

Head and Neck Squamous Cell Carcinoma – A 5-year experience at a tertiary care hospital in Bahawalpur

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Objective: To determine frequencies and incidence rates of site-specific head and neck squamous cell carcinoma from Bahawalpur region.

Methodology: It was a descriptive study including 184 biopsy proven cases of squamous cell carcinoma from head and neck region seen by Department of Pathology, Quaid-e-Azam Medical College Bahawalpur, Pakistan during January 2008 and December 2012. Data was acquired from hospital and laboratory records and analyzed using SPSS version 18.

Results: Mean age of the patients was 55.76 ± 7.21 (median: 50) years. Male to female ratio was almost 2:1. History of smoking was positive in 72.28% of patients. The most common affected sites in order of

frequency were larynx (n=79, 42.93%), hypopharynx (n=36, 19.56%), oral cavity (n=29, 15.76%), face/skin (n=24, 13.04%), lips (n=10, 5.43%) and tongue (n=6, 3.26%). More than a half of the tumours were classified as well-differentiated squamous cell carcinomas (n=94, 51.09%).

Conclusion: Head and neck squamous cell carcinoma has a peak age in 6th decade of life and twice common in men as compared to women. Most frequent site of head and neck squamous cell carcinoma in our region was larynx. (Rawal Med J 2013;38: 341-344).

Key Words: Head and neck, cancer, squamous cell carcinoma, larynx, pharynx, oral cavity.

INTRODUCTION

Head and neck cancer (HNC) is a major global health issue, with about half a million new cases diagnosed per year, and their incidence appears to be increasing in developing countries.^{1,2} Head and neck cancers, ICD-10 (International Classification of Diseases, 10th Revision) categories C00-C14 (cancer of the lip, oral cavity and pharynx) and C32 (larynx) are categorized amongst the top ten malignancies globally. Head and neck cancers are grouped together with the justification of similar natural history, epidemiology, risk factors, morphology, and control measures.³ HNC comprise of soft tissue neoplasms of oral cavity including lips, nasal cavity and paranasal sinuses (PNS), pharynx, larynx and salivary glands.⁴ More than 5% of all malignant tumors worldwide are head and neck cancer, with more than 100,000 cases diagnosed in Europe each year.⁵

Many factors that are implicated for its causation are consumption of tobacco in its various forms, alcohol, smoking habits, lack of awareness, and lack

of proper nutrition.⁶ Other factors include irradiation, oncogenic virus infections like Epstein Barr virus (EBV) and Human Papilloma Virus (HPV). EBV is commonly associated with nasopharyngeal carcinoma and HPV has been associated with laryngeal carcinoma.^{3,7}

There are more women and fewer smokers in the younger patient group.⁸ Incidence of oral cancer in South-East Asia and of oral cavity plus nasopharyngeal cancer in East Asia follows the global HNC pattern.⁷ In the Western world, squamous cell carcinoma of the head and neck (HNSCC) accounts for more than 90% of all head and neck cancers. The 5-y survival rate of less than 30% is due to a high lymphogenic metastatic tendency, a high recurrence rate, and an increased occurrence of secondary tumors.⁵

The commonest epithelium covering the head and neck mucosal surfaces is squamous epithelium and this may explain the domination of squamous cell carcinomas.⁹ SCC has a focal invasion and its behavior depends on the region that it originates.

HNSCC has high rates of recurrence and its advanced disease at the time of diagnosis.¹⁰ This study aims at contributing the similar data from Bahawalpur region.

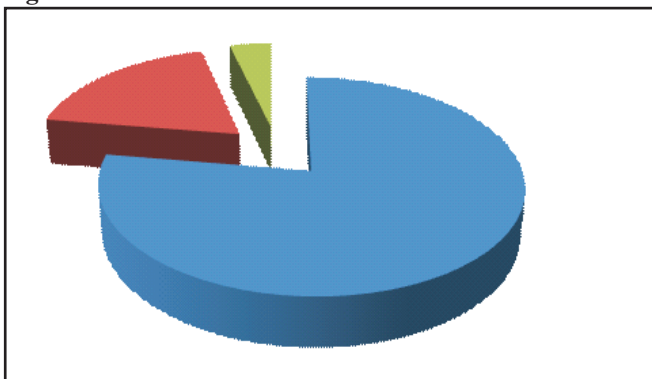
METHODOLOGY

It was a retrospective, descriptive study and included 184 biopsy proven cases of SSC from head and neck region seen by Histopathology Section of Department of Pathology, Quaid-e-Azam Medical College, Bahawalpur, Pakistan in a period of 5-years from January 2008 to December 2012. Data about age, gender, exact site of tumor, history of tobacco smoking, histological diagnosis and tumor grade was acquired from hospital and laboratory records. Only current active smokers were regarded as smokers. Past smokers or current passive smokers could not be traced due to retrospective design of the study. Data was entered and analyzed using SPSS version 18.

