

## A review of the clinicopathologic pattern of head and neck malignant tumours in Ilorin, Nigeria

Oluyomi S Ayodele<sup>1</sup>, Kayodele H Omokanye<sup>1</sup>, Segun Segun-Busari<sup>1</sup>, Kazeem O O Ibrahim<sup>2</sup>, Abdulrhaman O Afolabi<sup>1</sup>, Olaleke O Folaranmi<sup>2</sup>, Aderinola O Wuraola<sup>1</sup>, Muritala Jimoh<sup>1</sup>, David A Dunmade<sup>1</sup>, Sulyman B Alabi<sup>1</sup>, Emmanuel F Ologe<sup>1</sup>

### Abstract

**Background:** Head and neck cancers remain a major public health concern with increasing prevalence in Africa. The aim of this study was to highlight the current trends of head and neck cancers and compare with previous studies.

**Methods:** A retrospective study of head and neck cancers seen in University of Ilorin Teaching Hospital over a 6-year period (2013 – 2018) was done. Information was retrieved from the clinic, theatre and cancer registry centre. Sites of tumours, duration of symptoms before presentation, reasons for late presentation and histopathological diagnosis were extracted.

**Result:** There were a total of 143 histologically confirmed head and neck cancers. The age ranged from 2 – 100 years with a mean age of 52 years. The duration of symptoms at presentation was found to range from 3 months to 78 months. Over 80% presented late. Reasons for late presentation were financial constraints (60.5%), ignorance/wrong beliefs

(32.4%), traditional treatment (41.6%) and delayed referral (22.5%). Commonest sites were sinonasal region (13.3%), larynx (11.9%), and the nasopharynx (11.2%). Of these, 58.0% were carcinomas, 25.2% were lymphomas, 7.0% were sarcomas while 9.8% were blastomas.

**Conclusion:** The clinicopathological pattern of head and neck cancers revealed no significant change over the past 20 years. However, it is expedient to carry out this kind of study at regular intervals to enable health care professionals update existing records. It will help in the revision of policies that are tailored towards reducing the prevalence of head and neck tumours.

**Keywords:** Head and neck cancers, Increasing Prevalence, late presentation, developing countries, Changing trends

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### Introduction

Head and neck malignant tumours remain a major public health crisis all over the world.<sup>1</sup> Globally, they constitute 5–50% of all cancers in the human body,<sup>1,2</sup> with varying and increasing prevalence in different parts of the world.<sup>3</sup> They were the seventh most common cancer worldwide in 2018 with 890,000 new cases and 450,000 deaths<sup>4</sup> and over 1.5% of all cancer deaths (10,030 deaths) in the United States.<sup>5</sup> They represent the most common cancers in developing countries,<sup>6</sup> accounting for greater than 50% of newly diagnosed cancers in 2010 and a projected rise to 70% by 2030.<sup>7</sup>

Head and neck cancers can adversely affect the normal integrity of the head and neck region which determines the quality of an individual's social interaction, emotional expression, and functional capabilities such as breathing, swallowing, speech, hearing, vision, taste, smell, etc.<sup>8,9</sup> Distortion of this region by malignant tumours cannot be concealed and are associated with high morbidity and mortality.

Prognosis largely depends on accurate and timely diagnosis, proper and adequate treatment.<sup>9</sup> The aim of this study was to revisit the clinicopathologic pattern of head and neck malignant tumours and to highlight the current trends of primary head and neck malignant tumours in Ilorin and compare the results with previous studies in this centre and other regions.

### Patients and Methods

A retrospective review of all histologically confirmed head and neck malignant tumour cases seen at the University of Ilorin Teaching Hospital (UITH), Ilorin between January 2013 and December 2018 was carried out. Information was retrieved from the medical records of Ear, Nose and Throat Department, theatre and cancer registry records of the hospital. Sociodemographic data, sites of primary head and neck cancers, duration between the first symptoms and the time of presentation at the clinic, reasons for the timing of presentation and histopathological diagnosis were extracted and analyzed. Late presentation was based on the clinical staging of the tumour at presentation as well as the duration between the first symptom and the time of presentation. Intracranial tumours were not included in this study. International Classification of Diseases for Oncology (ICD-O), 3rd edition<sup>2</sup> was used for classifying the different sites of the head and neck while data analysis was done using STATA version 15 (StataCorp LLC, USA)

