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Upper aero digestive tract cancers: epidemiological and histopathological aspects in Togo

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ABSTRACT

Background: The objective of the study was to describe the epidemiological and histopathological aspects of cancer of the upper aero digestive tract (UAT) in a reference service in Togo.
Methods: It was a retrospective study about UAT cancers diagnosed in the ENT and maxillofacial surgery department of Sylvanus Olympio Teaching Hospital of Lomé in Togo from 1st January 2005 to 31 December 2014, or a period of 10 years.
Results: The UAT cancers represented 0.3% of consultations and 64.8% of head and neck cancers. The average age of patients was 51.3 years (± 16.5) with extremes of 3 months and 86 years. The sex ratio was 1.77. Chronic smoking was found in 26.4% of patients with 1.6% of women; that of chronic alcoholism among 43.8% of which 7.7% of women and the simultaneous alcoolotabagisme in 20.9% of patients. The UAT cancers were dominated by cancers of the oral cavity (36.2%) with particularly a female predominance (53.2%), followed by the oropharynx (18.5%) and the larynx (18.1%). The squamous cell carcinoma was predominant in UAT cancers (83.5%) followed by non-Hodgkin lymphoma (8.9%) and adenocarcinoma (2.7%).
Conclusions: UAT cancers are the largest contingent of head and neck cancers in Togo. They occur most often in men from the fifties but there are a high proportion of women. Histology is dominated by squamous cell carcinoma.

Keywords: Epidemiology, Cancer, Upper aero digestive tract, Togo

INTRODUCTION

Ear nose throat (ENT) cancers are essentially those of upper aerodigestive tracts (UAT) developed at the expense of oral cavity, pharynx, larynx and sinonasal cavities. UAT cancers present unity characters which are common to them and give them a particularly place in carcinology domain: region's anatomy, physiology, histopathology, epidemiological and etiological conditions and natural history of those cancers.[1] They constitute a perfect example of the importance of epidemiological studies but also of their limits. The majority of those cancers were largely associated to an intense alcoholism and smoking which etiological influence in those cancers genesis can be precisely evaluated.[2]

In most sub-Saharan countries and particularly in Togo, the frequency of cancers is difficult to situate precisely in absence of national morbidity registers, what limited the epidemiological surveillance. This study's objective is to contribute to lay the epidemiological and histo-pathological foundation of UAT cancers in Togo.

METHODS

It was a retrospective study about UAT cancers diagnosed in ENT and maxillofacial surgery department of Sylvanus Olympio Teaching Hospital from 1st January 2005 to 31st December 2014, thus a period of 10 years. The data were collected from the patients' folds and the register of the histopathological results of surgery pieces and biopsies analysed in pathological anatomy department of that Teaching Hospital in majority and in some cases in private laboratories in Lomé and France. The histological examination techniques used in Sylvanus Olympio Teaching Hospital were conventional pathological anatomy examination and histochemistry techniques. Patients with lesion even of malign appearance without histopathological proof and those having metastasis of UAT from others cancers were not included in this study. The data were sized and analysed by Epi Info 7 logical; the characteristics studied comparison by Chi2 or odds ratio homogeneity tests when every series presented at most two modalities. Decisions were taken with a risk α of 5%.

RESULTS

Epidemiological aspects

Frequency

In the period of the study, 260 cases of UAT cancers were histologically diagnosed, which represented 0.3% of consults and 64.8% of ENT and maxillofacial cancers. The most elevated size was counted in 2013 with 59 cases and the lower during 2005 with 10 cases (3.8%). The Figure 1 shows the distribution of cancers by years.

Age and sex

Mean age was 51.3 years (± 16.5) with extremes of 3 months and 86 years. That mean age was 49.7 years in females and 52.2 years in males. The number of UAT cancers was more important in the class of patients that had more than 60 years (35%). The Figure 2 shows the distribution of cancers by age and sex. Ninety four patients (36.2%) were female and 166 (63.8%) males. the sex-ratio was 1.77. Males were predominant in the cancers of cavum (62.5%), oropharynx (70.2%), hypopharynx (69.2%), larynx (85.1%), nasal fossa and sinus (72.1%), contrary to female in the cancers of oral cavity (53.2%).