RESULTS

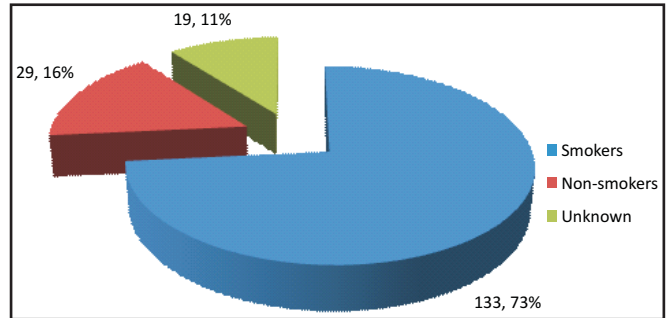
A total of 184 biopsy proven cases of HNSCC were seen during the study period. Mean age of the patients was 55.76±7.21 years (range 23-85). Male to female ratio was almost 2:1 (126 males: 58 females). Females were affected at little younger age 53.15±6.90 years as compared to their male counterparts (58.33±7.85 years).

Fig. 1. Rural-Urban Distribution of Patients of HNSCC.



Majority of patients were village dwellers (n=141, 76.63%), as shown in Fig. 1. History of current active tobacco smoking was positive in a large proportion (n=133, 72.28%) of patients, as shown in Fig. 2.

Fig. 2. Smoking Status of Patients of HNSCC.



The most common affected sites in order of frequency were larynx (n=79, 42.93%), hypopharnx (n=36, 19.56%), oral cavity (n=29, 15.76%), face/skin (n=24, 13.04%), lips (n=10, 5.43%) and tongue (n=6, 3.26%).

Table 1. Histological Grades of HNSCC.

Histological Grade	Number	Percentage
Grade-1	94	51.1%
Grade-2	37	20.1%
Grade-3	49	26.6%
Grade-4	04	2.2%
Total	184	100%

Just more than a half of the tumors were histologically classified as well-differentiated squamous cell carcinomas (n=94, 51.09%). On the basis of presence of keratin, intercellular bridges and low mitotic activity, tumours were graded (Table 1).

DISCUSSION

Head and neck malignancies are common in several regions of the world where tobacco use and alcohol consumption is high. The highest rate of oral cancer is found in the developing world where oral cancer with pharynx combined is the fourth commonest site of cancer.¹ In the Western world, HNSCC accounts for more than 90% of all head and neck cancers.¹¹ Pakistan falls into a high risk head and neck cancer geographical zone, presentation is late and treatment is not optimal.³ Lack of national tumor registry in our country is the main reason for lack of accurate statistical data about prevalence and incidence of cancer.¹²

However, regional and institution-based registry systems from different centers are providing scattered but useful information regarding the prevalence of cancer. Centers like AFIP Rawalpindi, IRNUM Peshawar, PMC Faisalabad, QMC Bahawalpur, KEMC Lahore, JPMC Karachi and the well-organized Karachi tumor registry are serving the purpose to a great extent.¹² Present study focuses on HNSSC in one of the largest tertiary care hospitals in Southern-Punjab.

Majority of the patients belonged to rural areas (>75%). A significant number of patients (>70%) had a known active history of tobacco smoking. Our results were consistent with similar findings all over the world. A study from India suggested that tobacco habit was significantly related with the incidence of HNSSC and persons with current addiction had a 2.17 fold increased risk of cancer development.¹³ A case-control study from Germany reported that out of 200 patients suffering from HNSSC, 95.5% had smoking history.¹⁴

In a study from Yemen, mean age of presentation was 51.3±14.9 years¹ and a study from Sudan found that mean age of presentation was 48.79.⁹ In our study mean age was 55.76±7.21 years. A study from Lahore, Pakistan reported similar peak age for head and neck malignancy.¹² The male to female ratio in Nairobi was 2:1,⁷ and 2.9:1 in a study from India.⁶ Our study also showed a similar male to female ratio of almost 2:1.

In our study, the most common affected site was larynx (42.3%). In a study of 89 cases of head and neck cancers in a tertiary care hospital in Nigeria, larynx cancer constituted 4.5% of cancers.¹⁵ However, a study from Pakistan showed larynx to be the most frequent site of head and neck cancer,¹² a finding consistent with our results.

We found that hypopharynx (19.56%) was second most common site. In Indian state of Bihar, it was the third most common cancer, predominately of squamous cell carcinoma type.⁴ A study from Nepal found that 10.3% of cases were hypopharynx SCC.¹⁵ Our study shows significantly higher incidence of hypopharynx SCC, which may be due to the reason that the sample size of other studies was considerably larger.

In our study, frequency of oral cavity tumors was the third most common site (15.76%) and tongue as a site of SCC had only 3.26% frequency. These results are comparable to an Indian study in which 32.67% were in tongue region and most of them were of SCC type. Other researches also reported oral cavity cancers to be a common site of HNSSC.¹⁶⁻²⁰ Another series of 5865 patients from Gulf region showed that oral cancer was 8th commonest and carcinoma arising in pharynx was 7th commonest malignancy.²¹

CONCLUSION

Head and neck squamous cell carcinoma has a peak age in 6th decade of life and twice common in men as compared to women. Most frequent site of HNSSC in Bahawalpur region was larynx.

Author contributions:

Conception and design: EU, KU
 Collection and assembly of data: MHC, SS
 Analysis and interpretation of the data: EU, MHC
 Drafting of the article: MSA, SS, MHC
 Critical revision of the article for important intellectual content: MSA, KU
 Statistical expertise: EU
 Final approval and guarantor of the article: EU, KU
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