<sup>1</sup>ENT Department, University of Ilorin Teaching Hospital, Ilorin, Kwara State, Nigeria, <sup>2</sup>Pathology Department, University of Ilorin Teaching Hospital, Ilorin, Kwara State, Nigeria

All correspondences to:  
Dr Oluyomi S Ayodele  
Email: oluayo4me@yahoo.com

## Results

Out of 1963 cases of body cancers recorded within the 6-year study period, a total of 143 were histological confirmed head and neck cancer cases. These amounted to 7.3% of all body cancers with an average of 24 new cases of head and neck cancers per year. The frequencies of the yearly trend revealed a higher value of 36 cases and 27 cases in 2017 and 2018 respectively with lower values of 18 cases and 19 cases in 2015 and 2016 respectively, as shown in Figure 1.

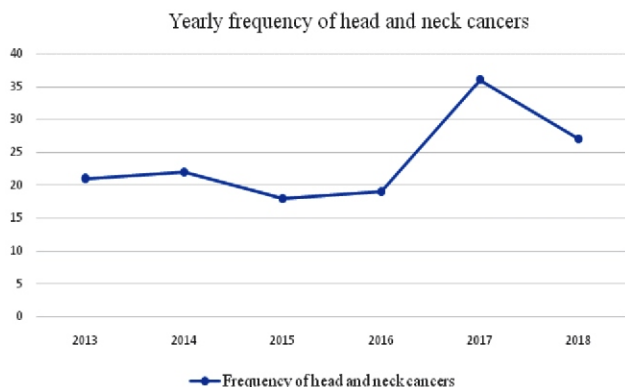


Figure 1: Graphical pattern of the frequency of head and neck cancers on yearly basis

Table 1: Age and sex distribution of head and neck cancer cases (n=143)

Age range (years)	Frequency			Total	Percent (%)
	Male (M)	Female (F)	M:F Ratio		
≤ 9	11	6	1.8:1	17	11.9
10 - 19	3	9	1:3	12	8.4
20 - 29	6	5	1.2:1	11	7.7
30 - 39	12	6	2:1	18	12.6
40 - 49	9	14	1:1.5	23	16.0
50 - 59	14	12	1.2:1	26	18.2
60 - 69	9	7	1.3:1	16	11.2
70 - 79	7	5	1.4:1	12	8.4
80 - 89	3	3	1:1	6	4.2
≥ 90	1	1	1:1	2	1.4
TOTAL	75	68	1.1:1	143	100

There were 75 (52.4%) males and 68 (47.6%) females with male to female (M:F) ratio 1.1:1 (Table 1). The age ranged from 2 – 100 years with a mean of 51.7 years ± 17.8. The age group of 50 – 59 recorded the highest number with 26 (18.2%) patients while least frequencies were in the age group of 80 – 89 and those over 90 years old (Table 1). Paediatric cancers accounted for 20.3% with male to female ratio of 1:1.1 while adult cancer was 79.7% of all head and neck cancer cases with a mean age

of 56.2 years and M:F ratio 1.2:1. Commonest sites of head and neck cancers were sinonasal region (13.3%), larynx (11.9%), nasopharynx (11.2%) and the thyroid gland (11.2%) as shown on Table 2.

Table 2: Distribution of the anatomical sites of head and neck cancers (n = 143)

ICD-O Numbers	Tumour sites	Frequency	Percent (%)
C00 - C06	Oral cavity	8	5.6
C07 - C08	Salivary glands	11	7.7
C09 - C10	Oropharynx	9	6.3
C11	Nasopharynx	16	11.2
C30 - C31	Nose/paranasal sinus	19	13.3
C32	Larynx	17	11.9
C41	Jaw	8	5.6
C44.2	Ear	3	2.1
C69	Eye	6	4.1
C73	Thyroid gland	16	11.2
C77	Lymphoid tissues	22	15.4
C80	Cancer of undetermined primary site	8	5.6
TOTAL		143	100

