CANCERS;

SINDH BASED PREVALENCE OF DIFFERENT TYPE OF CANCERS REPORTED IN CIVIL HOSPITAL KARACHI

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ABSTRACT… Objective: To calculate the prevalence of common types of cancer in SINDH based on Civil Hospital Karachi (CHK) database. **Type of Study:** Retrospective Observational Study. **Place & Duration of Study:** Clinical Oncology Department Civil Hospital Karachi, from January, 2004 to December 2011(8 Years). **Methods:** All the Patients attending the oncology department CHK were selected for study. After completing data the cancer registry patients were categorized according to their diagnosis and this data was recorded on Microsoft Excel sheet. **Results:** During period of January 2004 to December 2011, the total number of patients included in the study was 5504 out of which 2638 were males and 2866 females. The list of prevalence of different types of cancer was created and according to the statistical analysis based on CHK data base, the increasing trend was seen in breast, oral cavity, lymphoid tissue, blood, colorectal, liver & biliary tract, faciomaxillary, lung, uterus, esophagus, gastrointestinal stromal tumor, larynx, ovary, male genital system, Nasopharynx, urinary system and brain cancers. **Conclusions:** It is concluded that the registration of cancer patients is highly beneficial for the evaluation of cancer prevalence and incidence. This registration is also helpful for calculating the comparative incidence and prevalence of cancers on national and international levels. The recorded data will also help to improve the quality of life of cancer patients as this data is very much helpful to identify the etiology and risk factors of cancers which will improve health prevention and management plans by higher authorities.

Key words: Cancer Registry, Civil Hospital Karachi, Prevalence, Incidence, Ratio.

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INTRODUCTION

Cancer is one of the major cause of death in the world. All the nations in the world including Pakistan started to register the patients suffering from cancer and this process is called cancer registry. This process is completed by the allotment of International Classification of Diseases (ICD) number. The purpose of this cancer registry program is to collect the data regarding the patient's name with CNIC (as to avoid repetition), age, gender, etiology, geographical distributions, type of cancer, site of cancer, grading and staging of cancer (as to evaluate degree of invasion and metastasis), management, morbidity and mortality. This will help higher authorities to make the required decision and to reduce combat this deadly disease.

History of cancer registry is about four hundred years old. The first step was taken in the London in the year of 1728, the attempt was made to collect the data about cancer registry but little knowledge was gained[1]. Katz A[2] (1899) was the first oncologist who was requested for general survey on cancer in the Hamburg. In the 1900 an attempt was made to register all the patients who were suffering from cancer and were under medical treatment in Germany. For that reason the questionnaires were made and distributed to all the physicians as to create the record about the prevalence of cancer in Germany[3]. The attempt to find out the

prevalence of cancer in Germany in the year of 1900 was failed. Then similar attempts were then made in Netherland, Spain, Portugal, Hungary, Sweden, Denmark and Iceland. These attempts were also recorded as failure, as similar attempts were also made to collect the statistical data regarding the cancer morbidity countrywide in Heidelberg in 1904 and Baden in 1906 but all surveys went unsuccessful[4]. Because of unsuccessful results and lack of interest of most of physicians to participate in surveys. Wood[5] in 1930 was suggested that cancer should be made notifiable disease in USA and that was necessary to make registration of cancer cases those were introduced first time. This was also considered a failure as only one third of cases were recorded[6].

After so many failures different agencies kept on working to adopt a methodology procedure to register the cancer's patients. Same kind of attempt was made in Mecklenburg in 1937 where physicians adopted a protocol to mention name of patients as to avoid multiple registration of cancer's patients and to determinate individual outcomes. All the persons that were dealing the management of cancer patients were provided the registration proforma or cards and were asked to fill these cards and return it back to statistical office of Rostock. The missing records were reminded daily. This method was fairly successful as it was indicated by registration of 200 new cases in the population of 100,000 during the year of 1937 to 1938[7].

The modern development of cancer registry system was first developed in Hamburg. This was stated with the idea that the public health workers and economist who were also involved in cancer registry along with medical practitioner and scientific workers. All these workers were provided with the cancer registry cards having patient's name, type of cancer and detailed information which was then transferred to central health department[8].

