OUTCOME OF HEAD AND NECK CANCER PATIENTS MANAGED WITH CHEMORADIATION AT THE RADIOTHERAPY DEPARTMENT NATIONAL HOSPITAL, ABUJA (A FIVE-YEAR RETROSPECTIVE STUDY)

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ABSTRACT

Background: The term 'Head and Neck Cancer' usually refers to squamous cell carcinomas that affect the head and neck regions of the body. However, other histologies are also found in these regions.
Objective: This study assessed the outcome of head and neck cancer patients managed with chemoradiation.
Methods: A data extraction form was used to obtain sociodemographic and clinical variables from treatment records and case notes of patients with head and neck cancer treated from January 2017 to December 2022 at the radiotherapy department, National Hospital, Abuja. The outcome of chemo-radiation was analysed.
Results: A total of 384 cases with a mean age of 43.5 years, with 248 males (64.6%) and 136 females (35.4%). Nasopharyngeal cancer (NPC) was the commonest with 102 (26.6%) cases. At five years of follow-up, 109 (28.4%) patients died of the disease,152 (39.6%) patients were alive with the disease, 54 (14.1%) were disease-free, 69 (17.9%) were lost to follow-up, probably on account of either complication/side effects of treatment, financial constraint, disease progression, or unreported deaths.
Conclusion: Despite the late presentation, this study showed that there was improved survival in patients with head and neck cancer who had chemoradiation.
Keywords: head and neck cancers, outcome, chemoradiation, Nigeria

INTRODUCTION

Head and neck squamous cell cancer (HNSCC) accounts for approximately 800,000 cases and 400,000 deaths annually worldwide.[1] The standard of care for locally advanced disease of the oral cavity, oropharynx, hypopharynx, and larynx subsites is a multimodality treatment with permutations of radiation therapy (RT), chemotherapy (CT), and surgery, in function of tumour localisation. Although the term "head and neck cancers" is usually assumed to mean squamous cell carcinomas, most of them (> 90) are squamous cell carcinomas,[2] other histologic types exist, (e.g., Adenocarcinomas, Adenoid cystic carcinomas, Mucoepidermoid carcinomas, undifferentiated carcinomas).

Head and neck cancer (HNC) is divided into three clinical stages: early, locoregionally advanced and metastatic or recurrent. Advanced locoregional disease has a poor prognosis. It is estimated that approximately 50 to 60% of patients have local disease recurrence within 2 years and 20-30% of patients develop metastatic disease. These cancers tend to show similar response to the same combination of cytotoxic chemotherapeutic agents, e.g., cisplatin, docetaxel, carboplatin, adriamycin, cyclophosphamide, bleomycin, etoposide, 5-fluorouracil (5FU) and methotrexate.[3] Most patients in Nigeria and the less developed countries present at a late stage, often the terminal stage of the disease. Ignorance, poverty, patient consulting traditional healers and spiritual faith healers tend to contribute to needless delay. At this stage, the only option of treatment left is usually of palliative, rather than curative intent.[4] Even for those who present to a physician at a primary or secondary level of medical care, the period intervening between their presentation and referral for specialist oncology care is so long that the tumour inevitably becomes a metastatic one at presentation. The early symptoms do not produce functional limitations or cosmetic problems because they are usually vague and non-specific, so they are often ignored or not suspected. Sites like the larynx, pharynx and maxillary antrum are not readily visible or palpable, requiring examination under anaesthesia. Endoscopic examination of mucosal surfaces, imaging technique, multiple biopsies of suspected primary sites and histological diagnosis are some of the requirements for proper diagnosis. This study aims to review the outcome of chemoradiation in HNC patients, aiming to highlight the magnitude and challenges encountered in the management of patients with head and neck cancer in National Hospital, Abuja.

MATERIALS AND METHODS

The study was carried out in the Radiotherapy and Oncology Department of the National Hospital, Abuja (NHA). The National Hospital is in the central area of the Federal Capital Territory, Nigeria. The study population included outcomes of head and neck cancer patients managed at the Radiotherapy Department, NHA, from January 2017 to December 2022.

Inclusion Criteria

Patients with histopathology-confirmed head and neck cancer from a standard histopathology laboratory managed at the Radiotherapy Department of National Hospital, Abuja.

Exclusion Criteria

All patients whose tumour had not been histopathologically confirmed or suspected head and neck cancer cases without histologic diagnosis or with conflicting histologies.

