

# Epidemiological and Pathological Aspects of Head and Neck Cancers in Togo

Tchin Darré<sup>1,\*</sup>, Haréfétéguéna Bissa<sup>2</sup>, Komlavi Ehliou Akloa<sup>1</sup>, Essobozou Pegbessou<sup>3</sup>, Bathokédeou Amana<sup>3</sup>, Aman Alphonse N'guessan<sup>4</sup>, Koffi Amégbor<sup>1</sup>, Essohana Boko<sup>3</sup> and Gado Napo-Koura<sup>1</sup>

<sup>1</sup>Department of Pathology, University Teaching Hospital of Lomé, Togo

<sup>2</sup>Department of Stomatology, University Teaching Hospital Lomé, Togo

<sup>3</sup>Department of Head and Neck Surgical, University Teaching Hospital of Lomé, Togo

<sup>4</sup>Department of Pathology of the University Teaching Hospital of Bouake, Ivory Coast

**Abstract:** *Purpose:* Head and neck cancers are a major public health issue. Its current incidence is unknown in Togo. This study aimed at determining the epidemiological and histological features of head and neck cancers in Togo.

*Materials and Methods:* We examined data from patients files recorded in the registers of laboratory of pathology of the university teaching hospital of Lomé. The study concerned data of the patients received from January 1994 to December 2013. We selected only the files whose diagnosis was a cancer. The parameters analyzed were: frequency, age, gender of patients, site, macroscopic and histological type of cancer.

*Results:* Epidemiological, we collected 5234 cases of cancer of which 309cases ORL cancers, representing 5.1% of all cancer cases. The annual frequency was 15.09 cases. The average age was 45 years ranging from 3 to 87 years and a peak incidence between 41-50 years (20%). Sex ratio of 1.55.

Concerning pathological, the salivary gland cancers were the most prevalent (28.2%) followed by larynx cancers (24%). Four groups histological were observed: Carcinomas 196cases (63.43%), lymphomas 105cases (33.98%), 6 cases sarcomas (1.94%) and 2cases melanomas (0.65%). The squamous carcinoma (40.78%) was the most frequent carcinomas. The high grade non-Hodgkin lymphomas (48,4%) were common with prevalent Burkitt lymphoma.

*Conclusion:* the head and neck cancers are prevalent in young adults in Togo. The squamous carcinoma is the most common histological type.

**Keywords:** Cancer, head and neck, epidemiology, pathology, Togo.

## INTRODUCTION

Head and neck cancers (HNC) are a major public health problem. It is known as cancer developed in ears, nasal cavities, sinuses, salivary glands, oral cavity, upper esophagus, pharynx and larynx [1]. With a global incidence of 500.000 new cases per year, HNC are one of the most common cancers and are caused by smoking and alcohol [2, 3]. However, increasing evidence has documented human papillomavirus (HPV) as a cause of specific subsets of squamous cell carcinoma of the head and neck. In France, they occupy the fourth position of cancers and the fifth rank in terms of mortality [3]. In Africa, little data about HNC are available due to the lack of efficient data collection tools such cancer registry [4]. This study objective was to describe epidemiological and histological aspects of HNC in Togo, while advocating for the installation registry cancer in our country.

## 1. MATERIAL AND METHODS

This was a retrospective and descriptive study conducted in the laboratory of pathology of Lomé University Teaching Hospital, the only pathology department in the country that receives all requests of histological examination. The study period was 20 years (January 1994 to December 2013). Databases reported in these records included the patient's identity (name, surname, age, sex and address), clinical information, the personal and family history, origin, type of samples. Macroscopic descriptions and different histological types were also reported. The biopsies and surgical specimens were previously fixed in 10% formalin. Then they had undergone the usual techniques of paraffin embedding, microtome cutting, staining with hematoxylin-eosin. The cases included in our study were histological confirmed head and neck cancers. The study parameters consisted of frequency, age, sex, seat, and histological type. SPSS software was used for statistic analysis of data.