Risk factors

In general, idea of chronic smoking was found in 26.5% of patients in which 1.6% of females; the one of chronic alcoholism in 43.8% of whom 7.7% of females and the one of simultaneous alcoholism and smoking in 20.77% of patients. The alcohols most found in all patients were local alcoholised drinking (alcohol of palm wine and sorghum) and beer. The tobacco was consumed in cigarette form in 97.1% of cases and in powder to prize in 2.9%. For the cancer's siege, simultaneous alcoholism and smoking was found in larynx' cancer with 37.04% of cases, followed by oropharynx (25.93%), oral cavity (18.52%), nose and sinus (11.11%) and hypopharynx (7.4%) as in Table 1. Hygienic state of oral cavity was specified in 100 patients. In this group, we quote 18 cases (18%) of poor oral hygiene. We have quote an association between cancers of the oral cavity with wicked oral hygiene as in Table 2.

Table 1: Siege and simultaneous alcoholism and smoking.

		Simultaneous alcoholism and Smoking						
		Yes	**No**	RR	95% Confidence Interval			
	N(%) 260 (100)	**n(%)** 54 (20.77)	**n(%)** 206 (79.23)		Lower	Upper	p*	p**
Larynx cancer				1.7291	1.0737	2.7845	0.0165	0.0419
Yes	66(25.38)	20(37.04)	46(22.33)					
No	194(74.62)	34(62.96)	160(77.67)					
Oropharynx cancer				1.6283	0.9694	2.7350	0.0438	0.1139
Yes	46(17.69)	14(25.93)	32(15.53)					
No	214(82.31)	40(74.07)	174(84.47)					
Oral cavity cancer				0.4679	0.2478	0.8837	0.0056	0.0197
Yes	85(32.69)	10(18.52)	75(36.41)					
No	175(67.31)	44(81.48)	131(63.59)					
Nose and sinus cancer				0.8309	0.3854	1.7915	0.3285	0.7990
Yes	34(13.08)	6(11.11)	28(13.59)					
No	226(86.92)	48(88.89)	178(86.41)					
Hypopharynx cancer				0.8655	0.3449	2.1718	0.3964	0.9697
Yes	22(8.46)	4(7.41)	18(8.74)					
No	238(91.54)	50(92.59)	188(91.26)					

RR= Risk Ratio; * Mid-p exact; ** Chi-square test

Table 2: Oral cavity cancer and oral hygiene.

		Oral hygiene						
		Poor	**Good**	RR	**95% Confidence Interval**			
N (%) **100(100)**		**n (%)** 18(18)	**n (%)** 82 (82)		Lower	Upper	p*	p**
Oral cavity cancer				2.9167	1.2776	6.6587	0.0071	0.0199
Yes	30(30)	10(55.56)	20(24.39)					
No	70(70)	8(44.44)	62(75.61)					