Data Description and Method of Collection

All available radiotherapy case notes and treatment records cards of head and neck cancer patients seen from January 2017 to December 2022 were retrieved. Information obtained from radiotherapy case notes and treatment records included patients' bio-data, including age at presentation, sex, duration of symptoms, anatomical site, clinical staging, histopathological type grade, either as well differentiated (G1), moderately differentiated (G2), or poorly differentiated (G3). The patients were staged at the time of

presentation using the 2010 edition of the American Joint Committee on Cancer (AJCC). The details of treatment received were taken into consideration: chemoradiation, radiotherapy, type of surgery and chemotherapy. The status of patients was determined. The time of completion of treatment, time of first locoregional recurrence and/or metastasis after completion of treatment were also noted. The above information was extracted from records using a data extraction form.

Data Analysis

Clinical and treatment variables of patients were presented in tables, histogram and bar charts using frequencies and percentages. Independent variables included age, sex, stage of disease, clinical presentation, metastasis, histology, grade, modalities of treatment and outcome. The data obtained were analysed using the Statistical Package for Social Sciences version 20 (SPSS).

RESULTS

A total of 384 patient case records that met the selection criteria were retrieved and analysed. The age of head and neck cancer patients ranged between >1 and 90 years, with the mean age being 47.2±11.5 years. Two hundred and forty-eight patients (64.6%) presenting with head and neck cancer were men, and one hundred and thirty-six patients were women. (35.4%), (62.3%) had formal levels of education, while the rest had no formal levels of education (37.7%). Majority were married (70.8%) and employed (71.1%) at the time of presentation in the hospital. More than one-third of the patients were civil servants (41.8%). Head and neck cancer patients presenting at the clinic had a distribution that cut across the geographical zones in the country, with Southeast constituting the majority, 34.5%, and Northeast has the lowest with (4.7%).

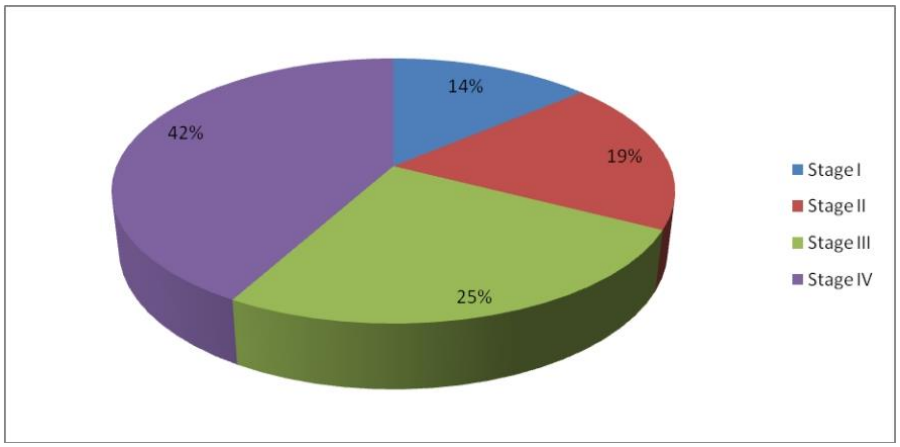

Figure 1: Stage of Disease at time of presentation

Table 1: Pattern of Clinical Presentation

Clinical features	Frequency	Percentage
Tumour pain	248	15.7
Neck mass	168	10.6
Headache	125	7.9
Nasal Obstruction	107	6.8
Nasal Discharge	95	6.0
Difficulty in Breathing	88	5.6
Dysphagia	79	5.0
Aural symptoms	78	4.9
Epistaxis	76	4.8
Loss of vision	72	4.6
Sore throat	65	4.1
Decreased hearing	53	3.4
Tinnitus	48	3.0
Hoarseness of voice	47	3.0
Ear pain	36	2.3
Trismus	36	2.3
Neurologic symptoms	35	2.2
Ulcer at primary site	35	2.2
Distant metastases	32	2.0
Leukocoria	28	1.8
Diplopia	14	0.9
Ear discharge	10	0.6
Strabismus	6	0.4
Total	**1581**	**100.0**

Table 2: Types of treatment modalities for the anatomical sites

No. of Patients	Primary tumour site	Chemoradiation %	Radiotherapy alone %	Chemotherapy alone %	Radiotherapy before Chemotherapy	Chemotherapy before Radiotherapy
102	Nasopharynx	75 (73.5)	10 (9.8)	8 (7.8)	7 (6.9)	2 (2.0)
52	Larynx	29 (55.8)	17 (32.7)	4 (7.7)	2 (3.8)	-
48	Sinonasal	26 (54.2)	13 (27.1)	2 (4.2)	6 (12.5)	1 (2.1)
46	Oral cavity	38 (82.6)	5 (10.9)	3 (6.5)	-	-
44	Orbit	11 (25.0)	24 (54.5)	6 (13.6)	-	3 (6.8)
32	Salivary	5 (15.6)	16 (50.0)	4 (12.5)	2 (6.3)	5 (15.6)
20	Oropharynx	16 (80.0)	1 (5.0)	-	3 (15.0)	-
19	Thyroid gland	-	11 (57.9)	3 (15.8)	5 (26.3)	-
21	Others	13 (61.9)	4 (19.0)	1 (4.8)	1 (4.8)	2 (9.5)

