative frequency rates for different types of cancers were illustrated in Table III. The five most common malignancies in both sexes were gastrointestinal tract malignancies (26.67%), head & neck malignancies (19.39%), breast cancers (14.54%), gynecological malignancies (11.52%) and cutaneous malignancies (10.30%). Gynecological malignancies included 15 cases of carcinoma cervix and 4 cases of endometrial carcinoma. The rank of cancers affecting males and females are given in Table IV and V. The most common cancers in males were gastrointestinal tract malignancies (43.5%) followed by head & neck cancers (20.0%).In females, breast cancers constituted (30.0%) of the total cases of malignancies followed by gynecological malignancies (23.75%).The age incidence is given in Table VI. The age ranged from 8years – 82 years in males & 14-75 years in females. But most of the cancers occurred in the 51-60 years age group

TABLE- I Percentage Of Cancer In Total Biopsies

Total biopsies (Surgery &Gynecology)	No. of carcinomas	Percentage of cancer in total biopsies
3,220	165	5.1%

TABLE –II Sex Distribution

No. of carcinomas (165)	Percentage among males & females
Males (85)	51.51%
Females (80)	48.49%

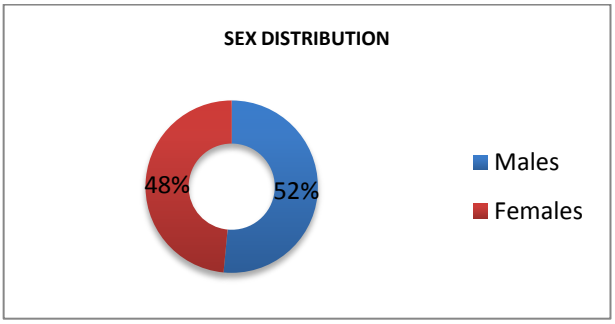


TABLE- III System Wise Distribution Of Various Cancer Cases

Sl.no	System	No. of patients	Percentage
1	Gastro intestinal tract	44	26.67%
2	Head & neck	32	19.39%
3	Breast	24	14.54%
4	Female genital tract	19	11.52%
5	Skin	17	10.30%
6	Male urogenital system	12	7.28%
7	Bone & soft tissue	10	6.06%
8	Lung	02	1.21%
9	Endocrine system	05	3.03%
	Total	**165**	**100%**

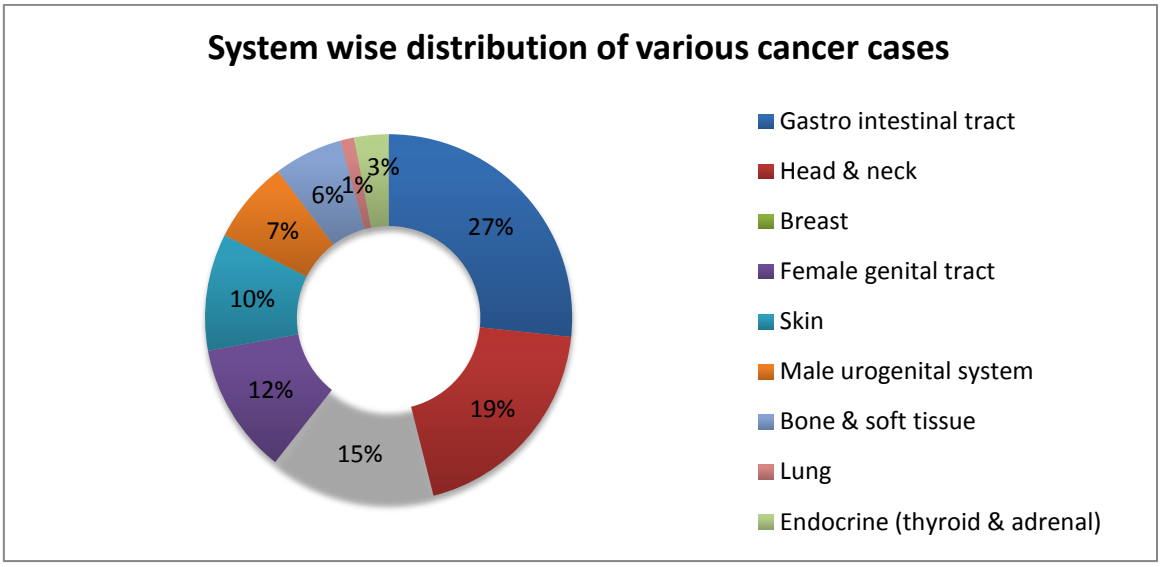


TABLE –IV System Wise Distribution Of Cancer Cases In Males

Sl.no	System	No of male Patients	Percentage
1	Gastrointestinal tract	37	43.5%
2	Head &Neck	17	20.0%
3	Skin	10	11.8%
4	Male Urogenital system	12	14.1%
5	Bone& Soft tissue	07	8.24%
6	Lung	02	2.36%
	Total	**85**	**100%**

