

## RESEARCH ARTICLE

# Specific Characteristics of Head and Neck Squamous Cell Carcinoma in Mures Area

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Although head and neck cancers have a rising incidence, these diseases are less investigated because of their localisations' heterogeneity. The major risk factors susceptible to influence the evolution of the disease are smoking, alcohol consumption and infection with human papilloma virus. Using data from Mures County Emergency Hospital's histopathology register, we made a retrospective study of 190 cases from the last two years. Factors of interest included age, sex, localization, histopathological subtype and differentiation grade. Median age at diagnosis was 61.31 years, the disease presenting highest incidence in the 51-60 age subgroup and a clear male predominance (5.75:1). The most frequent localization is lower lip (28%) and the dominant histopathological subtype is cheratinised squamous cell carcinoma (83,8%) and G2 differentiation grade (48,1%). This study supports the finding of increased incidence of cheratinised squamous cell carcinoma in this region. However the literature emphasizes rising incidence of head and neck cancer in younger, we observed that increase in Mures area occurred in 51-60 age group. Lower lip most frequent localization makes possible an early diagnosis.

**Keywords:** head-neck cancer, squamous cell carcinoma, Mures

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## Introduction

Head and neck cancer (HNC) is considered worldwide a health care problem. Its incidence registered a 265% rise in the last 30 years [1,2]. In Europe approximately 140,000 new cases of squamous cell carcinoma of the head and neck occur yearly, being associated with mortality rates of 18 and 3 per 100,000 males and females, respectively [3]. More than 90% have squamous histological subtype and originate from oral cavity or lips [4]. Traditionally this cancer localisation was associated with smoking and alcohol use, but recently Human Papilloma Virus (HPV) has been implicated as a novel risk factor for oropharyngeal carcinoma and appears to be a distinct entity with different biology and clinical outcomes [5,6].

This anatomically inhomogenous, rarely studied cancer is often diagnosed at an advanced stage, where treatment options may not be curative or can have severe posttreatment adverse events [7].

## Methods

We conducted a retrospective analysis of 290 head and neck tumors in Mures County Emergency Hospital's Histopathology Register, including cases from recorded in the last two years. Histopathological diagnosis and tumor grade were established accordingly to World Health Organisation Classification of Tumors (IARC 2005) and modified Broders' grading system; 100 patients were ex-

cluded as having benign proliferation. Baseline data of 190 patients with malignant tumors collected at diagnosis included age, sex, localization, histopathological subtype and differentiation grade.

We used descriptive statistics to characterize the group and evaluated differences in patients characteristics with two-tailed  $X^2$  tests. A level of significance (p) of 0.05 was defined as significant.

## Results

### Patient characteristics

The median age was 61.31 years (range 35-93) with homogenous distribution. More than half (60.3%) of patients were between 51-70 years at diagnosis (Figure 1). The male-to-female ratio was 5.75.

The most common histological type was squamous cell carcinoma (97.88%), with cheratinised subtype domination (84.24%). Other histological types, representing 0.53% of cases, included sarcoma, non Hodgkin lymphoma and undifferentiated forms. Half of cancers were moderately differentiated grade 2.

The gender distribution in favour of males was the highest in 51-60 years age group.

The most frequent localisations were lower lip 28.04%, buccal floor 25.93% and tongue 23.81% (Figure 2).

We observed that patients aged 51-60 years have mostly buccal floor malignancies and those aged 71-80 years have lower lip cancer (Figure 3.)

Grade 2 tumors were the most frequent located on lower lip and tongue cancers (Figure 4).

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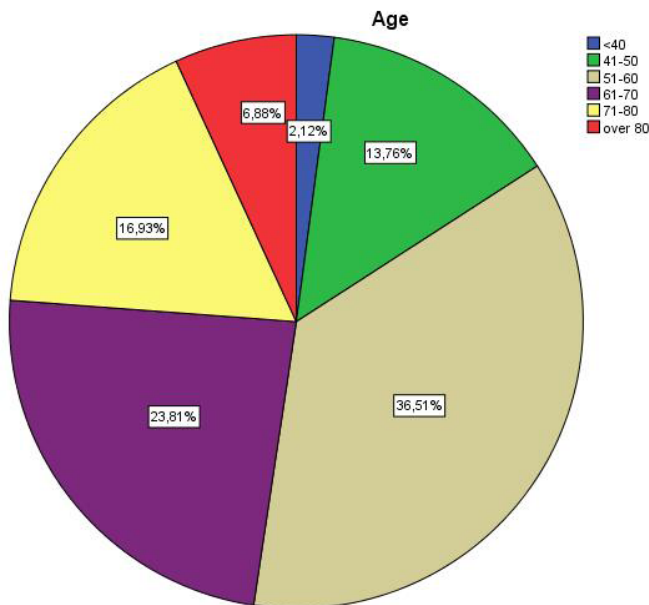