RR= Risk Ratio; * Mid-p exact; ** Chi-square test

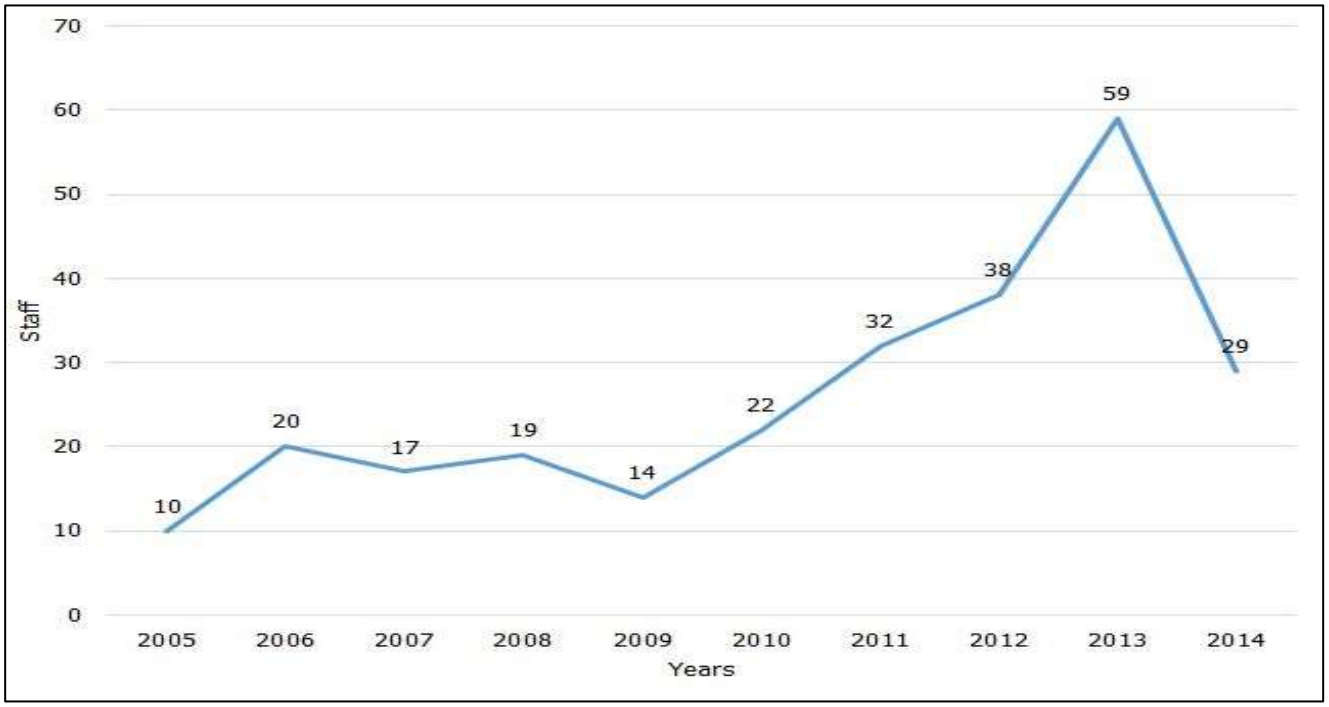

Figure 1: Distribution of cancers by years.