Total = 384

Table 3: Treatment outcome at five years of treatment to different anatomical sites

No. of Patients	Primary tumour site	Died of Disease %	Alive with Disease %	Disease-free %
102	Nasopharynx	32 (31.4)	49 (48.0)	21 (20.6)
52	Larynx	13 (25)	29 (55.8)	10 (19.2)
48	Sinonasal	14 (29.2)	30 (62.5)	4 (8.3)
46	Oral cavity	16 (34.8)	27 (58.7)	3 (6.5)
44	Orbit	15 (34.1)	23 (52.3)	6 (13.6)
32	Salivary	12 (37.5)	16 (50.0)	4 (12.5)
20	Oropharynx	13 (65.0)	7 (35.0)	-
19	Thyroid grand	6 (31.6)	13 (68.4)	-
21	Others	9 (42.9)	10 (47.6)	2 (9.5)

Total = 384

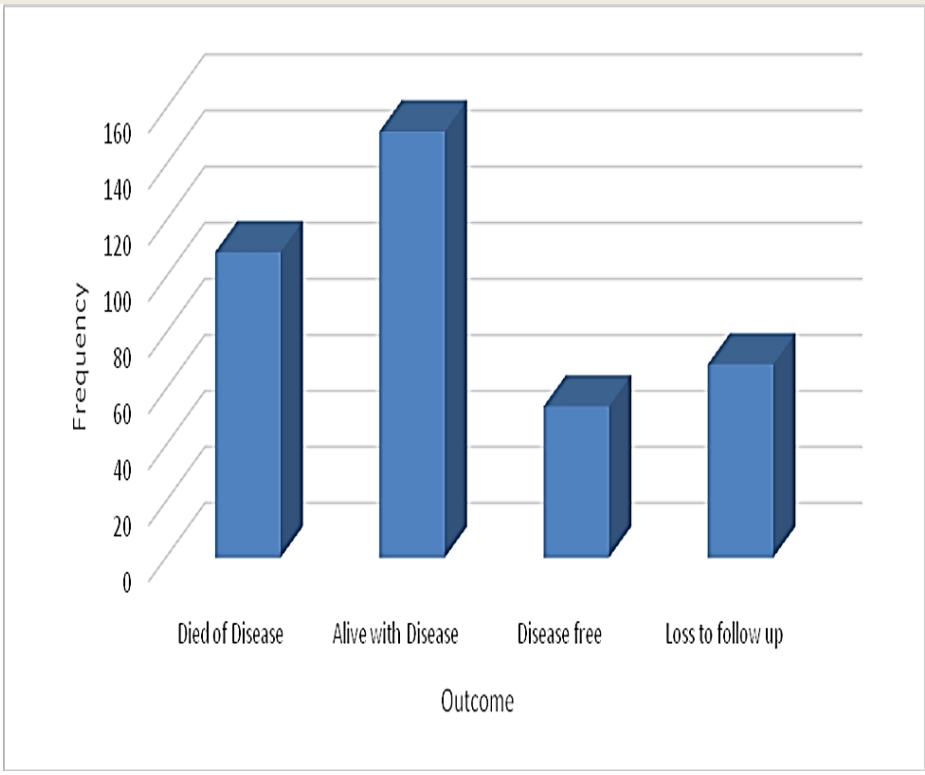

Figure 3: Overall survival at five years of Treatment

DISCUSSION

In this study, the mean age of head and neck cancer patients was 47.2±11.5 years, ranging from <1-90 years, with the peak age range at 41-50 years. There were only very few patients at the extremes, <1-10 and 80+ years. This is similar to a previous study by Aliyu et al.[5] These findings are contrary to studies done in the United Kingdom, which show an increasing incidence of Head and Neck cancers with age. [6,7] The relatively low cases seen within the first decade in this study reflect how seldom Paediatricians refer their patients for Radiotherapy in NHA.

