



Pattern of Head and Neck Cancer in Yemen

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Abstract

Head and neck cancer constitutes one of the commonest malignancies in Yemen. There may be a role for the use of Shamma and Zarda and Khat for the increase of HNC in Yemen. This study was conducted retrospectively with an overall aim to describe the pattern of head and neck cancers among Yemeni patients attending the Oncology Department of Al-Gamhouria Teaching Hospital, Aden, for the period from Jan. 2001 to Dec. 2004.

The study included 183 patients with head and neck cancers (Lymphoma and thyroid were excluded), 134 were males (73.2%) and 49 were females (26.8%), with male to female ratio of 2.7:1. The mean age was 51.3 ± 14.9 years (range: 3 – 82 years). Statistically, there is significant difference between the mean age of male (49.5 ± 15.1 years) and female (45.4 ± 16.3 years) patients with head and neck cancers [$t= 2.1$, $p: 0.03$]. The common types of head

and neck cancers in this study are cancers of the oral cavity (31.7%), followed by pharyngeal (22.9%) and laryngeal (19.1%). In relation to sex, there is a significant statistical relationship between certain head and neck cancers and sex ($p: 0.0000$). In males, the common cancers are oral cavity cancers (22.7%), laryngeal (22.1%) and pharyngeal cancers (20.8%). The common histopathological type of head and neck cancers in this study is the well differentiated squamous cell carcinoma (70.5%).

This study concluded that head and neck cancers are among the common health problems affecting Yemeni patients and recommended further wide national studies to determine the real incidence and the risk factors associated with such cancer.

Key words:

Head and neck, cancer, Squamous cell carcinoma

Introduction:

Head and neck cancer is a major health problem worldwide ⁽¹⁾. It 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 ⁽²⁾. It is a bigger problem in developing countries like Yemen, where it is ranked the fourth common cancer in both sexes ⁽³⁾.

Head and neck cancers are primary malignant neoplasms that occur in several anatomical sites in the head and neck region such as the oral cavity, ear, scalp, nasal cavity, paranasal sinuses, nasopharynx, hypopharynx, oropharynx and salivary gland ⁽⁴⁾.

As with many types of cancer the risk of developing a head and neck cancer increases with increasing age, and it is mostly diagnosed after 50 years of age. The risk increases in proportion to the intensity and duration of the exposure to each carcinogen. Yet, individual susceptibilities to these risk factors vary within the general population. The basis for this susceptibility may be inborn or acquired, which is still under investigation.

Head and neck cancers are mainly seen in the low socioeconomic strata, making it more common among Yemenis ⁽⁴⁾. Smokeless tobacco (shamma and zardah), in addition to khat treated with chemicals and pesticides play an important role in the etio-pathogenesis of head and neck cancers. The risk in Yemen may be increased in proportion to the intensity and duration of the exposure to each carcinogen (Khat, Shamma & Zarda)

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Objective:

To describe the pattern of head and neck cancers among Yemeni patients attending the Oncology Department of Al-Gamhouria Teaching Hospital, Aden.

Patients and methods:

This study was conducted retrospectively for patients attending the Oncology Department of Al-Gamhouria Teaching Hospital, Aden, for the period from Jan. 2001 to Dec. 2004. It included 183 patients with head and neck cancers, diagnosed by complete histopathological and radiological investigations. Excluding of thyroid cancers and lymphomas.

Statistical significance was evaluated using chi-squared test. P values of <5% were considered to be statistically significant. The student's t test was used to compare the mean ages of different age groups of patients. All analysis were conducted with Epi info version 3.3

Results:

A total of 183 cases of head and neck cancers were histologically confirmed in the department of oncology. 134 cases were males (73.2%) and 49 were female (26.8%) {Z=2.61 , p= 0.004 } with male to female ratio of 2.7:1

The majority of head and neck cancers reported in the age group of 50-59 years (27.9%) followed by the age group 60-69 years (20.8%) and less common among the age group of 0-9 years and 10-19 years (1.1% and 3.3%) respectively .

The most common site was oral cavity, accounting for (31.7%) followed by the pharyngeal cancers (22.9%) and laryngeal cancers (19.1%). Oral cavity, pharyngeal and laryngeal cancers were more common among males.

The mean age of cancer patients was 46.4 +/- 16.9 years. Carcinomas constituted 97.7% of head and neck cancers, and 3.3% were sarcomas. Squamous cell carcinoma comprised 70.5% of all head and neck cancers.

