ORIGINAL ARTICLE

Head and Neck Cancer Report of Karachi 2013-18: A Cross Sectional Survey

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OBJECTIVE: Oral Cancers are considered the most commonly occurring cancers which contribute to (20 %) of mortality around the globe. It is one of the diverse diseases which attacks the human body's immune system. This study aims to evaluate Oral Cancer's frequency, proportion, and trends and its specifications on gender.

METHODOLOGY: A cross-sectional survey was conducted at Jinnah Postgraduate Medical Centre which is a public tertiary care hospital in Karachi. This survey was conducted from (2013 to 2018) following the process of IRB approval (No.F.2-81-IRB/2019-genl/33057/JPMC). The data was collected from the oncology department of JPMC and it includes all demographic variables with ethnicities and occupations of eligible patients. We enrolled all participants under this eligibility criteria and excluded participants not belonging to the Sindh province and who were directed from different hospitals in Sindh.

RESULTS: Mainly, Oral Cancers were reported and common among Pakistani males. The average age of cancer patients was (50± 7). Out of all reported cases, only a few had a positive family history but the majority were habitual of taking Cigarettes and Poly ingredients like Pan and Gutka. Buccal cancer (38.49%) was the most common type of cancer found between 2013- and 2018.

CONCLUSION: Oral Cancers are one of the most prevalent types of cancers among the Pakistani population, with a predominant occurrence observed in men.

KEYWORDS: Cancer report, Head and Neck, Karachi

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INTRODUCTION

International Classification of Disease (ICD-10) has categorized head & neck cancers among the top ten malignancies around the globe.[1] Cancer is one of the serious health threats leading to death in many Asian countries.[2] In the past 20 years, its incidence has increased significantly and now it's ranked the fifth most common cancer worldwide.[3] Approximately more than 3 million new cancer cases and more than 2 million cancer deaths in the year 2000 were reported from Asia. Furthermore, projections suggest that in case if any of these existing prevention strategies remain unchanged the number of new cancer cases in Asia will increase to 7.1 million by the year 2020.[4]

According to Regional Centre Care (RCC) India Kerala oral cancer representing the Head and Neck constitutes 14% of all cancer cases.[3] Subsequently, male to female ratio of oral cancer is 17:10.5%[5] making it the 1st commonest cancer in males and the 3rd most commonest cancer among females.[6] In Pakistan, a rising incidence of HNC has been observed in the last few years accompanied by a consistent increase in the use of chewing tobacco thus it now ranks as the second

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most prevalent cancer.[7] An annual incidence rate of 4.1 per 100,000 in males and 4 per 100,000 per year in females was also reported in Pakistan, especially in Karachi and Jamshoro.[1] Sindh had a significantly high prevalence rate followed by Multan in Punjab.8 Whereas, Peshawar in the Northwest Frontier Province has a far lower rate.[8] Subsequently, another study conducted in Balochistan reported that the Kalat division ranked third with 7.63% of carcinomatous lesions. The most common age range among subjects was between 60 and 70 years, comprising 25.7% of cases. Squamous cell carcinoma was the most prevalent type of neoplasm, accounting for 54.02% of all cases, followed by 14.26% of lymphomas.[9] Unfortunately, there has always been a lack of cancer incidence data available for any population in Pakistan.[10] The only data available from Karachi is sporadic relative frequency information from tertiary care hospitals, including the Jinnah Postgraduate Medical Center (JPMC), Karachi, and a network of hospital registries coordinated by the Pakistan Medical and Research Council.

This study aimed to determine the frequency of various Head and Neck cancers and the patterns of common cancers in males and females of Karachi, Pakistan.

METHODOLOGY

We retrospectively investigated all records of the oncology department of Jinnah Postgraduate Medical Centre, Head & Neck Cancer (HNC) patients who were diagnosed, treated, and referred to the oncology department between January 2013 and June 2018 were highlighted. Major parameters including age, gender, etiology, marital status, family history, combined risk, province, occupation, and residency all were evaluated. The diagnostic site of cancer was classified into nine main groups: cancer of the nasal cavity, pharynx, larynx, cheeks, lip, tongue, neck, squamous cell carcinoma, and unknown.

RESULTS

In total, we enrolled all 943 cases of oral cancers that were reported in the oncology department of Jinnah Postgraduate Medical Centre for treatment from 2013 to 2018. Among all reported cases, average patients were between age 41 to 60 years with a negative family history of cancers. Two-thirds of cases were reported among males whereas, around 30% were pan eaters. However, Pan, Cigarette, and Gutka were the most common habits found in our settings. The majority of cases were found among the labor group. (Refer to Table 1)

A thorough perusal of the data revealed that the most common prevalent form of cancer was cheek Cancer which accounts for 38.49% of the reported cases during the pendency of the study period. Cheek Cancer was followed by tongue Cancers which accounted for 13.07% of the reported cases. The third most prevalent common form of cancer was in the larynx which was 10.46% of the total reported cases. (Refer Table 2)

Table 1: Frequency of habits

Habits	n (%)
Pan	287 (30.4%)
Gutka	78 (8.27%)
Pan and Gutka	115 (12.2%)
Pan and Smoking	201 (21.3%)
Pan, Gutka and Smoking	47 (4.98%)
No habits	215 (22.85%)