Table 3: Histological types of Head and Neck Cancers

Histological types	Frequency	Percent (%)
Carcinoma	75	52.4
Lymphoma	36	25.4
Blastoma	14	9.8
Sarcoma	10	7.0
Carcinoma of undetermined primary site	8	5.6
Total	143	100

Table 4: Duration of symptoms at presentation (n=143)

Duration of symptoms	Frequency	Percentage (%)
Less than 6 months	18	12.6
6 months < 1 year	41	28.7
1 - 3 years	57	39.9
> 3 years	27	18.8
TOTAL	143	100

Of the 143 patients reviewed in this study, the following were the histological types: 83 (58.0%) had carcinoma, 36 (25.2%) had lymphoma, 10 (7.0%) had sarcoma while 14 (9.8%) had blastoma (Table 3). The duration between the first symptom and the time of presentation ranged from 3 months to 78 months with a mean duration of 12.8 months. Most of the patients (87.4%) presented to

our centre after 6 months of first symptom (Table 4). Common reasons for late presentation were financial constraints (60.5%), Ignorance and wrong beliefs about the diseases condition (32.4%), traditional treatment (41.6%) and delayed referral and missed diagnosis (22.5%). A number of the patients had more than one reason for late presentation.

### Discussion

Head and Neck cancers in this study were found to be about 7.3% of all the cancers in the body system which was within the range of 5-50% found in previous studies in Nigeria and beyond.<sup>1,3,10,11</sup> The male to female ratio 1.1:1 which was also within the range of 1:1 to 2.3:1 reported in a review article on evidence on the burden of head and neck cancers in Nigeria.<sup>12</sup> Other studies have also shown various gender preponderance. Ologe et al<sup>13</sup> and Tobih et al<sup>14</sup> found a slight female preponderance. Adoga et al<sup>15</sup> reported a high male preponderance (2.7:1). However, similar to previous studies<sup>10,16-19</sup> which reviewed all the head and neck cancers as a whole; we found a slight male predominance.

This study revealed a yearly hospital incidence of about 24 new cases. This is within the yearly incidence reported by previous Nigerian studies: 20 cases by Bhatia et al<sup>20</sup> in North Central, 23 cases by Sowunmi et al<sup>11</sup> in South West, 24 cases by Otoh et al<sup>21</sup> in North East, and 52 cases by Forae et al<sup>19</sup> in South South. The reason for a spike in the incidence in 2017 is not clear.

The peak incidence of head and neck cancers in age group 50 – 59 years fell within 3rd to 6th decades reported by Lilly-Tariah et al<sup>12</sup> and this is also similar to the findings in previous studies.<sup>14,17,18</sup> In all, about 60% of patients were 40 years of age and above, similar to the previous study in this centre and others in Nigeria.<sup>13,14,19</sup> but in contrast with the study done in North East of Nigeria, where over 60% of patients were 40 years and below.<sup>10</sup> Though, the age group of 50 – 59 recorded the highest number of head and neck cancers patients, the 12.5% prevalence of childhood malignancies in the first decade of life is still similar to the findings of Ologe et al<sup>13</sup> (12.4%) and Iseh et al<sup>22</sup> (13.0%). Nonetheless, Adisa et al<sup>18</sup> found that head and neck malignant tumours occurred least frequently in the first decade of life and displayed a gradual increase until it peaked in the 45-64 age range.

Most patients in our environment presented to the hospital at advanced stages of the disease.<sup>12</sup> Over 80% of patients presented to our clinic after 6 months of onset of the symptoms owing to financial constraints, ignorance, cultural beliefs and alternative treatment. Ologe et al<sup>13</sup> also identified finance and traditional medicine as strong reasons for delay in seeking for orthodox medicine. Adoga et al<sup>15</sup> found 79.8% of patients presenting after 6

months; many had already visited the herbalist in the course of their illness before presenting to the hospital. In this part of the world, patients consulting traditional healers and spiritual faith healers tend to contribute to needless delays.<sup>12</sup> In fact, studies on the diagnosis of head and neck cancers have revealed that over 70% of cases diagnosed with stage III and IV disease were due to late presentation.<sup>17,23</sup> Approaches to minimize the burden of cancer in sub-Saharan Africa has been limited by the triad of ignorance, poverty, and poor health-seeking behavior among Africans; worsening the burden of cancer irrespective of age and gender.<sup>12,24</sup> Limited trained personnel (Head and neck surgeons, Maxillofacial surgeons, General surgeons, and Family physicians) to make proper diagnosis and referral contributes to the late presentation.<sup>12</sup> Many of these factors which include but not limited to cultural beliefs, religion, educational levels, problems with transportation interplay in the delay attitude towards early presentation, diagnosis and management of cancers in Africa.<sup>25</sup>