### 1.1. Ethical Consideration

This study received approval from the Head of the laboratory department to be conducted. Since it was

\*Address correspondence to this author at the Faculty of Health Sciences, University of Lomé. BP 1515, Lomé, Togo; Tel: 00228 90 31 85 32; Fax: 00228 22 29 29 02; E-mail: paolodarre@yahoo.fr

counting records, patient consent was not required. However during the counting and data collection patient names were not collected in order to preserve confidentiality.

## 2. RESULTS

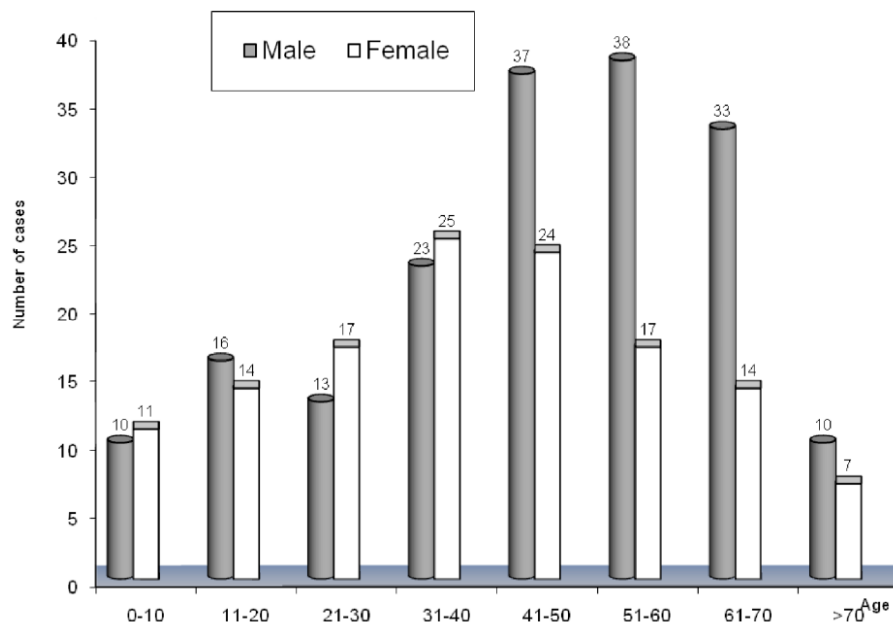
### 2.1. Epidemiology

We collected during our study period 309 cases of head and neck cancers representing 5.1% (5234 cases) of all cancers listed. These cancers ranked at fourth after breast and female genital organ cancers (17.8%), digestive cancers (12.4%) and skin cancers (9.7%). The annual frequency was 15.45 cases. Within men, they occupied the 3rd position with 8.3% after digestive cancers and skin cancers, while within

women, they ranked at sixth with 4.1%. We observed 188 cases (60.84%) of male subjects and 121 cases (39.16%) of female subjects. The sex ratio was 1.55. The mean age of patients was 45 years (ranging between 3 and 87 years). The mean age of female patients was 49.3 while 42.7 years in men (Figure 1). The distribution of head and neck cancers according to the seat and sex shown in Tables 1 and 2 show a predominance of salivary gland tumors (87 cases, 28.2%) and larynx (74 cases, 24%).

### 2.2. Histology

The samples used for this study consisted of biopsies (252 cases; 81.6 %) and surgical resection (57 cases; 18.4%). The surgical resection's specimens consisted of 48 cases of laryngectomy and 9 cases of surgical removal of tongue. At macroscopic



**Figure 1:** Distribution of head and neck cancers related to the age and the sex.

**Table 1: Classification of Head and Neck Cancers Based on Location and Age**

| Localisation         | 0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | >60 | Total |
|----------------------|------|-------|-------|-------|-------|-------|-----|-------|
| Lips                 | 0    | 0     | 1     | 2     | 5     | 4     |     | 13    |
| Tongue               | 0    | 0     | 3     | 2     | 6     | 8     | 12  | 31    |
| Oral Cavity          | 0    | 1     | 2     | 5     | 8     | 11    | 8   | 35    |
| Salivary Glands      | 3    | 8     | 14    | 21    | 19    | 10    | 12  | 87    |
| Nasopharynx          | 0    | 1     | 1     | 4     | 5     | 2     | 1   | 14    |
| Other Pharynx        | 0    | 2     | 2     | 4     | 2     | 5     | 2   | 17    |
| Nasal Cavity & Sinus | 1    | 3     | 5     | 1     | 8     | 4     | 6   | 28    |
| Larynx               | 2    | 7     | 6     | 9     | 16    | 23    | 11  | 74    |
| Ear                  | 0    | 2     | 1     | 3     | 2     | 2     | 0   | 10    |
| Other locations      | 6    | 24    | 35    | 51    | 71    | 69    | 53  | 309   |