Fig. 1. Head and neck cancers, age at diagnosis

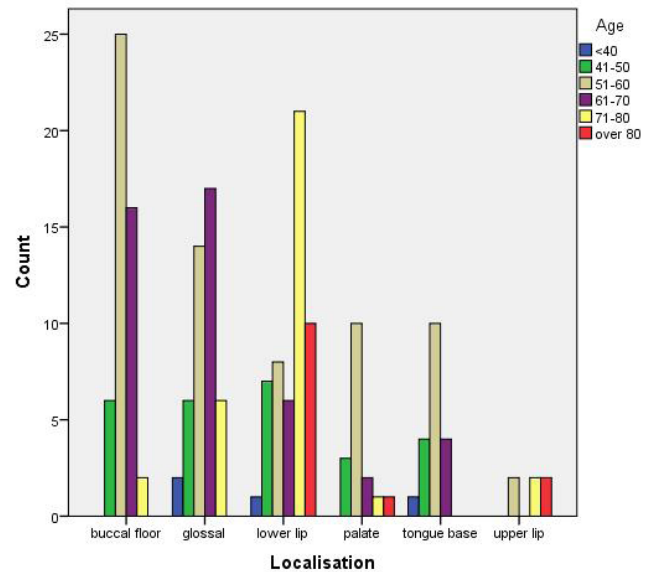


Fig. 3. Age related distribution of HNSCC

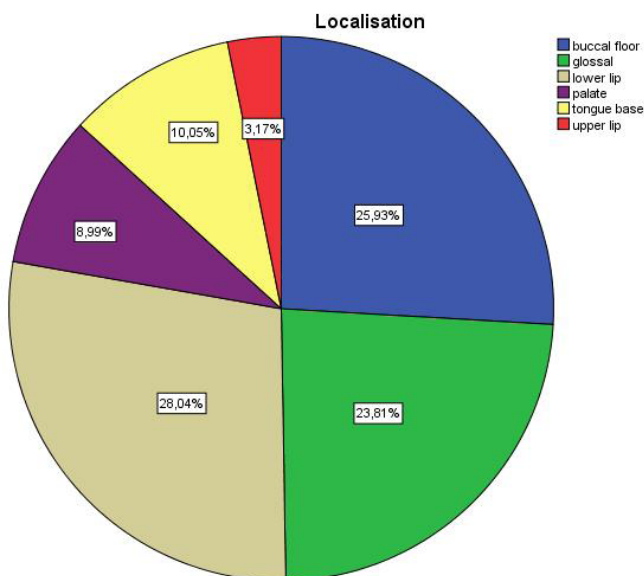


Fig. 2. Localisation pattern of HNSCC

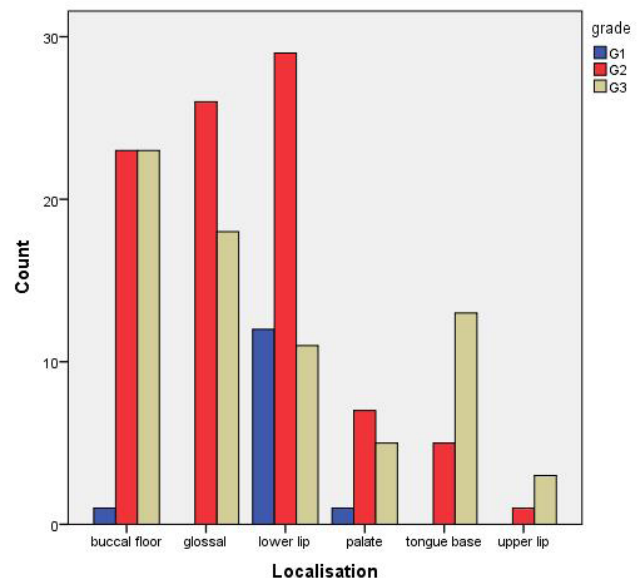


Fig. 4. Histological grade related distribution of HNSCC

**Discussion**

In the present study we demonstrated that in Mures area malignant tumors are diagnosed frequently at advanced ages. Age specific cancer incidence raise sharply from 41-50 years, peaks in the age group 51-60 and subsequently drop steadily; in our study more than half of patients (60.3%) were 51-70 year-old at diagnosis. European pattern [8] was approximately identical and the peak incidence of HNC was at 50-59 age group, similarly distributed in males and females [9]. In our area we registered a 5.75 fold higher incidence of HNC in men compared with women. In the literature it was difficult to find a homogenous description of this anatomical site, because the anatomy of the head and neck is complex and is divided into sites and subsites, tumors of each site have an unique epidemiology, anatomy, and natural history, and require different therapeutic ap-

proaches. We had no comparison data for the region incidence-trend over time.

Geographical variation in oral cancer reflects the prevalence of well established risk factors, alcohol and smoking. Men excessive smoking and alcohol consumption in deprived areas [10] is related with higher incidence of this malignancy and reduction in alcohol consumption and smoking abandon reduce HNC incidence and mortality [11,12]

Most frequent localisations were different from European pattern, were the incidence of an easily observable lip cancer is consistently reduced to 6.0%, compared to our 31.14%.

The development and clinical use of effective therapies in HNC will depend on accurate diagnosis of the disease. Classical histopathological and modern molecular tools

make possible rationale cancer treatment [13]. Therefore evaluation of cellular characteristics, novel predictive biomarkers (kras mutation) for treatment are greatly needed [14].

### Conclusion

This study emphasizes the unusually high incidence of lip cancer in Mures area. An organized education of the population, associated with a direct and complete physical examination could prevent this type of cancer. Key objectives are to raise awareness in the general population and among health care professionals.

There is an urgent need to create and use an organized oncology register, which could permit a real-time patient follow up of these patients.

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