The nasopharynx was found to be the commonest site, accounting for 102 (26.6%) of head and neck cancers. This is like other studies,[8,9,10] followed by Larynx (13.5%), and Oral cavity (12.0%). In this study, carcinoma of the lip was observed to have a 6:1 female to male ratio, which is contrary to reports in the literature review, where lip was 8:1 male to female ratio. Cancer of the ear was also observed to be few, which is similar to what was obtained in reports from Ibadan.[11,12,13]

In this study (0.4%) presented with lymphomas, both occurring in the nasopharynx. This is contrary to the findings in many centres in Nigeria, where lymphomas were the second most frequent cell type seen.[14,15] Sarcomas were the second most common histological type seen in this study, in agreement with Nwawolo et al in Lagos, Lilly-Tariah in Jos and Okoye et al in Port-Harcourt who also found sarcomas to be the second most occurring histologic type in their centres.[16,17]

Majority of the patients presented with late stage of the disease, stage IV 42% and stage III, 25%. Few patients (14%) presented with Stage 1 disease, and 19% stage II. These findings are similar to other studies in Nigeria, where late presentation was a common feature in most reports from different parts of the country.[18] Late presentation is a common feature of cancers in the developing parts of the world, for various reasons. One of them is that the early symptoms of cancer are rather vague and nonspecific.

Chemoradiation is the mainstay of treatment in most head and neck tumours. Chemotherapy can be used to downstage the disease in those with locally advanced disease. In this study, 57% of the patients received chemoradiation, 32% had radiotherapy alone, and 11% had chemotherapy alone. Adding concurrent chemotherapy to radiotherapy (chemoradiation) is now recognised to improve outcome in advanced head and neck cancer patients compared with once-daily radiotherapy alone and has become a standard approach for non-metastatic disease.

The commonest chemotherapy combination administered was Cisplatin/5FU.[19] 5FU was the most frequently employed single agent. Other chemotherapeutic agents given singly, as radiosensitizers, were Cisplatin and Gemcitabine. Several combination regimens have been developed to improve response rates.[20] The various cytotoxic regimens used for the patients are in concordance with recommended regimens from published literature.

Many of the patients had to be given supportive therapy in the form of analgesics and antibiotics for pain and various superimposed infections.

At six months' follow-up, 70% (269) of patients had complete response, 23% (89) had partial response, and 7% (26) of the patients had no response. Factors found to be associated with complete response in this study were early stage of disease, short duration of illness to presentation, SCC of the larynx, lymphomas, multi-modal treatment (combination of Platinum-based chemotherapy and RTH in particular) and RTH dose of 60 Gy in 30 fractions over 6 weeks. On the contrary, the most important factors for partial or no response were advancement of the disease stage at the time of presentation and long RTH treatment gaps. This posed a great challenge for recurrence, metastases and the employment of palliative measures as the intent of treatment.

At Second year of follow-up, 127 patients (48.7%) had recurrence, 81 patients (31.0%) developed distant metastases and 53 (20.3%) had recurrence and metastases, 181 (47.1%) were alive with the disease, 84 (21.9%) died of the disease, and 74 (19.3%) were documented to have remained disease free as of the end of the 2 years follow-up. Forty-five (11.7%) patients were lost to follow-up.

At five years of follow up 109 (28.4%) patients died of the disease, 152 (39.6%) patients were alive with the disease, 54 (14.1%) were disease free, 69 (17.9%) were lost to follow up probably on account of either complications/side effects of treatment, financial constraints, disease progression, unreported deaths or the seldom incomplete documentation in the patients' records.

Survival of patients also depends on treatment modalities and outcomes.[21] This study showed that there was improved survival in patients with head and neck cancer who had chemoradiation. This is like findings by Adenipekun et al, [22] and other studies reported in the literature review.[23]

CONCLUSION

The burden of managing HNC is enormous. Annually, more than 10 million persons are diagnosed with cancer, and more than half of these persons are in the developing world.[24] The diagnosis of HNC is capital-intensive; it involves planning, quality control programme, training of manpower and putting in place the necessary infrastructures by the government.

RECOMMENDATIONS

Head and neck cancers are not uncommon in Nigeria. Reports from centres across the country showed that cancers of the nasopharynx, oral cavity and larynx are the most frequently seen. Most patients present late at diagnosis and treatment, and subsequently prognosis of HNC in our environment is poor. The WHO reported that a third of all cancers are preventable, and therefore:

1. Prevention programmes targeted at reducing the incidence of cancers should be given a priority by the appropriate authority.
2. There must be an effective National Cancer Registry. Without the statistics on HNC, it will be impossible to plan meaningfully.
3. There should be a policy on training more head and neck surgeons, pathologists, radiation oncologists, clinical therapist and other support staff. The challenges of HNC are enormous; the governments at various levels must take active part in intensive public enlightenment campaign aimed at reducing the incidence and burden of head and neck cancers.

DECLARATIONS

Conflict of Interest: The authors declared no conflict of interest.

Ethics Committee Approval: The study was approved by the National Hospital. Abuja, Nigeria Research Ethics Committee (no: NHA/EC/047/2015 date: 3/9/2015)

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