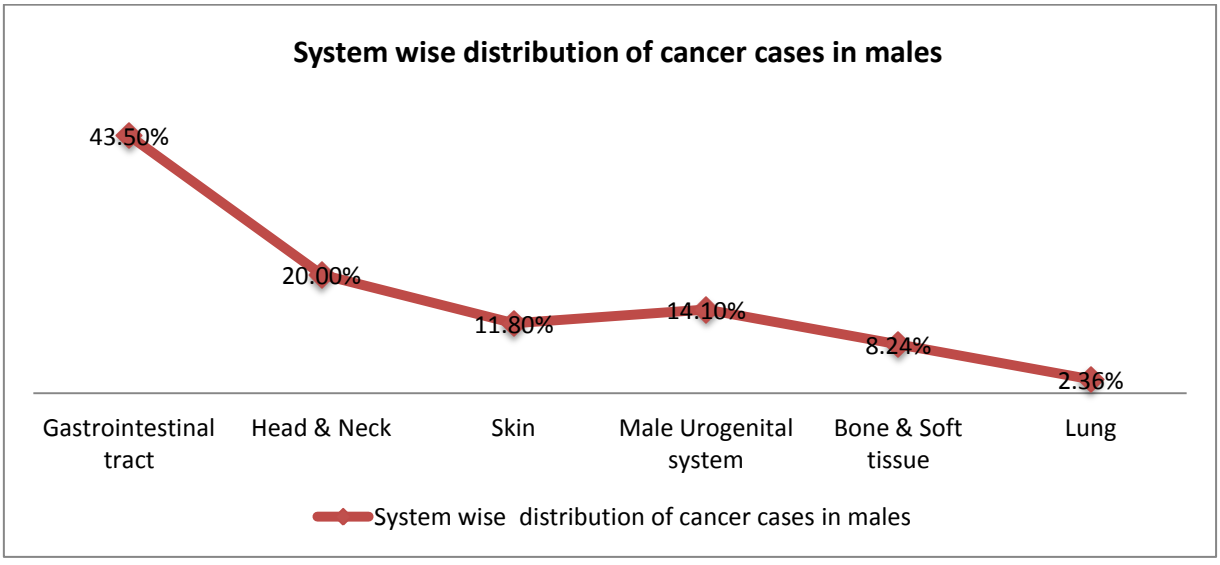


TABLE- V System Wise Distribution of Cancer Cases in Females

Sl.no	System	No. of female patients	Percentage
1	Breast	24	30.0%
2	Female genital tract	19	23.75%
3	Head & neck	15	18.75%
4	Gastrointestinal tract	07	8.75%
5	Skin	07	8.75%
6	Endocrine system	05	6.25%
7	Bone & Soft tissue	03	3.75%
	Total	**80**	**100%**

