PATTERN OF HEAD AND NECK CANCERS IN SOKOTO- NIGERIA.

by

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Summary

***Objective**: To determine the pattern of head and neck cancers in Sokoto north western Nigeria.*

***Materials and method:** This is a retrospective study of 131 histologically diagnosed head and neck cancers over a 5 year period(1999-2004) from Usmanu Danfodiyo University Teaching Hospital Sokoto Nigeria.*

***Results:** One hundred and thirty-one head and neck cancers were studied representing 21% of the total number of 623 histologically diagnosed malignancies in the centre during the 5year period (1999-2004).There were 77males(58.8%) and 54 females(41.2%).The male to female ratio was 1.43:1.The ages of the patients ranged from 9 months to 80 years. There were 69 carcinomas (52.7%), 27 lymphomas (20.6%),18 sarcomas(13.7%)and 17 blastomas (13.0%).Thirty-nine cases [30%] were Head and neck squamous cell carcinomas. Nasopharyngeal carcinoma (13%) was the commonest Head and neck cancer in adults spanning through the 3rd ,4th ,5th,6th and 7th decades of life with the highest number in the 5th decade.. Retinoblastoma (13.0%) was the commonest childhood head and neck cancer.*

***Conclusion: The pattern of** Head and neck cancers in this region involved every site and the younger age group When compared to other parts of the country,suggests that concerted efforts should be directed towards prevention and setting up of more centres for screening, diagnosis, treatment and rehabilitation of head and neck cancers..*

Keywords; Head and Neck, cancer, Sokoto, Nigeria

Introduction:

Head and neck cancer is an emerging public health concern in many developing countries of the world including Nigeria. Globally, they cause an estimated 333,400 deaths annually and are rated the 6th most common cancers worldwide , accounting for about 5% of all cancers in the western world [1-5]. Studies done in different population groups have shown that the pattern of occurrence of the principal head and neck cancers are determined by race and geographic location among other factors[1-5]. It is noteworthy that in parts of Southeast Asia, head and neck cancers are the most common malignant conditions among men[1-5]. These observed striking variations in head and neck cancer sites and incidence among different regions, culture; and demographic groups, are due in large part to differing patterns of diet, tobacco and alcohol consumption.[2,4-6] It is a matter of grave concern that an increased prevalence of smoking in the developing world has been noted to correlate with rising incidence of this group of cancers, even as smoking rates are declining in the affluent societies[4-6].

New advances in medical technology and molecular biology that helped in early diagnosis and treatment of head and neck cancers, have led to improved long term survival rates of some cancers along with improvement in the overall quality of life over time in well equipped centres.[2,4-6]. The prospects for cure, sadly , are compounded for patients in the developing countries where majority of head and neck cancer patients present with advanced disease due to limited access to medical facilities [7-16].

Emphasis is increasingly shifting towards the early detection and primary prevention of head and neck cancers [2,4-6]. Martinson was credited with the first comprehensive work on cancers of the head and neck region in Nigeria [15-16]. Subsequent clinico-pathologic studies in the country have established the prevalence of these tumours and confirmed their rising incidences[8-9,12-26]. This study was done to elucidate the anatomical sites, histologic types, and sociodemographic pattern of the head and neck cancers in north western Nigeria. It hopefully would provide a guide to their prevention, control and clinical management in this region.

Materials and Methods:

This is a retrospective study of head and neck tumours from Usmanu Danfodiyo University teaching Hospital (UDUTH) Sokoto Nigeria. The UDUTH Sokoto is a 400-bedded facility, which serves as a referral centre for cancer diagnosis and treatment in the North western Nigeria. Its laboratories receive surgical biopsies specimen from general hospitals and private clinics located within and outside Sokoto, Kebbi and Zamfara States of Nigeria . Data on head and neck cancers were collated from the registers of department of Histopathology which keeps archives of histology reports, microscopic slides and paraffin blocks of patients' biopsies that had been stored serially on yearly basis. Surgical tissue specimens are routinely processed in the laboratory and stained by the Haematoxylin and Eosin method.

All cases of head and neck cancers diagnosed from January 1999 to December 2004 were extracted for the purpose of this study. Demographic information was collected on each case indicating the clinical summary, nature of specimen and histological diagnosis.

The respective microscope slides were retrieved and reviewed for diagnostic accuracy for cancer based on established microscopic criteria. Special stains were applied for differential diagnosis in selected cases. The International Classification of Diseases for Oncology (ICD-O) third edition 2000 was used to classify the cancers based on site. cancers of the intracranial compartment and those cases in which both the slides and tissue blocks could not be traced were excluded from the study.

The results were analyzed and, presented in the form of simple frequency tables.

Results:

One hundred and thirty-one head and neck cancers were studied representing 21% of the total number of 623 histologically verified malignancies diagnosed in the centre during the period 1999-2004.

There were 77 males (58.8%) and 54 females (41.2%).The male to female ratio was 1.43:1.The ages of the patients ranged from 9 months to 80 years.

