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Original Research Article

Epidemiological profile of oral cancers in Benin

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ABSTRACT

Background: The objective of the study was to study the epidemiological profile of malignant tumours of the oral cavity in Benin from January 2009 to 31 December 2014.
Methods: This was a descriptive cross-sectional study that examined cancers of the oral cavity collected in the registers of the 5 anatomy and pathology laboratories in Benin as well as the only hospital in the country that sends its requests for histological examinations abroad.
Results: With a rate of 19.8%, oral cavity cancer was the most frequent cancer localization in the ENT, head and neck sphere in Benin. The most frequent sites of cancers in the oral cavity were the palate (32.2%) followed by the tongue (25.4%) and the inner face of the cheeks (16.9%). The average age of the patients was 53.18±20.60 years with extremes of 1 year and 90 years. The sex ratio was 0.90. Squamous cell carcinoma was the most common histological type with 67.80%.
Conclusions: Cancer of the oral cavity must be a priority for health authorities in Benin. Research must be initiated to determine the factors that contribute to it.

Keywords: Oral cancer, Tongue cancer, Head and neck cancer

INTRODUCTION

Oral cancer is a serious and growing problem in many parts of the world.[1-3] The highest rates are observed in developing countries in South and South-East Asia where, in addition to the major risk factors of smoking and alcoholism, chewing beetle, areca and tobacco is strongly implicated in their occurrence, as well as the low socio-economic level.[1,4-6]

In America and Europe, there are clear regional differences in oral cancer incidence; rates are high, especially in North America, Hungary, Slovakia, Germany and France, and are associated with alcohol consumption, smoking, and human papillomavirus infection.[3,7,8]

In Sub-Saharan Africa, cancer registries are generally poorly maintained with incomplete, unreliable and obsolete data.[9,10,11] Oral and pharyngeal cancers accounted for 3.6% of all cancers recorded in 2012 in sub-Saharan Africa.[11] The highest rates of oral cavity cancers have been reported in the African islands of the Indian Ocean and countries of Southern and Eastern Africa, while those of West Africa are generally much lower.[10]

A national study conducted from 2009 to 2014 on the histoepidemiological profile of ENT, head and neck tumors in Benin (West African countries) reported without detail that oral cavity cancers were among the most common head and neck cancers. This present work

was carried out in order to clarify the epidemiological profile of oral cavity tumours in Benin.

The definition of oral cavity cancer varies according to the different studies published, depending on the anatomical sites taken into account.[12-14] In this study, we used as the definition of oral cavity cancer neoplasia of the lips, tongue (excluding lingual tonsil), oral floor, palate and other unspecified parts of the mouth.[12,15]

METHODS

This was a descriptive cross-sectional study that examined histologically confirmed malignant tumours of the oral cavity from January 1, 2009 to December 31, 2014 in Benin, West African country.

These tumours were collected in the registers of the 5 public and private anatomy and pathological cytology laboratories in Benin at the time of the study as well as in the register of pathological anatomy results of the only hospital in the country that sends its requests for histological examination abroad (in Italy for partnership reasons).

All reports of anatomopathological examinations of tissue masses in the oral cavity, whose histological diagnosis was a malignant tumour, were used for the study.

The variables studied were the age and sex of the patient, the location of the tumour and its histological type.

The data were collected from the registers and archives of the 6 institutions included in this study.

Data entry was made in EPIDATA 3.1 French version. The data analysis was carried out using the EPIINFO 3.5.1 software.

RESULTS

Frequency

During the study period, 298 malignant head and neck tumours were identified, 59 of which concerned the oral cavity (19.8%). Table 1 shows the main locations of ENT, head and neck malignancies.

Table 1: Main locations of ENT, head and neck malignant tumours in Benin from 2009 to 2014.

Tumour site	Count	Percentage (%)
Oral cavity	59	19.8
Nose, sinuses and jaws	54	18.1
Oropharynx	41	13.9
Thyroid	38	12.8
Nasopharynx	35	11.7
Salivary glands	26	8.7
Larynx	25	8.4

Location of tumours in the oral cavity

The most frequent malignant tumours in the oral cavity were those of the palate (32.2%) followed by those of the tongue (25.4%). Table 2 shows the distribution of patients by tumour site in the oral cavity.

Table 2: Distribution of patients by tumour site in the oral cavity in Benin from 2009 to 2014.

Tumour site	Count	Percentage (%)
Palate	19	32.2
Tongue	15	25.4
Inside of cheeks	10	16.9
Lips	7	11.9
Gingiva	4	6.8
Retro-molar trigon	3	5.1
Oral floor	1	1.7
Total	59	100,0

Gender and age

Malignant tumours occurred in 31 female subjects (52.5%) and 28 male subjects, i.e. a sex ratio of 0.90.

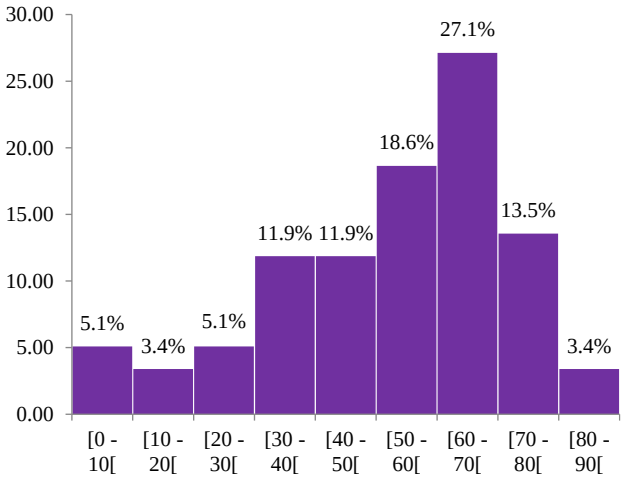

Figure 1: Age distribution (in years) of patients with malignant tumours of the oral cavity in Benin from 2009 to 2014.