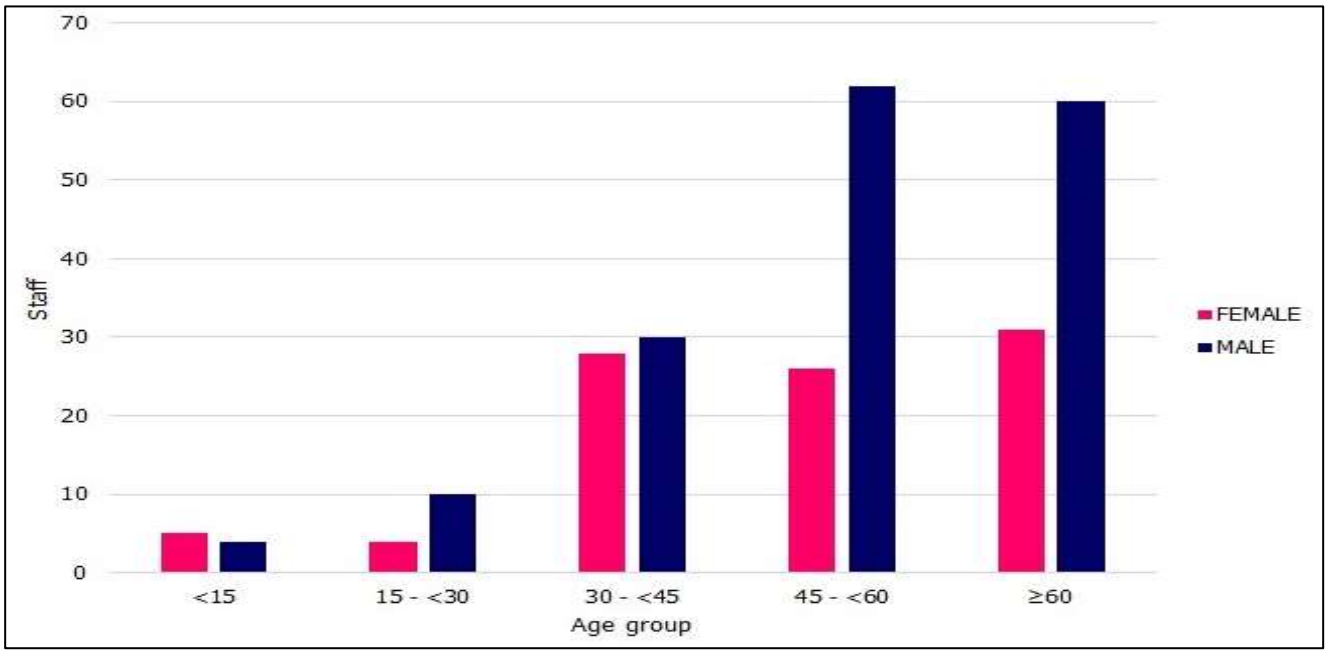

Figure 2: Distribution of cancers by age and sex.

Table 3: Distribution of cancers by siege and age.

	<15	15 - <30	30 - <45	45 - <60	≥60
oral cavity	6	3	20	33	32
Oropharynx*	0	2	15	12	19
Hypopharynx	0	2	5	3	3
Rhinopharynx*	1	3	4	7	1
Larynx	1	0	11	15	20
Nose and Sinus	1	4	4	18	16
Total	**9**	**14**	**59**	**88**	**91**

* One case of double location rhinopharyngeal and oropharyngeal.

Table 4: Distribution of cancers by histological nature and siege.

	Oral cavity	Rhinopharynx	Oropharynx	Hypopharynx	Larynx	Nose and Sinus
Undifferenciated carcinoma	0	2	1	0	0	0
Squamous cell carcinoma	81	8	38	13	46	31
Adenocarcinoma	4	0	1	0	0	2
Non-Hodgkin lymphoma*	5	6	6	0	1	6
Sarcoma	3	0	2	0	0	1
Others**	1	0	0	0	0	3
Total	94	16	48	13	47	43

*one case of non-Hodgkin lymphoma of double location; **melanoma, basal-cell carcinoma, transitional carcinoma and neuroblastoma.

Siege

The UAT cancers were dominated by the cancers of the oral cavity with 94 cases (36.2%), followed by oropharynx with 48 cases (18.5%) and larynx with 47 cases (18.1%). The Table 3 show the repartition of cancers by location and age.

A double rhinopharyngeal and oropharyngeal location was seen in one patient. in cancers of the oral cavity, gum was the most location found in 38 cases (40.4%) of which 28 in inferior gum followed by mobile tongue with 26 cases (27.7%) and hard palate with 13 cases (13.8%). we have found a predominance of cancers of the nose and sinus in maxillary sinus (41.9%), followed by nasal fossa (39.5%); we didn't have any case of cancers of the frontal and sphenoidal sinus. The palate tonsil was the most frequent siege of the cancers of oropharynx (58.3%). The hypopharynx lesion was expanded to whole hypopharynx in 84.6% of patients presenting cancer of that structure. In cancers of larynx, the lesion was expanded to the three stages in histological aspects.

The squamous cell carcinoma was predominant in UAT cancers with 217 cases (83.5%) followed by non-Hodgkin lymphoma with 23 cases (8.9%) and adenocarcinoma with seven cases (2.7%). We noticed a non-Hodgkin lymphoma of double location. The Table 4 shows the distribution of cancers by histological nature and siege. The Burkitt lymphoma represented 13% of non-Hodgkin lymphoma.