There were 69 (52.7%),carcinomas 27(20.6%), lymphomas 18(13.7%) sarcomas and 17(13.0%). blastomas [Table 1]. Thirty-nine cases [30%] were Head and neck squamous cell carcinomas.

Nasopharyngeal carcinoma (11.5%) was the commonest head and neck cancer in adults spanning through the 3rd ,to 7th decades of life with the highest number of cases in the 5th decade{40-49year age range}[Table 1]. Retinoblastoma (13%) was the commonest childhood head and neck cancer while the eye and adnexae recorded the highest number of cases (18.3%) followed by the pharynx(16.8%) and Skin(14.5%).About 36 patients(30.6%) were below 20years from the 1CDO classification.

Discussion:

Head and neck cancers account for 5 per cent of the global burden of cancer[1-5]. They are a heterogeneous group of malignancies of which 75- 90 percent are typically head and neck squamous cell carcinomas [HNSCC] in reported series from the developed countries[1-5].In this study,131 head and neck cancers accounted for 21% of the total number of histologically diagnosed malignancies at the Usmanu Danfodiyo University Teaching Hospital(UDUTH) Sokoto in north western Nigeria. The cancer registry of the teaching hospital became officially functional in the year 2002 when the services of a consultant pathologist was engaged on a more permanent basis. Therefore the figures in this paper are likely to be low due to inadequate record keeping .

The most common histological type in this study was Squamous cell carcinoma(30%).This was considerably lower than over 75-90% reported from the western world [1-5]. Reports from other parts of Nigeria showed that HNSCC to be the commonest histological type except from an earlier report by Bhattia working in Jos Nigeria who found lymphoma to be the most common histological type[8,9,12,13].

The treatment options for HNSCC vary depending on the site and stage of the disease. Surgery, chemotherapy and radiotherapy may be used in various combinations depending on what is affordable and feasible for the patient.

Lymphomas(20.6%) were the second common histological type found in this series. This agrees with the findings in the western world, Manipur state in India; Ibadan, Enugu and Maiduguri in Nigeria [1-5.8-12].

Lymphomas were the third most common malignant tumour in adult Nigerians after breast cancer and prostrate cancer from a study in Ile – Ife by Adelusola et al [14].Lymphomas are malignant tumours of the immune system and are broadly divided into Hodgkins disease and Non-Hodgkin's lymphoma [14].In this study, the predominance of intermediate grade tumours was remarkable because unlike low grade tumours which are indolent but incurable, intermediate grade lymphomas are potentially curable using cyclophosphamide, hydroxydaunorubicin, oncovin and prednisolone (CHOP) chemotherapy [14].

Sarcomas (13.7%) were the third most common histological type of head and neck malignancies in this study. Sarcomas (6.6%) were the second most common histological types from a study by Nwawolo working in Lagos, Nigeria[9]. Generally, sarcomas of the head and neck were regarded as comprising of a heterogeneous group of tumors varying from low grade to high grade malignancies. Excision with a wide tumour free margin offers the best prognosis [9].However this may be difficult if vital neurovascular tissues are closely involved.

Blastomas(13%) ranked fourth in histological diagnoses in this study with retinoblastoma(13%) being the most common childhood malignancy from this environment . Retinoblastoma is the most common primary malignant intra-ocular tumour of childhood globally [26] .It was found in about 1 in 20,000 live births and the sexes were equally affected [25]. Enucleation, radiotherapy, photocoagulation, cryotherapy and systemic chemotherapy (vincristine,doxorubicin) all have their place in the management of retinoblastoma [26] .

In this study nasopharyngeal carcinoma(11.5%) was the most common head and neck cancer in

adults spanning through the 3rd,to 7th decades of life while retinoblastoma was the commonest childhood malignancy. Malignancy of the eye and adnexae(18.3%) were the highest recorded cancers followed by the pharynx(16.8%) and the skin(14.5%).

While nasopharyngeal cancers are the commonest Head and neck cancers in reports from Lagos, Jos, and Maiduguri in Nigeria the larynx and hypopharynx are by far the most common sites of HNSCC in the western world[2,4-6,8,9,12].Cigarette smoking and alcohol consumption were the two strongest aetiological factors for the development of HNSCC both independently and synergistically [2].

The male to female sex ratio in this study was 1.43:1.An average male to female sex ratio for Head and neck cancers in the western world and globally is 2:1 but 10:1 in laryngeal carcinomas [1-5].

The peak age group for most head and neck cancers in the western world is about the 5th or 6th decades of life [2,4].Studies in Nigeria appears to involve lower age groups such as the 3rd, 4th and 5th decades of life [8,9]. It has been observed that cancers tend to occur at younger age groups among black Africans compared with Caucasians [9,10,11].While no exact reasons for this has been elucidated, we propose that unidentified viral infections, exposure to unknown carcinogens, nutritional deficiencies in the diet from ignorance and poverty may be responsible for this trend in addition to cigarette smoking and alcohol consumption which are already known strong aetiologic factors. This younger age group incidence should be a matter of great concern in the nation where over 60% of the population in the country are young people. These young people contribute significantly to the work force of the nation and are not only future leaders but the major driving force in the social, political and economic programmes of the nation.