The average age of the patients was 53.18±20.60 years with extremes of 1 year and 90 years. Figure 1 shows the age distribution of patients with malignant tumours of the oral cavity.

The histological type

Squamous cell carcinoma was the most common histological type with 67.80%. Table 3 summarizes the distribution of malignant tumours of the oral cavity by histological type and location.

Table 3: Distribution of malignant tumours of the oral cavity by histological type and location in Benin from 2009 to 2014.

Types of tumours	Palate	Tongue	IC[1]	Lips	Gingiva	RMT[2]	Oral floor	Total N (%)
Squamous cell carcinoma	13	13	4	5	4	2	1	42 (71.2)
Malignant fibrous histiocytoma	2	1	0	1	0	0	0	4 (06.7)
Adénocarcinoma	1	1	1	0	0	0	0	3 (05.1)
NHL[3]	1	0	1	0	0	1	0	3 (05.1)
Burkitt's lymphoma	0	0	2	0	0	0	0	2 (03.4)
Adenoid cystic carcinoma	1	0	0	1	0	0	0	2 (03.4)
Angiosarcoma	1	0	0	0	0	0	0	1 (01.7)
Liposarcoma	0	0	1	0	0	0	0	1 (01.7)
Malignant melanoma	0	0	1	0	0	0	0	1 (01.7)
Total	19	15	10	7	4	3	1	59 (100.0)

IC[1]: Inside of cheeks, RMT[2]: Retro-molar trigon, NHL[3]: non-Hodgkin's lymphoma.

DISCUSSION

There has been a wide variation in oral cancer incidence reported across regions and the risk factors themselves vary by area and lifestyle.[9] It is to be noted that the reported incidences depend on the quality of cancer registries, which in Africa is often deplorable.[11,16] These incidences are therefore often far below reality, which is the case for all cancers in Africa.[3,10] The incidence rate of standard oral cavity cancer in Africa is 2.6 per 100,000 population, ranging from 1.5 in West Africa to 4.0 in Southern Africa.[17] Cancer of the oral cavity was the most frequent cancerous localization in the head and neck sphere in Benin (19.8% of head and neck cancers). In several African countries it is also one of the most frequent ENT locations for malignant tumours.[10,18] It was particularly common in Nairobi, Kenya, with a rate of 40.6% of head and neck cancers in 2011, followed by nasopharyngeal and laryngeal cancers (20.8% and 13.8% respectively).[19] It was the most frequent localization among cancers of the upper aerodigestive tracts in Togo, a country bordering Benin.[20] However, in West Africa it is reported to be uncommon; we have found virtually no studies on oral cancer outside Nigeria.[10,17,21]

In several countries, an increasing trend in the incidence of oral cavity and oropharyngeal cancers has been reported, even in some where tobacco and alcohol control is successfully being carried out, suggesting the influence of new risk factors.[22] In support of these new risk factors, there is also an increasing trend of oral and oropharyngeal cancers in young patients (under 45 years of age) worldwide.[22-24] In South Africa, for example, the prevalence of oral cancer among young people (<45 years of age) is higher than the global average and is not always associated with traditional risk factors.[9] In Benin, one third of the patients (37.3%) were under 50 years of age. All these data should make oral cavity and oropharyngeal cancers a shared concern. Indeed, no country is spared since the responsibility for one of these new risk factors, infection by the ubiquitous human papillomavirus, is now well established.[25-28]

As far as gender is concerned, the predominance is traditionally male with an overall sex ratio of 2.1 ranging from 5.2 for Central and Eastern Europe to 1.4 for North Africa, Western Asia and Oceania.[8] In Nairobi, Kenya, where the rate of oral cancer is one of the highest in sub-Saharan Africa, Parkin et al reported that the cumulative incidence of oral cancer is higher among women than among men.[11] The same was true in Togo.[20] In Benin, too, the predominance was female (sex-ratio equal to 0.90). This observed female predominance does not argue in favour of the region's major cancer risk factors of alcoholism and tobacco use; the factors influencing this female predominance will therefore need to be further explored.

Tongue was the most common localization of oral cavity cancers among the European and American populations, accounting for between 40 and 50% of these cancers.[3] According to Muange et al in Kenya, language was the most frequent site (35%) followed by palate (22%) and the least affected site was the oral floor (10%).[29] The main locations of cancer in the oral cavity in Zimbabwe in 2005 were the mandibular gingiva (21.1%), tongue (20.5%) and oral floor (18.5%).[30] In Benin, the oral floor was poorly affected (1.7%) and cancers mainly concerned the palate (32.2%) and the tongue (25.4%).

Concerning the histological type, the prevalence of squamous cell carcinoma is clear according to the data in the literature.[31,32]

CONCLUSION

Cancer of the oral cavity has been the most common cancerous localization in the ENT, head and neck sphere in Benin. It is a cancer whose incidence is increasing worldwide but it can be prevented by acting on risk factors. The unusual female predominance and relatively

high proportion of subjects under 50 years of age suggest that risk factors other than smoking and alcoholism may be involved in Benin. It is essential that research projects address this subject in order to identify environmental risk factors.

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