The most important impute for the determination of cancer registry worldwide emerged from a conference that was held in Copenhagen in 1946 where twelve leading International Oncologist recommended the establishment of cancer registration under the World Health Organization (WHO)[9]. As a result, the WHO in 1965 established the International Agency for Research on Cancer (IACR) and this was located in Tokyo. The determination of cancer morbidity and mortality is important for future planning resources, to access preventive measures and management strategies. The prevalence, patient's morbidity and mortality rates usually available after a few years[10]. The estimation of accurate and reliable current mortality statistics is a part of interest and should be developed properly[11-12].

Cancer incidences are rising worldwide. About 11 million new cases of cancer and 7 million deaths were notified due to cancer diseases in 2002[13]. About 25 million people were suffering from cancer up to 2002[7]. The prevalence of cancer varies in different geographical areas and according to different population groups[8]. The common risk factors are non-modifiable (genetic susceptibility and aging) and modifiable risk factor (tobacco, lifestyle, infectious agents, diet and physical activities)[14].

After describing the history of cancer registry system so that the Oncology Department of CHK Karachi also has a well establish system for registration of cancer patients. This department came to existence on September 2004 and handling about 630 in 2005 and the number of patients also increasing every year. Patients attending the department were both male and females with ages between 12 to 83 years having different type of cancers and from different geographical areas. All the patients enrolled on a performed questionnaires and cancer registry of patients has been made.

Our primary goal was to find out the prevalence, incidences, gender, age, etiologies, type of cancers, site of cancer, managements, morbidity and mortality. By collecting all this data, we have successfully created a prevalence list of different types of cancers in Sindh the largest province of Pakistan.

We were very much interested to compare the prevalence of different type of cancers in Sindh with the other provinces of Pakistan and then compared these results with other nations of world and to find out the differences observed in our country and other countries. Whatever the result obtained we will find out difference and to evaluate the etiologies and further managements.

METHODOLOGY
Retrospective observational study conducted at oncology outpatient department (OPD) of Civil Hospital Karachi (CHK), during the period of January 2004 to December 2011.

All the patients who attended the department, were included in this study with average age range was 12 to 83 years. The purpose of oncology department of CHK is to make the cancer registry and to provide supportive or palliative treatments; these are to provide chemotherapy, to coup any post chemotherapeutic complication.

The patients those were attending the department they might be old diagnosed patient or they might be new patients and they had complaints mimic the some kind of cancers. The patients those were already diagnosed referred from other institutes for the further managements to oncology department of CHK. These patients were attended by the doctors who were posted at Unit. Doctors were provided by a questionnaire (a copy of questionnaire attached), this was questionnaire filled by the doctors. Information given in the questionnaire are name, age, sex, residential address, CNIC number, present history, past history, family history, any surgical procedure, personal habits any other finding. After taking detail history the patients had been registered and patient had been given ICD number and appropriate managements had been stand after discussion tumor board.

After making this data, the prevalence / incidence of each type of cancer was also calculated each year.

Prevalence is the number of all the old and new cases having the diseases in a specified period divided by the population on risk in same specified period, multiply by 100,000. So that result can be read as number of cases per 100,000. At present the population of Sindh is 35,470,648.[15] Incidence is the occurrences of new cases in a specified period (usually period taken for observations is one year) divided by population on risk on in same period multiplied by 1000. The result can be mentioned as number of cases per 1000.

The percentage of each type of cancer was calculated as the number of specific type of cancer divided by total number of all type cancer multiply by 100.

RESULTS
All the cases those were attending department during the period of January 2004 to December 2011 were inducted in the present study. 5504 Fifty thousands, five hundreds and four patients were attending the department during this period. Out of these 2638 were male and 2866 female as shown in table-I and figure-I.

Prevalence and percentage of different type of cancers were calculated as shown in table-II and figure-II & III. The most common cancer in Sindh was breast cancer as this is the most common cancer in world.

The prevalence of different type of cancers was mentioned in table II along with their respective percentage.