Almost every site in the head and neck was represented in this study making it clear that management of head and neck cancers may require a multidisciplinary approach. It is also a recognized fact that some head and neck cancers could be encountered in Acquired Immune Deficiency syndrome(AIDS) patients, in whom they might be the primary manifestation as mode of presentation[2,17].The scourge of AIDS is already causing havoc to families and societies world wide with Africa and Nigeria in particular having to face new challenges posed by this disease. Therefore additional problems such as morbidity and mortality from head and neck cancers may add more devastating effects to the nation's population in all aspects of life. This calls for more pragmatic and realistic programmes that should address prevention, early detection and prompt treatment of head and neck cancers in the nation.

Despite the various reports in Nigeria [8,9,12-24] on head and neck cancers, facilities to handle them are not adequate in the nation right from diagnosis to treatment, rehabilitation and follow up care at all levels of health care be it primary, secondary or tertiary. The few centres saddled with the responsibilities of treatment of cancers in the nation are overlaboured and are not able to cope effectively with the workload of several patients from different parts of the country.

In the northwestern region, surgery and chemotherapy are the only forms of treatment for cancers. No facilities exist for radiotherapy. Radiotherapy services are located at Zaria (4-5hours drive),Abuja(7-8hours drive) Ibadan and Lagos (11-13hours drive) from Sokoto. It is often a herculean task to convince these patients to travel for radiotherapy treatment for malignancies sensitive to radiotherapy after obtaining the histological diagnosis. Cancer treatment is expensive and in the head and neck cancers the additional problem of dealing with functional deficits and cosmetic deformities makes extra demands on both the physician and the patient.

More centres should be equipped for screening, diagnosis, treatment,and rehabilitation of head and neck cancers with significant subsidy by both government and private agencies for cancer treatment.

In conclusion, this study showed that head and neck cancers in north western Nigeria not only involves every site but also that younger age groups are involved when compared to the western world. In view of the increase in the

number of younger age groups with head and neck cancers,with attendant smoking and alcohol consumption in Nigeria, it is imperative that decisive preventive measures should be put in place to stem the tide of these cancers from growing to alarming proportions in the near future.

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TABLE I.
HISTOPATHOLOGICAL TYPES OF HEAD AND NECK CANCERS IN SOKOTO (n=131).

Anatomical group and Type	Male	Female	Frequency
Eye and Adnexae	**13**	**11**	**24(18.3%)**
Retinoblastoma	10	7	17
Burkitt's lymphoma	1	2	3
Non Hodgkin lymphoma	1	1	2
Rhabdomyosarcoma	1	1	2
Pharynx(Nasopharynx 15, Oropharynx 5,hypopharynx 2)	**17**	**5**	**22(16.8%)**
Squamous cell carcinoma	12	3	15
Lymphoma	4	1	5
Kaposi's sarcoma	1	1	2
Skin	**10**	**9**	**19(14.5%)**
Basal cell carcinoma	4	6	10
Squamous cell Carcinoma	3	3	6
Melanoma	1	-	1
Malingnant eccrine acrospiroma	1	-	1
Metastatic carcinoma	1	-	1
Connective Tissues	**10**	**3**	**13(9.9%)**
Rhabdomyosarcoma	2	3	5
Fibrosarcoma	4	-	4
Liposarcoma	1	-	1
Chondrosarcoma	1	-	1
Metastatic carcinoma	1	-	1
Non Hodgkin lymphoma	1	-	1
Mandible/ Jaw	**5**	**4**	**9(6.9%)**
Burkitt's lymphoma	2	2	4
Squamous cell carcinoma	1	1	2
Chondrosarcoma	1	-	1
Malignant haemangiopericytoma	1	-	1
Epidermoid carcinoma	-	1	1
Lymph Nodes	**4**	**5**	**9(6.9%)**
Lymphoma	4	2	6

Metastatic carcinoma	-	3	3
Thyroid Gland	**4**	**4**	**8(6.1%)**
Medullary carcinoma	3	2	5
Follicular carcinoma	1	2	3
Salivary glands	**5**	**2**	**7(5.3%)**
Adenoid cystic carcinoma	1	1	2
Acinic cell carcinoma	1		1
Terminal duct carcinoma	1	-	1
Malignant oncocytoma	-	1	1
Non Hodgkin lymphoma	1	-	1
Papillary carcinoma	1	-	1
Nose, sinuses,	**1**	**6**	**7(5.3%)**
Squamous cell carcinoma	1	6	7
Tongue	**2**	**2**	**4(3.1%)**
Squamous cell carcinoma	2	2	4
Larynx	**2**	**2**	**4(3.1%)**
Squamous cell carcinoma	2	2	4
Palate	**3**	**-**	**3(2.3%)**
Melanoma	1	-	1
Chondrosarcoma	1	-	1
Non Hodgkin lymphoma	1	-	1
Lips	**2**	**-**	**2(1.5%)**
Squamous cell carcinoma	1	-	1
Basal cell carcinoma	1	-	1
Grand Total	**77(58.8%)**	**54(41.2%)**	**131(100.0%)**