The frequency of tumors of the head and neck in a 10-year period in Ilam, Iran

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Abstract

Introduction: Cancer is one of the five leading causes of death around the world, and head and neck cancer is one of the most common incidences, leading to the death of thousands of people each year. Given the epidemiological importance of head and neck cancers, this study aimed to examine the prevalence of head and neck cancers over a 10-year period in Ilam.
Materials and methods: This descriptive study was done using the files of 1106 patients with head and neck lesions who were referred to Imam Khomeini hospital in Ilam in a 10-year period between 2004 and 2015. All the data in the files, including age, sex, type and location of the lesion, was recorded, evaluated, and analyzed using independent t-tests and chi-square statistical methods with SPSS 19.
Results: The annual incidence of head and neck cancers in Ilam was estimated at 1.5 per 100,000 people. Basal cell carcinoma was the most common cancer of the head and neck (18.50%). The most common site of squamous cell carcinoma occurrence was the tongue at 54%. Regarding sex, 55.5% of patients were male and 44.5% were female. Regarding malignancy, 289 lesions (26.13%) were reported as malignant and 817 lesions (73.86%) were reported as benign.
Conclusion: Considering the high incidence of basal cell carcinoma and squamous cell carcinoma the importance of early diagnosis of these cancers and their treatment requires appropriate planning to improve survival of these patients and to reduce the disease's complications.

Keywords: Cancer, Basal cell carcinoma, Squamous cell carcinoma

Introduction

Two to 5% of cancers belong to head and neck cancers; almost 52,000 patients suffer from head and neck cancer, leading to the death of about 11,000 every year (1). Unfortunately, head and neck cancer has increased over the past 20 years, and in Iran over 30,000 people die due to cancer annually (2). Head and neck tumors can be benign or malignant. Benign tumors include inflammatory and congenital tumors, while malignant tumors include cancers such as lymphoma and other salivary gland tumors (3). Signs of head and neck cancer include lumps on the

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neck, changes in voice, difficulty in swallowing, ulcerative lesions on lips and ears that do not heal, and masses inside the mouth (4). Head and neck cancers include areas of the pharynx and larynx, oral cavity, paranasal sinuses and neck squamous cells. The most common carcinoma in the neck area is squamous cell carcinoma (SCC) (5). The prevalence of oral cancers differ by age, sex, race, and geographic location (6). Oral cancers occur in men at a rate of about 4% and in women at a rate of about 2% of all cancers; in other words, the incidence of oral cancer is twice as common in men as in women (7). Research has shown that smoking is a major cause of oral cancer, and of course alcoholic drinks, constant exposure to sunlight, jobs associated with phenolic factors, genetic factors, and types of human papilloma virus (HPV) and viruses such as EBV are also causative factors (8).The prevalence of oral cancer in the United States of America is 11.3 cases per 100,000 people, and, in India, about 50% of cancers are oral cancers. Statistical research in United States shows that about 55,000 cases of head and neck cancer are diagnosed annually, of which about 13,000 are fatal (9).Epidemiological studies of cancer examine the sex, age, social and economic differences in cancer patients in various geographic regions of the country and various countries. Such descriptive studies are applicable and useful in exploring the causes of various cancers (10).Considering that no research has been done in Ilam on the incidence of head and neck cancers and their age and sex distribution, this study aimed to examine the incidence of the head and neck cancers in a 10-year period in Ilam.

Materials and methods

This is a descriptive – analytical study. To determine the frequency of head and neck tumors, all records of patients admitted to hospitals in Ilam during 2004 to 2015, were examined, and then records of patients with head and neck tumors were identified. Sampling method was census in this study. All the required data in the files, including age, sex, type and location of the lesion, was recorded, evaluated, and analyzed using independent t-tests and chi-square statistical methods with SPSS 19. To estimate the relative frequency of head and neck tumors, 95% confidence interval was used and the information is described with the table of frequencies.

Results

This study was done over a 10-year period (2004-2015) in Ilam. The total number of patients referred to the pathology department in Imam Khomeini hospital of Ilam was 24,559. Of these, 1,106 had head and neck lesions. 57% of the lesions were oral and 43% were head and neck lesions. Of these, 614 (55.5%) were male with a mean age of 49.9 ±19.4, and 492 (44.5%) were female, with a mean age of 48.2 ± 20.1 (Table 1). Of 1,106 diagnosed lesions in the head and neck, 289 (26.1%) were malignant lesions and 817(73.9%) were benign lesions. The youngest patient in our study was a one-year old infant with hemangioma and the oldest one was 90 years old with basal cell carcinoma (Table 1). Two groups of men and women were compared in terms of age using an independent t -test and the difference was not found to be significant ($p = 0.15$). This means that men and women were in the same age range. The highest frequency (34%) was related to the age group comprising 41 to 60 years. It was also found that 25% of patients were under 62 years, and 50% were between 60 and 77 years of age. Using chi-square, the relationship between the frequency of head and neck tumors with sex and age was compared and found to be statistically significant ($p <0.001$). In addition, the prevalence of 35 types of head and neck tumor was recorded in this study, and the highest frequency was related to basal cell carcinoma (18.5%). The highest head and neck cancer is basal cell carcinoma both in women (18.4%), and in men (18.6%). The

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highest incidence of lesions of the oral cavity (squamous cell carcinoma) was reported at 6.7%, of which 54% were created in the tongue.