**Table 2: Distribution of Head and Neck Cancers Based on the Location and the Sex**

| Location        | Female<br>(n= 121) | Male<br>(n= 188) | Effectif<br>(n= 309) | Frequency<br>(%) |
|-----------------|--------------------|------------------|----------------------|------------------|
| Lips            | 4                  | 8                | 13                   | 4,2              |
| Tongue          | 12                 | 19               | 31                   | 10               |
| Oral Cavity     | 10                 | 25               | 35                   | 11,3             |
| Salivary glands | 37                 | 50               | 87                   | 28,2             |
| Nasopharynx     | 3                  | 11               | 14                   | 4,5              |
| Other Pharynx   | 5                  | 12               | 17                   | 5,5              |
| Nose Sinus Ear  | 15                 | 23               | 38                   | 12,3             |
| Larynx          | 34                 | 40               | 74                   | 24               |

examination, larynx cancers mainly presented mixed forms, ulcerative budding and infiltrative aspects along with lymph node resection (32cases). Four histological types have been identified: carcinomas (63.43%; n=196 cases), lymphomas (33.98%; n=105 cases), sarcomas (1.94%; n=6 cases), and melanoma (0.65%; n=2 cases). Squamous cell carcinoma with 126 cases (40.78%) was predominant histological type followed by non-Hodgkin lymphomas with 80 cases (25.89%). Table 3 shows the distribution of cancers based on the histologic type and the seat. The squamous cell carcinomas of the larynx were associated with lymph node metastasis (32 cases). Twelve squamous cell carcinomas were studied using pTNM classification of WHO (2003), and showed a predominance of pT3 8cases.

The lymphomas were grouped into non-Hodgkin lymphomas (76.19%; n=80 cases) and Hodgkin disease (23.81%; n=2 cases). The usual Hodgkin disease (LD) consisted of 7 cases of sclerotic nodular forms and 5 cases of mixed cellularity forms. The non-Hodgkin lymphomas (NHL) were composed of low level of malignancy (7.5%; n=7 cases), intermediate level of malignancy in (44.1%; n=41cases), and high level of

malignancy (48.4%; 45 cases). 31 cases of Burkitt lymphoma were observed regarding to the international formulation of clinical use. The 6 cases of sarcomas included 3cases of fibrosarcomas, 2cases of rhabdomyosarcoma, and 1case of angiosarcoma

### 3. DISCUSSION

#### 3.1. Epidemiology

Our study has reported all confirmed head and neck at histological level in Togo. However, it still remains unknown cases of those cancers due to the absence of efficient and updated cancer register center.

In this study, the head and neck cancers represented 5.1% of all cancers. This frequency is comparable to those found in Nigeria (6.2%) and in Senegal (5.7%) [5]. In France, the incidence (20,000 cases in 2010) of these cancers significantly remains high in association with high death rate (6,000 cases in 2010). Thus, the head and neck cancers ranked at the 4<sup>th</sup> position after those of the prostate, the lung, and the colon cancers in men [6]. These cancers usually affect young adults in Africa while concerning elderly subjects

