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FREQUENCY OF CANCER CASES AT THE DEPARTMENT OF PATHOLOGY PUMHS-W, NAWABSHAH. SIND.A TERTIARY CARE HOSPITAL BASED DATA; 2015-2019.

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ABSTRACT: This study was conducted with the aim to assess the burden of cancer in Nawabshah, a city of interior Sind with a tertiary care hospital working since 1974, now upgraded to the University as PUMHS-W in 2012.The tumor registry established and working in big cities of Pakistan but cancer data for a large number of cities are still not published. The data presented here is recorded from Department of Pathology PUMHS –W from year 1st January 2017 to 31st December 2019. **METHODOLOGY**: This is a cross-sectional, descriptive study of the cancer patients including both genders divided into five age groups to determine frequencies of different type of cancers recorded at this Institute from 1st January 2015 to 31 December 2019. After the written permission from ethical Review Committee, all the cancer cases recorded after Histopathological examination of biopsies received at the department of Pathology from 2015-2019 were entered in excel sheets after confirmation from computer data. All the variables/demographic details available like age, sex were entered and analyzed by SPSS version 20 for this cross sectional descriptive study.**RESULTS**: A total of 1406 cancer patients were registered and diagnosed at The Department of Pathology, PUMHS-W during the three year period. Female cancers are accounted as 54% and male cancers are 46%. The median ages at presentation were 45.5 years for female and 48.6 years with SD17±45 for both sex. The most commonly involved age group is 16-30 years 33.7% and least common group was above 80 years 1%.The organ system involved more frequently by cancer are head and neck 25%, genital system18% for female and 12% for male and gastrointestinal tract 15% respectively. In females the 3 most frequent malignancies were cancers of female genital tract17.8%, head n neck 12%, gastrointestinal tract (GIT) 9%. In males Head n neck cancer was the most common cancer accounting for 13%followed by male genital system 11.7% and gastrointestinal tract 6% respectively. **CONCLUSION**: The cancer incidence was higher in adult female than in male, but it was lower in old age. Among women, Ovarian and cervical cancer, and prostate cancer in male, were the leading cancer types of middle age group. These results can be helpful for the expansion of health coverage in the country including low cost set-up for diagnostic procedures for early detection of cancers.

Key Words: Histopathology, head and neck, genital system, gastrointestinal tract.

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INTRODUCTION

The Cancer/ malignancy is a broad term used for a group of diseases and it is characterized by the uncontrolled growth and spread of cells which are abnormal in behavior[1]. Globally the rising rate of cancer is the 2nd leading cause of mortality following cardiovascular diseases. Expanded economy with few environmental factors, as use of tobacco and alcohol, urbanization with increasing pollution, increasing unhealthy diet combined associated with better medical services and extended post reproductive life span, have been considered responsible for this portent. The preventive and treatment measures are applied on environmental factors, but the progress to reduce the incidence of cancers has been very slow .[2,3] Death is an ultimate result if growth will become uncontrolled. The etiology is still needed to explore but, certain known risk factors increases the occurrence of disease[1]. The somatic mutations in genes are responsible for malignanacy.[4,]

The factors which are modifiable like smoking, obesity and few of those which are not modifiable like inherited genetic mutations and certain altered immune states/ diseases. These factors may act either simultaneously or with each other to initiate or to promote the growth of cancer.[1] Nearly 60% of the world's population resides in Asia and the burden of cancer was one and half 0f total global cancer in 2018.[5] Total 9% of the world's population lived in Europe but unfortunately 25% of the cancer burden Europe suffers.[5] In Africa during 2008 more than 7lac cases were recorded and more than 5 lac deaths were documented from cancer, and the expected number for coming 2 decades are twice than that and the reasons are aging and expanded population in continent.[6] IARC (International Agency for Research on cancer)estimates that globally 14.1 million cases of cancers have emerged in 2012, among which almost 8 million have been reported from economically developing countries; encompassing 82% population of the world.[7,8] There is still no any developed interconnected central national level cancer registration system in Pakistan. The data which is available from multiple sources most prominent is the research article from Cancer Registry in Karachi (KCR) Karachi South, Radiotherapy centers Armed Forces Institute of Pathology (AFIP) from Rawalpindi.[9]

