

The importance of early detection of risk groups for reducing the incidence of oral floor and tongue cancer - clinical, epidemiological and etiopathogenical study on 5 years undertaken at the cranio-maxillo-facial surgery clinic Timisoara

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Summary

The incidence of oral and oro-pharyngeal cancer increased significantly during the last decade. Unfortunately, despite the enormous efforts made by specialists from all over the world, the prognosis, in advanced stages, is still poor. We find it necessary to thoroughly evaluate the risk factors in order to prevent the occurrence of cancer.

Therefore we accomplished the present study, in which 220 patients with oral cancer were evaluated, trying to emphasize the necessity of prevention, the better way to fight cancer.

Key words: oral and oro-pharyngeal cancer, high vital risk, carcinogenesis, tobacco and alcohol, poor prognosis.

Introduction

The oral floor and tongue cancer has an important place in the practice of maxillo-facial surgery, by its frequency, which is not neglectable, as well as by its complications, which sometimes imply a vital risk, imposing a diagnosis and a complex therapeutic attitude, of major promptness.

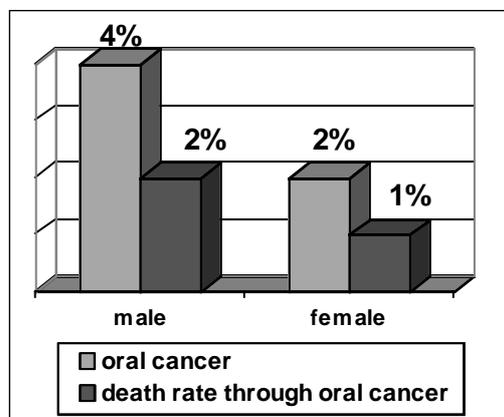
This fact indeed determined us to achieve the present study.

At the end of the year 2000, the European Committee for Fighting cancer, placed cancer on the second rank in a classification of the main death causes in the whole world, the first place being taken by the cardio-vascular diseases, followed by accidents, diseases of the respiratory apparatus and of the digestive apparatus. The cancer of superior air-digestive ways and of the bronchia-lung ways is responsible for a quarter of male deaths after the age of 55.

Material and Method

Oral cancer is one of the most frequent kinds and is included in ten of the most common death

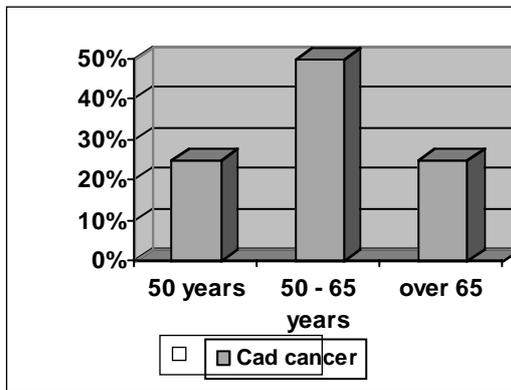
causes in the whole world. Out of the more than one million cases of cancer diagnosed yearly in the USA, the cancers of the oral cavity and of the oro-pharynx represent approximately 3%. If oral cancer is combined with naso-pharyngeal, pharyngeal, larynx and salivary glands cancers, than this location represents more than 5% of all body cancers. Death through oral cavity and oro-pharyngeal cancer has tripled over the last 30 years. In Europe, the highest death rate through oral and oro-pharyngeal cancer is in France.



In men, oral cancer represents 45% of the total body cancer, and in women 2%. Oral cancer represents 2% of the deceases caused by cancer in men and 1% in women. Statistics as well concern North America, but they vary at the level of other regions. In French men (male patients), the incidence of oral cancer is 18 cases out of 100,000 subjects. High rates are signaled in India and in other Asian countries. In these countries higher rates are recorded in women with the highest incidence in Singapore (5.8 cases at 100,000 subjects). The African population in the USA presents a higher risk of developing an oro-pharyngeal cancer than the white population. This risk seems to be due to environmental factors, as an eventual effect of genetic factors has not been well determined yet.

Morbidity depends on several factors:

- **Age** - a study made by specialists of the International Society of Fight Against Cancer established a relationship between age and the appearance rate of oral and oro-pharyngeal cancer :
 - 25% of CADS appear before the age of 50;
 - 50% appear between the age of 50 and 65;
 - 25% appear after the age of 65.



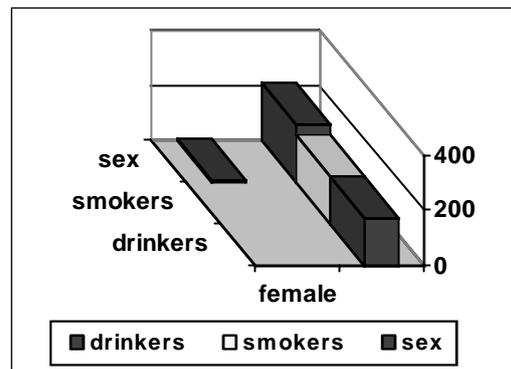
- **Sex** - men are 4-5 times more affected than women (25 years ago the ratio men:women was 10:1). The increase of alcohol and tobacco consumption in the female environment somehow explains the decrease of the ratio (in some countries, such as England, there is a tendency of equalizing of the ratio);
- The **localization** of malign tumor lesions - at the level of the oral cavity, the most frequent

interested areas are the lower lip, the mobile part of the tongue and the oral palate, while at the oro-pharyngeal level these are the velo-tonsilar and glosso-epiglottic;

- The existence of *multiple locations*, synchronous or not;
- **Geographical repartition** - the incidence of CADS cancer can vary in a ratio from 1/10 to 1/100 depending on geographical regions and ethnicity. The highest rates are in France and India, and the lowest rates are in the rest of the European countries, and among the white population in America.