In an overall pattern of head and neck cancers from different regions of Nigeria, nasopharynx, nose/paranasal sinuses and larynx were the commonest sites.<sup>12</sup> Sinonasal region is still the commonest site of head and neck cancers seen in this environment when compared with the previous study<sup>13</sup> done in this centre. Tobih et al<sup>14</sup> also found sinonasal cancer as the most common group of head and neck malignancy, while laryngeal and pharyngeal malignancies were the second and third most common respectively. There was an increase in the frequency of laryngeal cancers from 4.5% to 11.9% making laryngeal cancers which used to be the fourth commonest<sup>13</sup> to become the second most common in our environment. According to the World Health Organization's report on classification of head and neck tumours, laryngeal cancer is the second most common malignancy of the upper aerodigestive tract.<sup>26</sup> In fact, in a recent study in Southern Nigeria, the most common head and neck topographic tumor site was larynx.<sup>19</sup> In another recent study in Ibadan, Southern Nigeria, Fasunla et al<sup>27</sup> found malignant tumor of the larynx to constitute 37.3% of all head and neck malignancies managed during a 11-year study period. Though not included in our study, the incidence of laryngeal cancers is surely increasing with rapid economic growth in developing countries like ours because it is always accompanied by life-style modifications such as tobacco smoking (including passive smoking), alcohol consumption, frequent exposure to inhalational irritants at workplaces, homes as well as malnutrition.<sup>28-30</sup>

The frequency of nasopharyngeal cancers still remains within previous series in this centre (maintaining its position as the third commonest),<sup>13,31</sup> while there was a decrease in cancer of undetermined

primary site from 10.1% to 5.6% within the space of 20 years. Results from a national survey by the Danish Society<sup>32</sup> also found a decreased from 2.5 to 1.7% in a 20-year period. The decrease in the frequency of cancers of undetermined origin can be alluded to the availability of better investigative modalities which include better endoscopic assisted diagnostic measures in our centre.

Head and Neck cancers were mostly carcinomas in our study. Lymphomas were second most common, followed by blastomas and sarcomas respectively. This has been the usual pattern in this center and some other regions in Nigeria.<sup>10,13,14,18,22</sup> Kodiya et al<sup>10</sup> found lymphoma as the second most common primary malignancy in the head and neck region and was reported to constitute approximately 3-5% of the head and neck cancers in the study. In their study on the pattern of head and neck malignant tumour, Amusa et al<sup>16</sup> found lymphoma cases as the commonest especially in the first decade of life. Similarly, the high frequency of children less than 10-year-old in this study was as a result of high frequency of Burkitt lymphoma and retinoblastoma among them. This is also in line with the study done in Benin City, Southern Nigeria.<sup>19</sup> Head and neck sarcomas on the other hand have been reported to be relatively rare, accounting for 7% of head and neck cancers in this study which was within 2 to 10% reported in previous studies.<sup>16,18,19</sup> Cases of sarcoma were not reported in the previous 5-year clinicopathological study of head and neck cancers carried out in this centre.<sup>13</sup>

### Conclusion

The clinicopathologic pattern of head and neck malignant tumors in Ilorin, North Central region of Nigeria revealed no significant change in the prevalence of primary head and neck cancer cases over the past 20 years. However, head and neck malignant tumours remain a public health problem affecting all age groups with highest incidence occurring in the middle-aged group. Most sufferers are terminally ill with no adequate funds to maintain the costly treatment modalities. Late presentation is a major limitation to curative measures, hence creation of awareness on presentation will enhance early treatment and cure. It is therefore expedient to carry out this kind of study at regular intervals to enable health care professionals update existing records. Furthermore, it will also help in the revision of policies that are tailored towards reducing the prevalence of head and neck tumours in our environment.

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