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FREQUENCY OF PRIMARY SOLID MALIGNANT NEOPLASMS IN BOTH SEXES, AS SEEN IN OUR PRACTICE

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Background: To determine the frequency of various histologic types of primary solid malignant neoplasms in males and females, in our practice, in a large series of surgical biopsies. **Methods:** A retrospective study of 20,000 consecutive surgical biopsies in the section of Histopathology, Aga Khan University Hospital (AKU), Karachi, in 2004. **Results:** Squamous cell carcinoma of oral cavity was the commonest malignant neoplasm in males followed by diffuse Large B cell, Non-Hodgkin's lymphoma and Prostatic adenocarcinoma. In females, infiltrating Ductal carcinoma of the breast was overwhelmingly the commonest malignant neoplasm followed by Squamous cell carcinoma of the oral cavity and esophagus. **Conclusion:** Out of 20,000 biopsies, there were 4616 (23.08%) malignant neoplsms. Carcinoma of oral cavity is very common in our population in both sexes.

Key Words: Malignant Neoplasm, Male, Female, Primary

INTRODUCTION

The section of histopathology at the AKU is the single largest center for histopathology in Pakistan and serves as a referral center for difficult and challenging cases from the entire country. A significant percentage of biopsies reported here are malignant neoplasms. In 2004 malignant tumors comprised 23.08% of all biopsies [1]. Most modern and state of the art techniques are used to reach a definite diagnosis and to ensure quality reporting which incorporates all information that is relevant to clinician and oncologist for proper management of patients.

This study was designed to determine the frequency of various primary solid malignant neoplasms in both sexes, in a large series of surgical biopsies. This study, therefore may serve as a guideline regarding the frequency of malignant neoplasms in our population.

MATERIAL AND METHODS

Retrospective study of 20,000 consecutive surgical biopsies reported in the section of histopathology, AKU in 2004 is carried out. Data was obtained by retrieving the filed surgical biopsy reports in the section. All primary malignant neoplasms in this sequence of 20,000 biopsies were included in the study. Metastatic neoplasms were not included. Borderline neoplasms such as borderline serous and mucinous neoplasms of ovary, giant cell tumor of bone (osteoclastoma), dermatofibrosarcoma protuberans (DFSP), conventional carcinoid tumors, granulosa cell tumor of ovary, etc were not included. Similarly, WHO grade 1 central nervous system neoplasms such as classic meningioma, pilocytic astrocytoma, myxopapillary ependymoma etc were not included. All Non Hodgkin's and Hodgkin's lymphomas were included in the study, however leukemias were not included.

RESULTS

Out of 20,000 biopsies there were 4616 (23.08%) malignant neoplasms, 2393 (51.84%) of these were in males, while 2223 (48.16 %) were in females

Squamous cell carcinomas of oral cavity (including tongue, lips, pharynx, gums, and palate) were the commonest malignant neoplasms in males followed by diffuse large B cell Non Hodgkin's lymphomas and prostatic adeno-carcinomas (Table 1). In females infiltrating ductal carcinomas of breast were overwhelmingly the commonest malignant neoplasms followed by squamous cell carcinoma of oral cavity (including tongue, lip, pharynx, gums, and palate) and squamous cell carcinoma of esophagus (Table 2).

DISCUSSION

The section of histopathology, AKU receives histopathology specimens from the entire country and as such this data may be an indicator of trends, in distribution of malignant neoplasms in our population. This data is obtained from 20,000 consecutive biopsy specimens reported by us in 2004. It must be mentioned that we receive specimens from all four provinces plus Azad Kashmir. This data may not be an absolute representation but still may be considered an indicator of trends of malignancy in our country which may guide other researchers in the field, and certainly depicts the absolute frequencies of malignant neoplasms diagnosed at the largest center for histopathology in Pakistan. We wish to emphasize that we are reporting only the frequency of malignant solid neoplasms diagnosed in our practice and we are not reporting incidence, nor is

Table 1 - Prevalent malignant neoplasms in males (n = 2393)