The prevalence of breast, oral lymphoid tissue, blood, colorectal, liver & biliary tract, faciomaxillary, lung, uterus, esophagus, gastrointestinal stromal tumor, larynx, ovary, male genital system, Nasopharynx, urinary system and brain was 0.259651304, 0.227512054, 0.109386217, 0.09049736, 0.070762733, 0.06174119, 0.063150806, 0.068225424, 0.06089542, 0.056102725, 0.06089542, 0.039469254, 0.0400331, 0.020298473, 0.018606934, 0.010149237 and 0.005074618 per 10,000 people respectively. The percentage of breast, oral (included the oral cavity, soft and hard
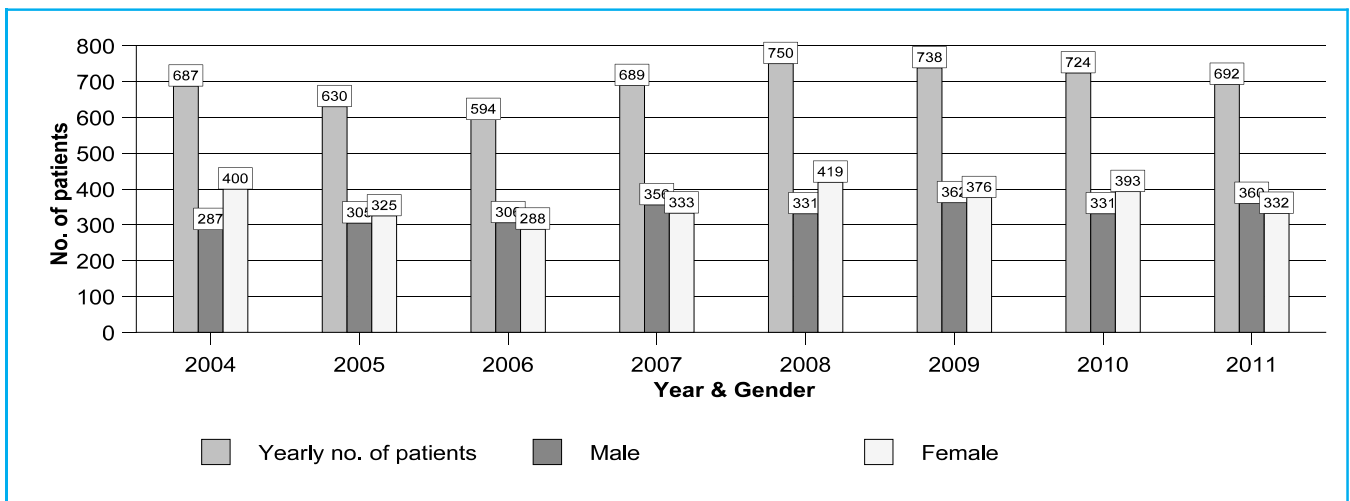
Year	No. of patients	Gender	
		Male	Female
2004	687	287	400
2005	630	305	325
2006	594	306	288
2007	689	356	333
2008	750	331	419
2009	738	362	376
2010	724	331	393
2011	692	360	332
Total	5504	2638	2866

Table-I. Yearly number of patients and Gender attending CHK OPD from 2004 to 2011

Type of cancer	Number of Cases	Prevalence / 10,000	%age
Breast	921	0.25961	20.56
Oral	807	0.22751	17.8
Lymphoid Organs	388	0.10939	8.57
Blood	321	0.0905	7.03
Colorectal	251	0.07076	5.83
Liver & Biliary tract	219	0.06174	4.78
Fcacio-Maillary	224	0.06315	4.96
Lung	242	0.06822	5.52
Uterus	216	0.06089	4.8
Esophagus	199	0.0561	4.93
GIST	216	0.06089	5.11
Larynx	140	0.03947	2.99
Ovary	142	0.04003	3.23
Male Genital System	72	0.0203	1.65
Nose & Pharynx	66	0.01861	1.59
Urinary System	36	0.01015	0.76
Brain	18	0.00507	0.41

Table-II. Number of cancer during the period of January, 2004 to December, 2011 (8 years), Prevalence of different type of cancer per10, 000 people and percentage cancers

palates and upper and lower jaws), lymphoid organs, blood, colorectal, liver & biliary tract, faciomaxillary (included all the cancer of head and neck except oral cancer), lung, uterus, esophagus, gastrointestinal stromal tumor, larynx, ovary, male genital system, Nasopharynx, urinary system and brain was 20.56, 17.8, 8.57, 7.03, 5.83, 4.78, 4.96, 5.52, 4.8, 4.93, 5.11, 2.99, 3.23, 1.65, 1.59, 0.76 and 0.41 per 100 patients. The type of cancer that had less than 0.03% not including for further statistical According to our data the ranking

Patients and Gender attending OPD of Oncology Department during the 2004 to December, 2011

of different types of cancers was done and this was from first to last, most common cancer breast, oral lymphoid tissue, blood, colorectal, liver & biliary tract, faciomaxillary, lung, uterus, esophagus, gastrointestinal stromal tumor, larynx, ovary, male genital system, nose & pharynx, urinary system and while lat one brain.