Pakistan is categorized by World Bank as lower middle income country, as Pakistan is densely populated under developed, and the estimated population was 195.4 million during 2016.[10,11]

The limited resources are responsible for neglectful of cancer registration in Pakistan as there is burden of infectious/communicable diseases.[12]

METHODOLOGY: This Cross-sectional, descriptive study done to estimate the incidence of cancer by age group starting from 2017 to 2019. After the written permission from ethical Review Committee, All the cancer cases recorded after Histo-pathological examination of biopsies received at the department of Pathology, PUMHS-W Nawabshah was entered in to SPSS 20 after confirmation from computer record. All the variables/demographic details available like age, sex were entered and analyzed by SPSS version 20.This was a descriptive study describing the frequency of all the

malignant tumors of body in both genders and different age groups in our tertiary care institute.

RESULTS:

Total of 1406 patients were diagnosed with malignancies, In the Department of Pathology PUMHS-W in 3 years from 2017 to 2019 in which, 54% were female and 46% were male. (TABLE 01).

The distribution of cases among pediatric age group 3% of total cases were seen in 0-15 years of age, second group included here was between 16-30years of age and comprises of 33.7% of disease. The third group is 30-50 years of age and had 34.3% of disease. The fourth group is 51-80 years of age and burden of disease was 28%, in the last group the age was above 80years and comprises of 1% of burden of cancer**. (TABLE 02)**

In third table of result we categorize the different systems of body involved. Here the tumors of head and neck are collectively on the top of list were 25% of total burden. The next most common system involved is female genital tract which is 18% of total cancers. In this way gastrointestinal tract 15%, male genital system tumors 12%, genitourinary tract 8%, skin and soft tissue tumors were 8%, lymph node malignancies were 7%, tumor burden due to breast involvement was 6% and brain bone and endocrine system malignancies were 1% of total cases**. (TABLE 03)**

In our study the 54% of the total cancer burden is on female while rest of 46% were on male gender. The most common tumors are tumors of female genital tract, ovary and cervical cancers are more common respectively. The 2NDmost common malignancy involving gastrointestinal tract in females, stomach and esophagus respectively. The most commonly involved systems in male are head n neck, male genital system and gastrointestinal tract. (TABLE: 04)

The incidence of tumors are more common in middle age group (31-50 years) including head and neck and female genital tract 44% and tumors of male genital system33.3% are more common in older age group (51-80 years).The least common age group involved is above 80 years of age 0.6%. The pediatric age group (0-15 years) has had only 6% of disease burden. **(TABLE 05)**

TABLE: 01 Gender wise distribution of cancer patients

NO	GENDER	NUMBER	PERCENTAGE
1	MALE	644	46%
2	FEMALE	762	54%
		1406	100%

TABLE: 02 Age group incidence of cancers

	AGE GROUPS	NUMBER	PERCENTAGE
01	0-15 YRS	41	3%
02	16-30YRS	474	33.7%
03	31-50YRS	483	34.3%
04	51-80 YRS	390	28%
05	> 80YRS	21	1%
	TOTAL	1406	100%

TABLE: 03 Frequencies of cancers in body by system

GENDER	H&N	FGT	GIT	MGT	GUT	SKIN	LN	BREAST	BONE	END0	CNS	TOTAL
FEMALE	170 12%	251 18%	120 9%	0	38 27.3%	34 2%	48 3%	86 6%	7 0.4%	3 0.2%	1 0.07%	758 54%
MALE	182 13%	0	90 6%	165 11.7%	79 5.6%	73 5.1%	47 3%	3 0.2%	2 0.1%	5 0.3%	2 0.1%	648 46%
TOTAL	352	251	210	165	117	107	95	89	9	8	3	1406