DISCUSSION

The UAT cancers with 26 cases per year on average and 0.3% of consults, are relatively rare in our practice. They represented 64.8% of ENT and maxillofacial cancers. That frequency should probably underestimated for a lot of reasons: many of the population don't know the existence of ENT and maxillofacial surgery; some clinically suspected cases couldn't be confirmed because of lack of financial resources to honour pathological anatomy exams; some patients connected their symptoms to witchery because of some beliefs, thus oriented to traditional practitioner. Our data are lower than those of occidental countries and Maghreb but higher than those reported in Nigeria by Amusa and al (45.4% of ENT cancers) and in Burkina Faso by Ouoba and al (48.8% of ENT and cervico-facial cancers).[3-6] These disparities should be due to the size of study populations; the considered period of study, the unequal repartition of cancer through the world, the absence of registers of cancers in our sub-Saharan countries and also to available diagnostic. The notion of chronic smoking was found in 26.4% of the patients in our series. Although the quantity of tobacco was not defined, our results are comparable to those of Han and al in China whom reported 29.8% of smokers in their series.[7] Nevertheless that rate is lower than the one reported in Morocco (51%) and in Zimbabwe (45%).[4,8] Cigarette is a recognised causal of cancer of the oral cavity, the pharynx and the larynx like the report of Choi and al in South Korea, Raymond and al in Switzerland.[9,10] Aupérin and al in France recorded in their study the existence of an association between

cigarette and the cancers of nasal cavities and sinus.[11] We have noticed a predominance of females in the cancers of the oral cavity. Most authors have found at variable degrees a predominance of males in the cancers of the oral cavity.[8,10,12,13] Nowadays the cancer of the oral cavity is down sharply in males and is up sharply in females. That tendency should be linked to the augmentation of alcoholism-smoking in female population in general.[13] The wicked oral hygiene have been associated to cancers of the oral cavity in our series. In the literature, the role of wicked oral hygiene was recognised in the genesis of oral cancers.[14] Next to traditional risk factors are incriminated viral factors such as Epstein-Barr virus, human papilloma virus, (HPV) and professional (wood dust, asbestos, chromium, polycyclic hydrocarbon and formaldehyde) in the genesis of UAT cancers.[2,11] Twenty to 25% of that cancers should be induced by oncogenesis HPV and specifically the type 16. It is the oropharynx and specifically the palate tonsil which is the tumoral site frequently concerned by infection by HPV.[15,16] We observed a male predominance in our series. In literature, it is generally linked to the frequency of the risk factors such as alcoholism and smoking which are apanage of males nowadays, we assit to feminization of that factors in our countries and the incidence of ENT cancers decreases in males and increases in female.[17] Histologically, the grand majority of cancers developed at the expense of the UAT mucosa are squamous cell carcinoma. That observation was reported by most authors in literature.[4,11] That malpighian carcinoma grows so much at the level of stratified squamous epithelium than cylindrical ciliated epithelium of some others mucosa such as those of the sinonasal cavity and larynx. The adenocarcinoma grow at the expense of the glandular submucosa formations. The frequency of non-Hodgkin lymphoma was linked to the existence of lymphoid formations at the level of Waldeyer's ring, the Sino nasal cavities and the cervical-facial wealth of the lymphatic system.[1] The undifferentiated nasopharyngeal carcinoma (UCNT) was rare in our practice comparatively to series of Mediterranean basin and the Southeast of Asia.[4,18] Like most of sub-Saharan countries, Togo is situated in the low incidence zone of UNCT.

CONCLUSION

The cancers of the UAT constitute the largest contingent of ENT and maxillofacial cancers in Togo. They occur most in males by the fifties but there is a high proportion of females. Tobacco and alchoholism were the risk factors most seen. On the topographical plan, that cancers predominate at the oral cavity, oropharynx and larynx. On the histological plan, squamous cell carcinoma was the predominant type followed distantly by non-Hodgkin lymphoma and adenocarcinoma. The national incidence, the search of others risk factors and population education regarding that cancer of UAT constitute the future prospects.

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