DISCUSSION
The cancer registry system formed a back room rather than a front line for the presentation and treatment of cancer. The purpose to create a cancer registry is to formulate the statistics regarding the prevalence of cancer in different populations. This data than, will be helpful to find out ranking of different types of cancers in sense of their prevalence and also formulate the gender, age, ethnicity, etiology and treatment. These data also helpful to control the prevalence of different types of cancer and make certain polices to reduce the risk factor and change life style. The food is also one of major risk factor while habit and addictions to certain kinds of material like paan, gutka (gutka is a preparation of betel nuts and
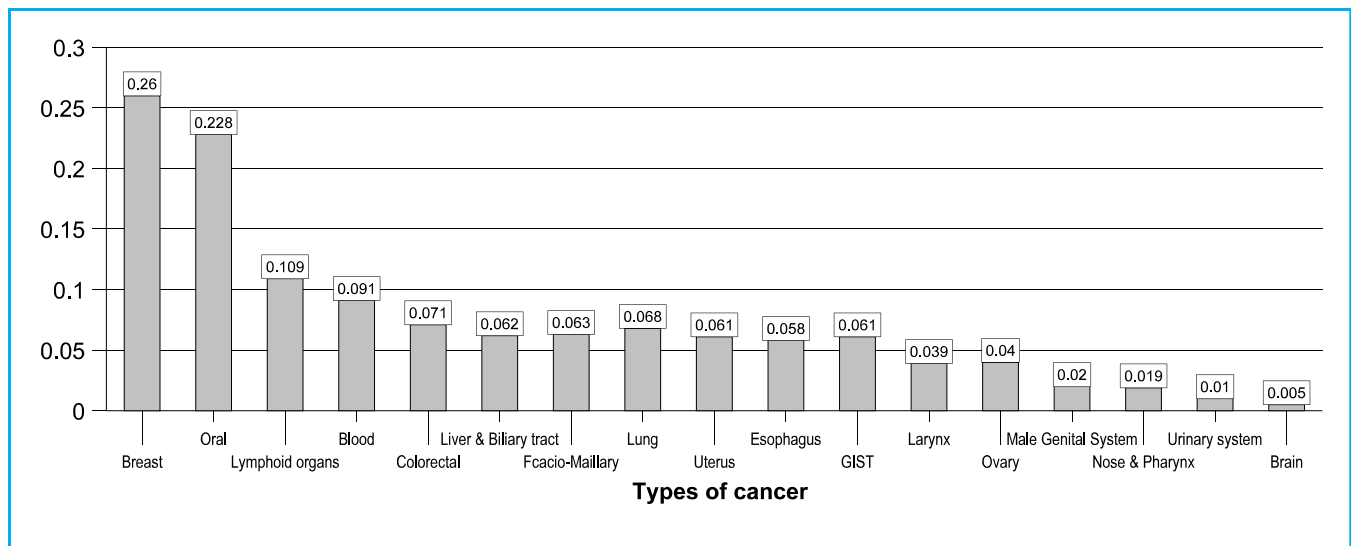