Table NO: 04 Organ /system incidence of cancers by gender

Table: 05 Organ /system incidence of cancer by age group

AGE GROUP	H&N	FGT	GIT	MGT	GUT	SKIN	LN	BREAST	BONE	ENDO	CNS	TOTAL
0-15YRS	9	8	14	5	17	10	13	0	4	1	1	82(6%)
16-30YR	66	70	42	4	5	13	13	11	2	0	1	227(16.1)
31-50YR	193	129	81	30	40	48	38	56	2	2	0	619(44%)
51-80YR	82	44	70	124	53	36	31	22	1	5	1	469(33.3%)
>80YRS	2	0	3	2	2	0	0	0	0	0	0	9(0.6%)
TOTAL	352	251	210	165	117	107	95	89	9	8	3	1406(100%)

DISCUSSION

Among the total number of malignancies diagnosed comprises of 54% in females while rest of 46% were in male population the same results were seen in the study conducted by Hanif M at karachi[13] where 51.8% were female and 48.1% were male, the results are consistent with results documented at Saudi Arabia[14] are 52.6% female and 47.5% are male, Study carried out at Lahore shows 52.3% female and 47.7% male Z aziz[9]. The Globocon 2018[15] shows the slight female predominance in cancer cases in Pakistan. The cancer facts and figures 2019[1] shows slight female predominance in newly diagnosed cancer cases. (Cancer facts and figures 2019[1])

In our study the more commonly involved group is 31 to 50 years of age and less common is aged above 80 years. Our study results were consistent with the results of Badar F[12], but the results are different from Europe more than 50% of population involved were over 70 years of age during 2011-2013[16].

The overall systemic distribution of tumors in our study is as tumor of head and neck in both sexes were 25% of total cases, the same results are seen in the study carried out by Hanif M[13], but the results from US are different, the tumors of gastrointestinal tract are most prevalent in US, (**cancer facts and figure 2019**)[1], results from Saudi Arabia[14] shows that the colorectal carcinoma is more prevalent, while in our study the gastrointestinal tumors are on 3rd number.

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Tumors of female genital system are on 2nd place in our study and the results are in confirmation with results of Aziz Z[9] Lahore. The results of KCR shown the tumors of female genital tract on 3rd top number[12]. The Globocon 2018[15] Pakistan

shown the female genital tract malignancy collectively on 2nd top of female cancers.

The cancers of male genital system and genitourinary system were on 4th and 5th number respectively, results from Badar F[12] has shown the top malignancy in male was prostate, the Globocon 2018[15] Pakistan shows that prostate is on 4th top malignancy list in male, but very low incidence seen in Lahore by Aziz Z[9], KCR rates for prostate cancer are higher than our study Badar F[12]. Breast cancer in our study has very low frequency while higher rates were reported by Globocon 2018[15], Bhurgri y[18], Aziz Z[9]and Saudi Arabia.[14]

Tumors of brain, bone and endocrine glands are least common in our study while results are in contradiction with results from Bangladesh[19] where bone malignancy is more common, Badar F[12], (Cancer **facts and figures2019**)[1]. Brain tumors are very low in our setup results are same from Badar F[12], (**cancer facts figures 2019**). Endocrine gland tumors are low in number in our study and, low in USA Cancer facts and figures[1].

CONCLUSION

The increasing number of cancer patients may cause a significant financial load on Pakistan health department, unfortunately it is expected that it is increasing with time as the population is growing day by day. This emerging burden can be prevented by educating the population about preventive measures related with life style factors, about early diagnosis and treatment at particular places.

The present estimate of cancer in Nawabshah and its periphery may help to establish the incidence of common cancer in population and may provide a basis to establish the route for cancer frequency and control in future. The number of cancers are distributed in recent years after establishment of Norin Cancer Hospital 2012 in Nawabshah city.

ETHICS APPROVAL: ETHICAL REVIEW COMMEETE.PUMHS-W

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