Table 1. Demographics of patients with types of head and neck tumors based on the age and gender.

Age (year)	Population	Prevalence	Sex	
			Male	Female
Under 20	60000	17.1%	46 (7/5%)	57 (11.6%)
21 - 40	80000	36.7%	164 (26/7%)	130 (26.4%)
41- 60	40000	26%	213 (34/7%)	163 (33.1%)
61- 80	20000	1.4%	163 (26/5%)	134 (27.2%)
Up 81	10000	36%	28 (4/6%)	8 (1.6%)

Discussion

Based on the findings of this study, the annual incidence of head and neck cancers was estimated at 1.5 per 100,000 people. The annual incidence of cancer in men and women is 98 and 110 per 100,000 people, respectively (9).The findings of this study showed that the incidence of tumors of the head and neck in men was higher than in women, which was consistent with the results seen by Delavarian, Shiva, and Qbanchy (11, 12, 13).In this study, the most common age of head and neck tumors was related to the 41 to 60 age group, showing that the risk of tumors increases with aging, similar to cited references, and textbooks, and studies results (8, 14).The results of this study showed that the most common site of tumors in the head and neck was head and face skin, and the highest number of malignant tumors (18.5%) was found to be basal cell carcinoma, contradicting the results seen by Qbanchy, Burket, and Silverman expressing squamous cell carcinoma the most common malignant tumor of head and neck (13, 14, 15).According to the findings of this study, basal cell carcinoma is the most common malignancy in the head and neck, which is consistent with Neville's opinion that basal cell carcinoma is the most common cancer among all cancers (8).It was reported that the highest affected area for basal cell carcinoma was the nose (43.9%), similar to Nevliie and Burket's findings, where 80% of these lesions occurred in the head and neck. The most common complaint of patients with basal cell carcinoma was the creation of a firm nodule on the face that was similar to the results of Lyubomir's studies (16).

Other finding in this study requiring particular attention is a number of salivary gland tumors and lymphoma. While salivary gland tumors and lymphoma are expressed as cancers with high prevalence in head and neck in dental references, which may be the result of a lack of specialized centers for oral lesions and referral of patients to other health centers in surrounding towns and lack of timely referrals of patients with oral lesions (12).In terms of the incidence of oral lesions, squamous cell carcinoma (6.7% of oral cancers was noted, which is consistent with the findings of Andishehtadbir, Qpanchy, Lei, and Castell (13, 17, 18, 19).Squamous cell carcinoma occurs more frequently in men than in women, which is inconsistent with the results of Shiva's study where the prevalence of squamous cell carcinoma was reported as higher in women (12)and is similar to studies by Picard, Dantas and Murphy that reported the incidence of squamous cell carcinoma to be higher in men than in women (20, 21, 22).In the present study, the tongue (54%) was the most common site, similar to results reported by Lei, Dantas and Delavaran (11, 18, 21)and contradicts Fahmi and Alrawi, who found lips the most common site of injury (23, 24).The most common benign lesions in the head and neck in men are pilar cysts, with13%

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prevalence, which is similar to Neville's finding that cystic lesions occur more frequently in men than in women, 15% of the cysts occur on the scalp (8).This study's findings have shown that nevus was reported as the most common benign tumor in women (10.4%). These results are consistent with the references and textbooks stating that nevus is the most common tumor in humans and mostly affects women and the skin of the head and neck (8, 14).

Study limitations

This is the first study about cancer incidence and distribution of age and sex in Ilam; however, it seems that some of the patients refer to medical centers in surrounding provinces, therefore, the estimation of the cancer incidence will be less than the actual one. Given that the treatment plans and records of referred patients was incomplete, we couldn't discuss the survival of patients in this study. Therefore, it is suggested that cancer registry system of patient records be launched prospectively.

Conclusion

The findings of this study showed that a large number of patients admitted to Imam Hospital in Ilamwere diagnosed with basal cell carcinoma (the most common skin cancer) or squamous cell carcinoma (the most common oral malignancy). Considering the complications caused by the treatment of these lesions, helping people become familiar with symptoms of malignancies and promoting timely referral to health centers while doing proper planning to reduce complications caused by the disease are required. Holding continuing education training courses for doctors and dentists for their awareness and familiarity with the ways of early cancer diagnosis of the head and neck is recommended.

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Conflict of interest disclosure

The authors state that they have no conflict of interest.

Author contribution

All authors contributed to the idea, design and conduct the study and drafting the manuscript. All authors approved the final version to be submitted.

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