Figure-II. Number of cancer during the period of January, 2004 to December, 2011 (8 years), Prevalence of different type of cancer per 10, 000 people
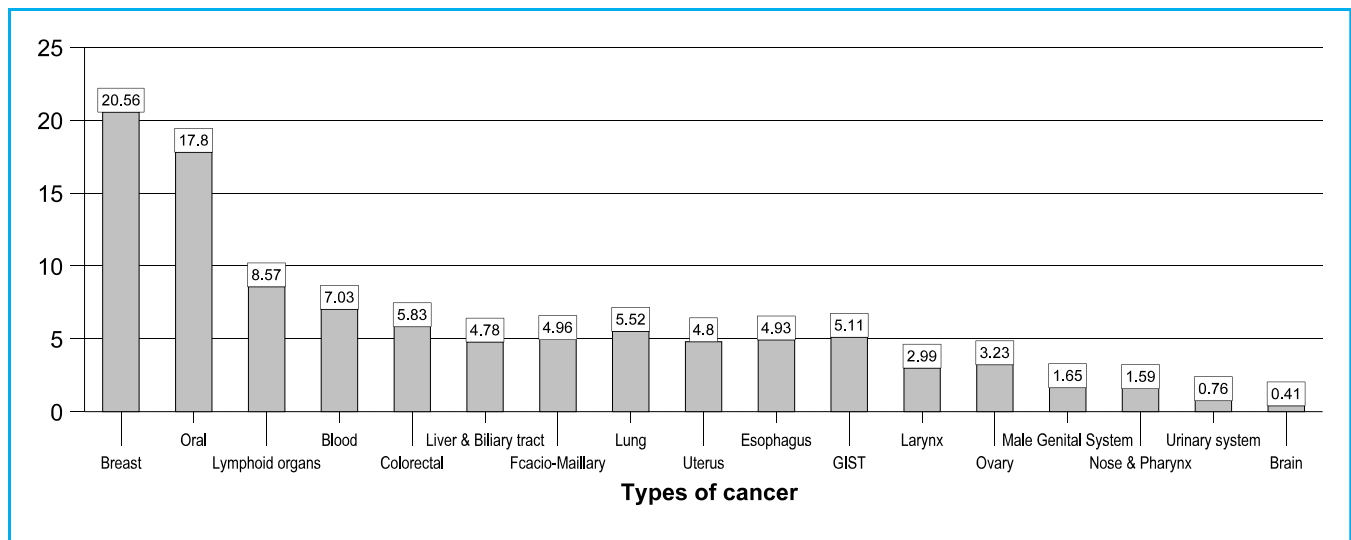

Figure-III. Relative Percentage of Different type of Cancers

tobacco designed to be chewed, potentially addictive and cancerous) and betel nuts which are mostly used at this part of world.

The members of International Association of Cancer Registries did a survey on cancer registry and they had found that most of these were fit to this accepted mold while some extend beyond it, in reference to their direct conduct of epidemiologic research and to impose the control programs, particularly screening. The bias can occur while making the cancer registry this may be part of the patients or misread by the persons doing registry. The registration system has expanded role than this will require more skills who are doing registration, supported by more rational control program for example direct participation in epidemiologic research, evaluation of interventions against cancer at the population level, situation analysis and cancer control planning, and implementation of aspects of cancer control[16].

Oncology department of CHK also adopted well organized cancer registry program. From January 2004 to December 2010, this department had been collecting data about each and every patient. The data were collected by the trained doctors on prescribed forms and than these data were entered in computer. From January 2011 the department purchased software, which had system to allot ICD coding and made the prevalence at same time.

According to data which were collected at Oncology Department at CHK, had some resemblance to the international data for example the breast cancer is one of the most commonest cancer through out world, as same was found on the basis of our data. But in USA second most common cancer is the colorectal carcinoma[17] while based our study second most common cancer in Sindh was the cancer of oral cavity and this was due to habit.

Karachi is a metropolitan city with people of different ethnic groups resides in this city. Civil Hospital of Karachi situated at the center of city.

The people to this hospital are coming from different areas of Karachi. The CHK is a part of public sector and oncology department offers their service. This Department help poor and needy cancer patients to get cytotoxic drugs free of cost that's why patients attending this department also coming from other cities of Sindh. Due to this reason patients from other cities Sindh were included in this study.

The limitation of this study that data were collected from only oncology department Civil Hospital Karachi. So that exact prevalence of different types of cancers could not be calculated. There should be centralized system to collect data than data will be published quarterly or half yearly or annually. But still we are lacking the centralized body that will be responsible to collect the data from all over the Pakistan and published these data for the health betterment of people of Pakistan.

CONCLUSIONS
It is concluded that this might be the first step to publish the statistics for the benefit of people, to avoid risk factors and better management of patients. All these factors will require cooperation between all bodies working for cancer registry through out Pakistan.
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PREVIOUS RELATED STUDY

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