**Table 3: Distribution of Head and Neck Cancers Based on the Histological Type and the Location**

|                            | Oral Cavity | Salivary glands | Larynx | Pharynx | Ear Nose | Total       |
|----------------------------|-------------|-----------------|--------|---------|----------|-------------|
| Squamous carcinoma         | 25          | 12              | 68     | 5       | 16       | 126 (40,8%) |
| Adenocarcinoma             | 0           | 20              | 0      | 0       | 1        | 21 (6,8%)   |
| Adenoid cystic carcinoma   | 0           | 18              | 0      | 0       | 0        | 19 (6,2%)   |
| Mucoepidermoid carcinoma   | 1           | 13              | 0      | 0       | 0        | 14 (4,5%)   |
| Acinic cell carcinoma      | 1           | 7               | 0      | 0       | 0        | 9 (2,9%)    |
| Undifferentiated carcinoma | 1           | 1               | 2      | 2       | 1        | 7 (2,3%)    |
| Hodgkin lymphomas          | 4           | 2               | 0      | 4       | 2        | 12 (3,9%)   |
| Hodgkin non lymphomas      | 43          | 12              | 2      | 20      | 16       | 93 (30,1%)  |
| Sarcomas                   | 3           | 1               | 2      | 0       | 0        | 6 (1,9%)    |
| Melanomas                  | 1           | 0               | 0      | 0       | 1        | 2(0,6%)     |

in developed countries [4]. Subsequently, the mean age was 43.9 years in Nigeria compared to 62 years in France [6,7]. The masculine predominance in our research is consistent with the literature data [2,3,7]. Onzotto *et al.* have reported 69.5% in men and 30.5 % in women In Ivory Coast [8]. Alcohol and smoking are the major risk factors implicated in the occurrence of head and neck cancers [9]. The high rate of head and neck cancers might be resulted from more alcohol consumption and more smoking habits in men than women. However, there is generally an increase trend of head and neck cancers in women worldwide because of the human papilloma virus (HPV) infection and the Epstein Barr virus (EBV) [10].

Based on the location, the cancers of the salivary glands and the larynx were the most frequent followed by pharynx and oral cavity cancers. The larynx cancers are usually caused by smoking. They represented 1.5% of all cancers and ranked at 11<sup>th</sup> of cancers in men and 21<sup>st</sup> in women [11]. The larynx cancers have a high potential of lymph node and organ metastasis, and therefore explaining the treatment failure despite their radiosensitivity [11].

The pharynx cancers were commonly represented by nasopharynx cancers in our study. Diverse risk factors such as genetic, environmental, and viral (EBV) factors are involved nasopharynx cancers while HPV is associated with the occurrence of oropharynx cancers [12]

### 3.2. Histology

In our study, the head and neck cancers were considerably represented by the squamous cell carcinoma (40.7%). This result corroborate with the data (52% of squamous cell squamous) reported by Bamba *et al.* in Ivory Coast [13]. The adenoid cystic carcinoma and the adenocarcinomas are mostly derived from the salivary glands. The Burkitt lymphomas were the most prevalent lymphomas in our research. Our data are similar to those results recorded by other authors in African sub-Saharan region, known as the classic endemic zone of Burkitt lymphoma [14]. The high incidence observed in some African regions would be caused by the malaria. Consequently, malaria along with EBV promotes the occurrence of Burkitt lymphomas [14].

The anatomic differences in locations of squamous cell carcinomas result in varied prognostic levels: the larynx cancers have a better prognosis compared to

hypo pharynx cancers or the oral cavity cancers [15]. Overall, the cancer prognosis assessment includes the patient clinical status, the histological type of cancer, cancer differentiation, and the cancer grading [15]. Since the prognosis of head and neck cancers directly depends on the number of lymph node invasion, the patient survival is critical, and therefore compromised by at least three invaded nodes [16]. The rare sarcomas and melanomas reported in our study are similar to those of most researchers [1,2,16].

### CONCLUSION

The head and neck cancers are relatively frequent in Togo despite the quality of available data. They occur in male young adults. The salivary glands and the larynx cancers were the most frequent. The major histological types were squamous carcinoma and Burkitt lymphoma. As a result, it is exigent to implement a national registry cancer along with efficient national strategies against cancer in Togo.

### CONFLICTS OF INTEREST

The authors report no conflict of interest.