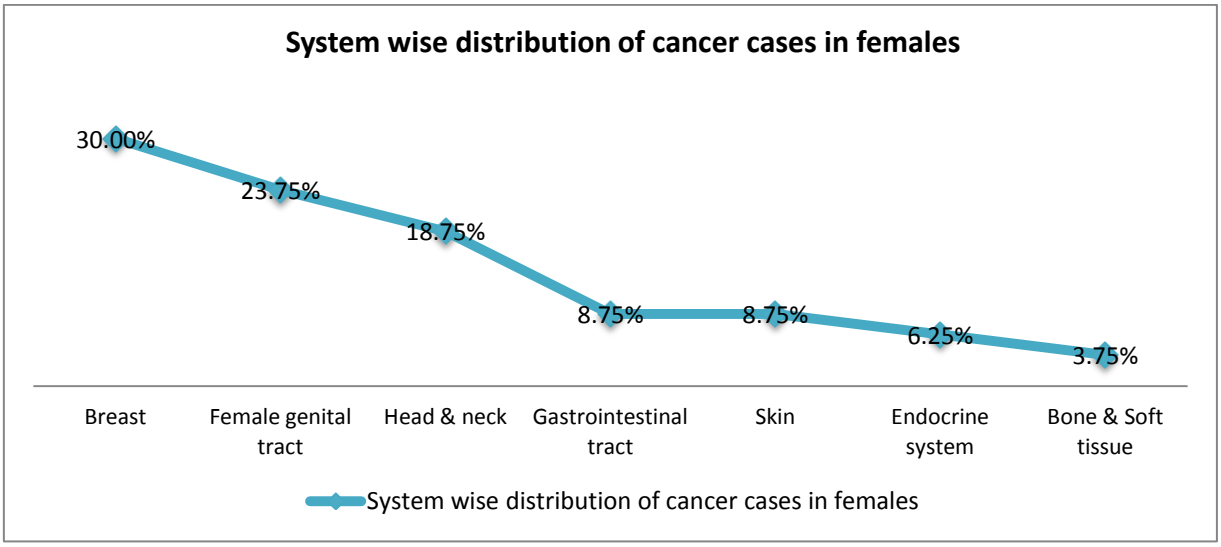
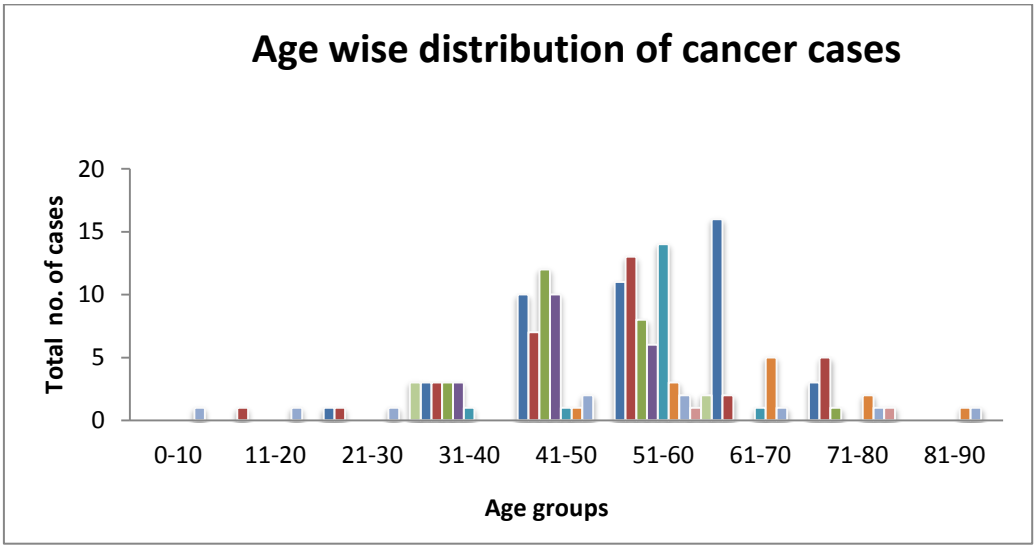


TABLE- VI Age Wise Distribution of Cancer Cases

Age Group (yrs)	Gastro Intestinal Tract	Head & Neck	Breast	Female genital tract	Skin	Male Urogenital system	Bone & Soft tissue	Lung	Endocrine system	Total no. of cases
0-10	-	-	-	-	-	-	1	-	-	**1**
11-20	-	1	-	-	-	-	1	-	-	**2**
21-30	1	1	-	-	-	-	1	-	3	**6**
31-40	3	3	3	3	1	-	-	-	-	**13**
41-50	10	7	12	10	1	1	2	-	-	**43**
51-60	11	13	8	6	14	3	2	1	2	**60**
61-70	16	2	-	-	1	5	1	-	-	**25**
71-80	3	5	1	-	-	2	1	1	-	**13**
81-90	-	-	-	-	-	1	1	-	-	**2**
	44	**32**	**24**	**19**	**17**	**12**	**10**	**2**	**5**	**165**



DISCUSSION

Results of the present study showed dietary habits, tobacco and alcohol related cancers predominated in males. In females, breast cancers occupied the top of the list[3, 4]. Most of the cases were invasive ductal carcinoma. This was followed by gynecological malignancies that included 15 cases of carcinoma cervix and 4 cases of endometrial carcinoma. Several studies reported that high incidence of human papilloma virus infection is

associated with the development of cervical cancer and this highlights the importance of studying the prevalence of this virus in this region in future[5]. The increased incidence of gastrointestinal tract cancers in males could be due to faulty dietary habits like increased consumption of chilli, salted food and Helicobacter pylori infection[6, 7]. Head and neck cancers could be due to increased tobacco use in rural areas and this study is mainly done on rural population. In rural areas, chewing tobacco is very popular in amixture such as pan masala or pan chewed with lime[8].Cancers of oral cavity and gastrointestinal tract in males, cervix and breast in females account for over 50% of all cancer deaths in India. In a hospital based study by Kalyani et al from Karnataka reported predominance of Gastro intestinal tract and Oral cancers in both genders and female predominance of cervical cancers over breast cancers was reported[9].

CONCLUSION

Cancer is an emerging public health problem in India with adoption of behavior and life style associated with smoking, unhealthy dietary habits and growth of the population. Hence a well coordinated cancer control programs, screening programs are needed for better understanding of the cancer burden and cancer control planning.

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