Table 2: Site specific frequency of oral cancer

DIAGNOSTIC SITE	Total (943)	
	N	%
Nasal Cavity	15	1.6
Pharynx	88	9.20
Larynx	100	10.46
Cheeks	368	38.49
Lip	35	3.66
Tongue	125	13.07
Neck/submandibular region	81	8.47
Eye	39	4.079
Thyroid	28	2.92
Ear	4	0.418
Brain	34	3.55
Metastasis	35	3.66
Unknown	4	0.418

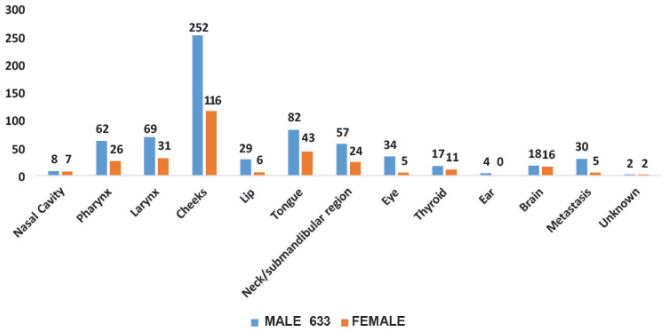
More than one-third of cases of cheek cancer were reported among males whereas tongue cancer, pharynx cancer, and larynx Cancer were the other most commonly occurring types of Cancers reported during the study period. (Refer Table 3)

Table 3: Frequency in Males and Females

GENDER	n (%)
Male	633 (66.7%)
Female	310 (33.33%)

Eye and Metastasis cancers were found to be more commonly occurring in males as compared to females. Whereas, on the contrary, Brain Cancer and Thyroid Cancer were more commonly reported among Females. (Refer Figure 1)

Figure 1: Site specific presentation of Oral cancer stratified on Gender



DISCUSSION

The cancer report of 2013-2018 conducted in Karachi, Pakistan found the frequency of head and neck cancer and evaluated variation among genders.

Our study reveals that cheek/buccal mucosa cancer is the most prevalent, accounting for 38.49% of cases, followed by tongue cancer at 13%, and larynx cancer contributing 10% of cases. Conversely, one finding deviates slightly from Bhurgri et al.'s 2000 & 2006 studies, which reported buccal mucosa and gingival cancers as the most common cancers in Asian countries. This difference may be attributed to the data collected from a specific region, as a centralized Cancer Registry Information system is unavailable in Pakistan.

Bhurgri 2006 also found a male-to-female ratio of 1:1.5. On the other hand, Franceschi et al. 2000 reported an equal male-to-female ratio in many countries of the world.[12] However, in the current study a 1:2 ratio of female to male has been observed. This variation is possibly due to the known reality present between socio-economic and cultural differences.[1,13] Similarly, based on the evidence from the literature it is justified to suggest that this increase in the prevalence of Head & Neck Cancer is associated with an increase in the consumption of Quid in the form of Paan, Areca nuts (also called Betel nuts), and Lime (also known as Calcium Hydroxide) among the individuals of lower socio-economic group.[14,15] Secondly, Bidi is the most commonly used form of tobacco in low-income groups, which are Temburni leaf (Diospyros melanoxylon) rolled tobacco leaves spanned with threads.[16] In 2008, Madani et al. 2008 surveyed and reported, that Bidi smoking has a quadruple effect on oral cancer as compared to other forms of smoking. Other forms of tobacco are also very common in Pakistan, especially in the Northern parts which include: Nass/Naswar, Pan Masala, and Gutka (collectively called Poly ingredients oral dip products).[8]

Based on this study and various researches[1,3,5,6,8,9] conducted in Pakistan it is evident that the increasing incidence of oral cancer has become a significant concern in Pakistan's healthcare sector, placing a greater burden on the economy.

STRENGTHS OF THE STUDY

This study conducted in the oncology department of Jinnah Post Graduate Medical Center has significant strengths. First, the data collection from the public sector and the oldest hospital in Karachi provides a comprehensive understanding of the local cancer landscape. This ensures a diverse representation of patients from different socioeconomic backgrounds and healthcare access levels. Additionally, Jinnah Postgraduate Medical Centre's pivotal role as a hub for cancer care in Karachi is highlighted by its provision of free cancer treatment and innovative technologies. This unique feature enhances the study's relevance and demonstrates the institution's commitment to delivering equitable healthcare.

LIMITATIONS OF THE STUDY

This study also faces notable weaknesses. Firstly, as a cross-sectional study, it provides only a snapshot of data at a single point in time, lacking the ability to establish causality or assess changes over time. This limitation hinders the study's ability to capture longitudinal trends and understand the dynamic nature of oncological diseases. Additionally, the absence of a centralized cancer registry system in Pakistan poses a significant obstacle to the study's comprehensiveness and accuracy. Without a robust registry system, there may be underreporting or incomplete data, leading to potential biases and inaccuracies in the study findings. Furthermore, the lack of a standardized registry impedes efforts in disease prevention, early detection, and effective resource allocation, ultimately hindering public health initiatives aimed at combating cancer in the region.

CONCLUSION

Oral Cancer is a multifactorial disease that is widely spread in Pakistan. Every year, Pakistan loses hundreds of millions of lives due to the unavailability of proper cancer hospitals and reporting.

CONFLICT OF INTEREST

None to declare

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