### AUTHORS CONTRIBUTIONS

**TD**: was responsible for the design of the study, undertook the field study, performed data collection, analysis and interpretation, and wrote the manuscript. **HB, KA, EP, BA, KA, KA**: participated in the design of the study, supervised the data collection and participated in the data analysis. **EB** and **NG** are responsible for the overall scientific management of the study, the analysis and interpretation, and preparation of the final manuscript. All authors have read and approved the final manuscript to be submitted for publication

### REFERENCES

- [1] Barnes C, Everson J, Reichart P, Sidransky D. Pathology and genetics, Head and neck tumors. World Health Organization Classification of tumors. Lyon: IARC Press 2005.
- [2] Lacau St Guily JL. Head and neck cancer: towards a more effective and less damaging therapeutic strategy. *Rev Prat* 2006; 56(15): 1634-6.
- [3] Cojocariu OM, Huguet F, Iefèvre M, Périé S. Facteurs pronostiques et prédictifs des cancers des voies aérodigestives supérieures. *Bull Cancer* 2009; 96(4): 369-78.
- [4] Parkin DM, Ferlay J, Hamdi-Chérif M, Sitas F, Thomas JO, Wabinga H, *et al.* Cancer in Africa: Epidemiology and Prevention. IARC Scientific Publications 2003; No. 153, Lyon, IARC Press.

- [5] Adeyi A, Olugbenga SJ. The challenges of managing tumors of the head and neck malignancies in a tertiary care center of tropical Nigerai. *Pan Afr Med* 2011; 10: 31.
- [6] Hill C, Doyon F. The frequency of cancer in France: mortality trends since 1950 and summary of the report on the causes of cancer. *Bull Cancer* 2008; 95: 5-10.
- [7] Aswani J, Baidoo K, Otiti J. Establishing a head and neck unit in a developing country. *J Laryngol Otol* 2012; 126(6): 552-5.  
<http://dx.doi.org/10.1017/S0022215112000333>
- [8] Onzotto G, Koffi-Aka V, Yotio A, Ehouo F, Adjoua B, Bamba M: [Oto-rhino-laryngology and geriatrics in the Ivory Coast]. *Rev Laryngol Otol Rhinol (Bord)* 2002; 123(2): 119-23.
- [9] International Agency for Research on Cancer. Tobacco habits other than smoking. IARC monographs on the carcinogenic risk of chemicals to humans. IARC, Lyon 1985; 37: 1-291.
- [10] Sturgis EM, Cinciripini PM. Trends in head and neck cancer incidence in relation to smoking prevalence: an emerging epidemic of human papillomavirus-associated cancers? *Cancer* 2007; 110(7): 1429-35.  
<http://dx.doi.org/10.1002/cncr.22963>
- [11] Peng J, Ménégos F, Lesech JM, Remontet L, Grosclaude P, Buémi A, et al. [Larynx cancer in France: descriptive epidemiology and incidence estimation] *Bull Cancer* 2004; 91(4): 363-8.
- [12] Iseh K. Laryngectomie totale pour le cancer du larynx dans un centre de soins tertiaires nigérien: pronostic et résultat. *J Surg cas Rep* 2011; 3(1): 23-30.
- [13] Bamba M, Kouassi B, Ette A, Haeffner G, Ehouo F, Boquifo J, Adjoua RP, Cacouchia: [Epidemiological study of otorhinolaryngologic cancers in Abidjan (Ivory Coast). Apropos of 204 cases]. *Rev Laryngol Otol Rhinol (Bord)* 1986; 107(5): 385-90
- [14] Kirk O, Pedersen C, Cozzi-Lepri A, Antunes F, Miller V, Gatell JM, et al. Non-Hodgkin lymphoma in HIV-infected patients in the era of highly active antiretroviral therapy. *Blood* 2001; 98: 3406-12.  
<http://dx.doi.org/10.1182/blood.V98.12.3406>
- [15] Keita M, Kampo MI, Timbo SK, Traoré CB, Diallo M, Doumbia-Singaré K, et al. Morbidity of the tumors of the head and neck in Bamako. *Mali Med* 2009; 24(3): 1-6.
- [16] Babin E, Joly F, Vadillo M, Dehesdin D. Oncology and quality of life. Study in head and neck cancer; *Ann Otolaryngol Chir Cervicofac* 2005; 122(3): 134-41.  
[http://dx.doi.org/10.1016/S0003-438X\(05\)82338-2](http://dx.doi.org/10.1016/S0003-438X(05)82338-2)

Received on 21-11-2014

Accepted on 30-01-2015

Published on 12-02-2015

<http://dx.doi.org/10.6000/1927-7229.2015.04.01.5>