HISTOLOGIC TYPE	Nos.	%
Squamous cell carcinoma of oral cavity (including tongue, lips, pharynx, gums, palate)	238	9.94
Diffuse large B cell Non-Hodgkin's lymphoma	223	9.32
Prostatic adenocarcinoma	165	6.89
Colorectal adenocarcinoma	157	6.56
Papillary urothelial carcinoma of urinary bladder	138	5.77
Squamous cell carcinoma of esophagus	127	5.31
Gastric adenocarcinoma	118	4.93
Squamous cell carcinoma of larynx and vocal cord	112	4.68
Squamous cell carcinoma of skin	102	4.26
Hodgkin's lymphoma	82	3.43
Non small cell carcinoma of lung (squamous cell carcinoma and adenocarcinoma)	80	3.34
Hepatocellular carcinoma	72	3.00
Renal cell carcinoma	43	1.80
Testicular germ cell tumors (seminomatous, non-seminomatous and mixed germ cell tumors)	42	1.75
Glioblastoma Multiforme (GBM)	40	1.67
Ewing's sarcoma / PNET	40	1.67

Table 2 - Top 15 malignant neoplasms in females (n = 2223)

HISTOLOGIC TYPE + SITE	Nos.	%
Infiltrating ductal carcinoma of breast	746	33.56
Squamous cell carcinoma of oral cavity (including tongue, lip, pharynx, gums, palate)	157	7.06
Squamous cell carcinoma of esophagus	119	5.35
Colorectal adenocarcinoma	95	4.27
Diffuse large B cell Non Hodgkin's lymphoma	88	3.96
Endometrial adenocarcinoma	86	3.87
Squamous cell carcinoma of uterine cervix	81	3.64
Papillary thyroid carcinoma	52	2.34
Papillary serous cystadeno-carcinoma of ovary	51	2.29
Gall bladder adenocarcinoma	45	2.02
Gastric adenocarcinoma	43	1.93
Ewing's Sarcoma / PNET	36	1.62
Papillary urothelial carcinoma of urinary bladder	35	1.57
Squamous cell carcinoma of skin	32	1.44
Hodgkin's lymphoma	27	1.21
Squamous cell carcinoma of larynx and vocal cord	27	1.21

this a cancer registry. We have included only the histopathology biopsy specimens and have excluded cytology (including fine needle aspiration), bone marrow and trephine specimens etc.

As shown by our results, squamous cell carcinomas of oral cavity occupy the top position in males and are second commonest in females. The reason may be the excessive use of tobacco by both males and females in our population. In females, infiltrating ductal carcinoma of breast occupies the top position and in fact dwarfs all others by comprising 33.56% of all malignant neoplasms in females. In fact, it represents the single commonest malignant neoplasm, more common than any other (even when both sexes are included) and comprises 16.16% of all malignant neoplasms (in both sexes) in our study. This also corresponds to the figures reported in annual cancer registry report from SKMCH 2004[1]. If other histological types of breast carcinoma and male breast carcinoma are also included, this figure rises even higher. The position of infiltrating ductal carcinoma of breast as the commonest malignant neoplasm reflects the international data[2]. However, squamous cell carcinomas of oral cavity are definitely more common in our study compared to international data. The likely cause is as mentioned above, the excessive use of tobacco in paan, chalia etc by both males and females in our population. Another extremely common malignancy in our practice is the diffuse large B cell non Hodgkin's lymphoma, which occupies second place in males (9.32%) and fifth in females (3.96%). If all other types of Non Hodgkin's lymphomas are considered then these lymphomas are even more common. Our findings support the international data[3]. Unlike internationally, where it is the commonest malignant neoplasm in males[4], prostatic adenocarcinoma occupies only the third place in males in our study, while non small cell carcinoma of lung is low down at number 11, and it does not even feature among the top 15 in females (Table 1). This is contrary to international data, where lung carcinoma is the commonest malignant neoplasms in males and second only to breast carcinoma in females [5]. On the other hand, papillary urothelial carcinoma of urinary bladder and squamous cell carcinoma of larynx and vocal cord in males, carcinoma of uterine endometrium and cervix

in females and carcinomas of colorectal, esophagus and stomach occupy high positions in both sexes (Table 1&2). These figures correspond roughly to international data and reflect the geographic distribution of some of these neoplasms[6-14]. Hodgkin's lymphoma and hepatocellular carcinoma in males, carcinoma of gall bladder and papillary thyroid carcinoma in females and squamous cell carcinoma of skin in both sexes were also common.(table1 & 2). These figures also correspond to international data[15-17]. Among the sarcomas, Ewing's sarcoma / PNET makes an appearance in both sexes. Papillary serous cystadenocarcinoma of ovary makes it into the top fifteen in females, while renal cell carcinoma and testicular germ cell tumors have places in the top fifteen in males (Table 1&2). Among CNS neoplasms only glioblastoma multiforme makes an appearance in our study in males. However, it does not figure in the top 15 malignant neoplasms in females (Table 1).

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