Discussion

Head and neck malignancies are common in several regions of the world where tobacco

Age group (years)	Male	%	Female	%	Total	%
<10	1	0.5	1	0.5	2	1.1
10-19	5	2.7	1	0.5	6	3.3
20-29	4	2.2	3	1.6	7	3.8
30-39	17	9.3	11	6.0	28	15.3
40-49	22	12.0	10	5.5	32	17.5
50-59	40	21.9	11	6.0	51	27.9
60-69	32	17.5	6	3.3	38	20.8
70-79	9	4.9	3	1.6	12	6.6
>80	4	2.2	3	1.6	7	3.8
Total	134	73.2	49	26.8	183	100.0

Table 1 : Distribution of head and neck cancers by age and sex

Site	Mean age +/-	Male	Female	Total	%
Oral cavity	54 ± 13.8	35	23	58	31.7
Pharyngeal	45.6 ± 16.8	32	10	42	22.9
Laryngeal	45 ± 9.4	34	1	35	19.1
Nasal/Paranasal	56.1 ± 14.8	13	6	19	10.4
Neck	45.0 ± 17.3	10	2	12	6.6
Salivary	49.5 ± 14.1	5	6	11	6.0
Skull/Scalp	36.8 ± 15.9	5	1	6	3.3
Total	46.4 ± 16.9	134	49	183	100

P Value 0.004

Table 2 : Site distribution of head and neck cancers by sex, and mean age

use and alcohol consumption is high. The age standardized incidence rate in males exceeds 30/100,000 in region of France, Hong Kong, and the Indian subcontinent, Central and Eastern Europe, Spain, Italy, Brazil and among the US black community.

Type of cancer	Male	Female	Total	%
Mucosal and skin cancer				
Squamous cell carcinoma	94	35	129	70.5
Adenocarcinoma	10	2	12	6/6
Anaplastic carcinoma	13	4	17	9.3
Basal cell carcinoma	6	2	8	4.4
Salivary gland				
Epidermoid	3	3	6	3.3
Adenoid cystic	1	1	2	1.1
Adenocarcinoma	1	1	2	1.1
Malignant mixed	0	1	1	0.5
Other malignancy: Sarcoma	5	1	6	3.3
Total	134	49	183	100

Table 3 : Histopathological types of head and neck cancers

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. In Yemen, it is most common and accounts for fourth of all cancers ⁽⁶⁾.

Head and neck cancers in Yemen are more common in adults than children, especially those age 40-60 years. This is because of long periods of exposure to carcinogens of chewing khat and shamma which leads to progressive accumulation of genetic changes. In our study 70.7% of total head and neck cancers occurred in patients above 40 years of age ^(7,8). Similar results were reported by previous studies ^(9,10).

A Head and neck cancer without thyroid and lymphomas represents about 10% of all cancers registered in Yemen ⁽⁴⁾. It is higher than that of the USA (5%) and Kuwait (7.4%), but below the 40% observed in some Asian countries ⁽¹¹⁾. The cause of head and neck cancers is not entirely clear, but some extent reflects social class and habits, as squamous cell carcinoma of the upper aero-digestive tract is a smoking-related disease. Cigarette smokers have 14-fold increased risk of developing laryngeal cancer ⁽¹²⁾.

In this study, we found that oral cavity was the most common site observed in 58 patients (31.7%), followed by pharynx in 42 patients (22/9%) and larynx in 35 patients (19.1%). The findings by site are similar to USA results and different from other countries ⁽¹³⁾. The oral cavity, nasopharynx and larynx are the primary

cancer site in Yemen. The nasopharynx has been reported as the primary site for head and neck cancers in the mediterranean and other Arab countries ⁽¹³⁾. More than 70% of these patients had squamous cell carcinoma, and the maximum prevalence was seen in the fifth and sixth decade. Similar high incidence of SCC was reported from southern Saudi Arabia ⁽¹⁴⁾.

This data reflects our specific patient population reporting to the hospital and not the community as a whole. Most of these patients had similar smoking or Khat chewing habits.

Soufi et al observed oral cancers in the Asir region of Saudi Arabia occurs mostly among patients who have been chewing Khat ⁽¹⁵⁾ for long period of time. Chewing Khat, shamma and zarda (snuff chewing) is considered among the risk factors in cancer of the mouth in Yemeni patients. Frequent localized traumas due to Khat, shamma and zarda may provide an entry for chemical or viral carcinogens to enter the tissue ⁽¹⁶⁾.

Recommendations

1. Further studies are required in Yemen to determine risk factors for these cancers especially oral cavity, nasopharyngeal and their relation with use of khat, shamma and zarda.
2. Considering oral hygiene screening necessary and regular free of cost for all consumers of Khat, shamma and zarda, with support of WHO and Yemeni Ministry of Public Health & Population

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