In a study performed within the CMF Surgery Clinic Timisoara in the period 1996-2000, from the total of registered cancers, we found a number of 220 cases of cancer located at the tongue and oral floor level. Out of these cases, only 6 were signaled in female patients. The top of incidence, considering the age, was between the age of 45 and 60. Approximately 80% of the subjects were smokers, more than 2/3 of those smoking at least 15 cigarettes daily, and 78% were chronic alcohol consumers (in most cases distilled alcohol).

Carcinogenesis is considered to represent a series of events, which initiate changes that induce cancer development.



- The record of etiological factors rely on:
- studies of risk groups;
 - differences in the incidence of the disease;
 - laboratory studies of the malign tissues;
 - studies on animals.

The high incidence of oral cancer is obviously age-related, which can reflect the immunity decline of the organism, reported to the age

and the length of exposition to initiatory and inductive factors. These include:

- exposition to chemical irritators;
- exposition to physical irritators;
- viral infections;
- hormonal disorders;
- cellular aging;
- decrease of defending capacity.

Among the best known factors implied in the oral cancer etiology, and also identified in the study of our clinic, there are:

- tobacco (under all conditions);
- alcohol;
- mechanical irritations at the level of the oral cavity;
- severe iron deficiency - sideropenic dysphagia, or the Plummer-Vinson syndrome, which is accompanied by the emergence of progressive atrophy of the mucosa which favours the later occurrence of oral and pharyngeal cancer. This kind of affection is commonly noticed in women of Northern Scandinavia as well as England.

- viral agents - human papillomavirus (HPV), the Epstein-Barr virus (EBV), the herpes simplex virus (HSV);
- industrial polluting agents;
- deficiency of A, B and C vitamin;
- some antitumor treatments;
- immunity factors;
- tumor suppressing genes;
- genetic and familial factors;
- occupational exposition to asbestos, nickel, chromate compounds, cement, tropical wood powder, etc.

Tobacco and alcohol are looked upon as risk factors in oral and oro-pharyngeal cancer. Tobacco includes substances with carcinogenic potential, such as:

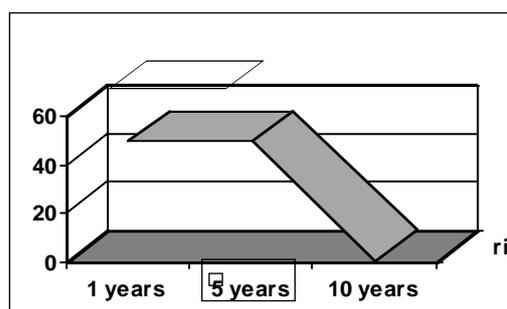
- nitroamine (nicotine);
- polycyclic aromatic hydrocarbides;
- nitrozoproline;
- nitrozodietanolamine;
- polonium.

Epidemiological studies have shown that of all oral cancer patients, more than half are smokers. A study made in the USA has proved that 80% of cancer patients were smokers. Besides the risk of primary cancer appearance in smok-

ers, the risk of other primary cancer occurrence was linked to continuing smoking after treatment. In our study, 62% of the patients continued smoking after treatment, and 58% continued consuming strong alcohol.

In this study, of the patients who have been surveyed for one year, 18% developed a second primary oral cancer, the ones who continued smoking, having a grown risk of 30%.

The effect of smoking on the risk of the appearance of cancer decreases after 5-10 years from quitting.



All forms of alcohol, including strong liqueurs, wine and beer, were implied in the etiology of oral cancer. In some studies, beer and wine could be associated with a higher risk than strong alcohol.

The combined effects of alcohol and tobacco result in synergic action for the development of oral cancer. The action mechanism is not yet well known, but it can also include the dehydrating effects of the mucosa by alcohol, increasing the permeability of the mucosa and favourising the action of cancerigenic factors from alcohol or tobacco.

In our study, most patients were consumers of hard liqueur.

Conclusions

According to this study a series of conclusions can be drawn:

- getting acquainted with the factors involved in the etiology of oral cancer helps both identifying the groups of risk, as well as reaching a better understanding of genetic mechanisms of cancer;
- once the groups of risk are known, the people included can be submitted to peri-

odical controls, thus making possible early detection of any malign lesion or any lesion with malignisation potential;
- reducing tobacco and alcohol consumption, and especially their combination, would lead to a significant decrease of the incidence of oral cancer (a principle of carcinology maintains that "it is easier to prevent than to cure");

- a younger age when oral cancer can appear was found, some forms of cancer being more aggressive as the patient is younger;
- the incidence of oral cancer in female patients is rising as well;
- the incidence of relapses, or of a second primary tumor is higher in those who continue smoking and consuming alcohol after therapy.

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