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Clinico-Social Profile of Patients with Head and Neck Cancers Attending Radiotherapy OPD: An Indian Perspective

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Abstract
Head and neck cancer is one of the most common cancer in India. Radiotherapy with or without chemotherapy is the most important treatment modality. Socio-demographic and clinical profile as well as treatment outcome of the study subjects were obtained from the records. They were analyzed and results are mentioned with the help of tables and diagrams. Most of the head and neck cancer patients were of the age 50-60 years. Most of the patients had locally advanced carcinoma with mostly well-differentiated histo-pathology. Most of the patients received radiotherapy with or without chemotherapy while some also underwent surgery. External beam radiotherapy was the most common used. More than half of the patients received chemotherapy. Most of the patients completed their treatment though some were lost to follow-up. Most of our results were in concordance with other international findings. Thus most of head and neck cancer patients are middle-aged male with locally advanced well differentiated carcinoma receiving radiotherapy with or without chemotherapy.
Keywords: *Head and neck carcinoma, Locally advanced, Radiotherapy, Chemotherapy.*

Background and Relevance

Head & Neck cancers are common in several regions of the world where tobacco use and alcohol consumption is high. [(1)].World-wide, the head and neck cancers form the sixth most common cancer. According to world Health Organization (WHO), worldwide incidence of Head and Neck cancer is 5.1% in male and 2.3 % in females with overall incidence of 3.7 %. [(2),(3)]

Risk factors for developing squamous cell carcinoma in Head & Neck region are mostly tobacco ,alcohol ,betel quid, radiation exposure and Ebstein Barr Viruses (EBV virus). [(4)]

Symptoms and signs of Head & Neck cancers include neck masses, sore throat, dysphagia, dysphonia, ear-ache [(5)]

In India, Head and neck carcinoma represents the most common carcinoma in males and fifth most

common in females. [2], [3] The Head &Neck cancers are divided according to their place of occurrence like oral cavity, pharynx, larynx, Para Nasal Sinuses, nasal cavity and salivary glands. In India, oral cavity is the predominant site. [2]

Conventionally radiotherapy (RT) alone was the standard nonsurgical therapy for locally advanced disease. [6] Data from the Meta-Analysis of Chemotherapy in Head and Neck Cancer (MACH-NC) illustrates that the major therapeutic benefit of platinum-based chemotherapy found, when the drugs are given concurrently with radiotherapy. No significant improvement occurs with induction chemotherapy followed by radiotherapy. [7]

Most T3 and T4 primary cancers require combinations of surgery and RT. Although preoperative irradiation may reduce the tumor size and theoretically facilitate the surgery, postoperative irradiation is nearly always preferable because the extent of tumor has been determined and tissue healing is less impaired. If resection is not possible, high-dose RT may still be effective and adjuvant chemotherapy may be useful.[3],[4],[6]

The current study was conducted with an aim to determine the clinico-social profile and outcomes of patient suffering from head and neck cancers among the patients attending a tertiary care OPD of Kolkata.

Methodology

A record-based descriptive study was conducted at the Radiotherapy Department of a tertiary care hospital during the months of March &April, 2017. Several patient records obtained in the said department were reviewed by census method based on pre-decided inclusion and exclusion criteria. Records of patients attending Radiotherapy OPD of the tertiary care hospital from 1st January, 2012 with histologically proven head and neck carcinoma (HNC) were considered. However previously irradiated patients for other malignancy/other reason, patients with nasopharyngeal and salivary gland tumors, primary melanoma, metastases from other area(s) and patients who attended the OPD after 31st December 2016 were excluded from this study. According to those criteria, 119 records were considered. But 19 of these records had incomplete treatment details hence excluded from the study. Data was collected and compiled from the remaining 100 records maintaining the confidentiality regarding patient identity. Data was collected and compiled in Microsoft Excel (Ver. 2007) regarding different socio-demographic variables, variables related to general clinical profile, radiotherapy and chemotherapy related variables decided beforehand. The collected data was compiled & analysed with EpiInfo 7 software and in SPSS software, version 16.

Results

From the reviewed 100 records, it was observed that mean age of the patients was 56.3 years (SD 13.02 years), with minimum age being 27 years and Maximum 83 years. 80% of them were male, majority (72%) were Hindu by religion. (Figures 1, 2 & 3)

Majority (61%) presented with locally advanced carcinoma, while 5% had advanced carcinoma with rest having local presentation. 91.3% did not have any metastasis while presenting to the OPD. However as per stages of their disease, 32.6% were having grade IV, 30.4% grade III, 25.0% grade II and 11.0% grade I carcinoma. Hypertension was the major co-morbidity identified (44%) followed by diabetes mellitus (26%). (Table 1)

Most of the local cancers were observed after 50 years (24.0%), locally advanced 41-70 years (46.0%) while the advanced stage cancer were almost equally distributed. (Table 2)

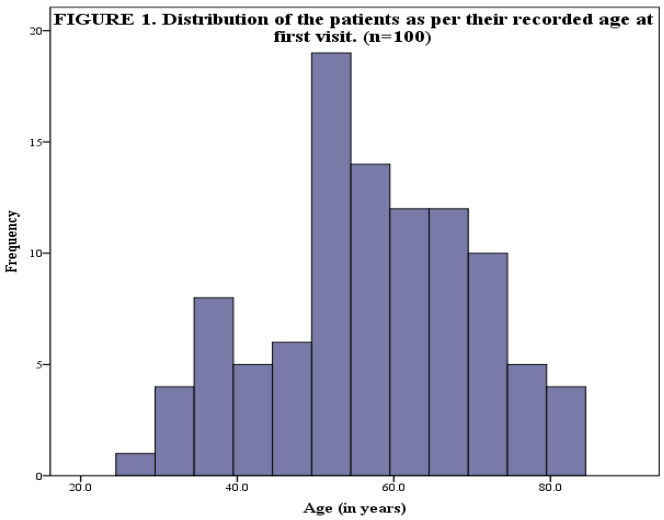
40.0% of the patients underwent surgery, with most of them being local head and neck cancer (21.0%) mostly with curative intent (72.5%). Only one patient with advanced cancer had palliative surgery. Histopathologically mainly squamous cell carcinomas were recorded (95%). 56.8% of the patients had well differentiated carcinoma, while 32.6% had poorly differentiated variety.

Confirmation of malignancy was done in majority of the cases by biopsy alone (77.6%).

80% of the patients received radiation therapy while 54% received chemotherapy. 29% of the patients did not receive either of radiation or chemo-therapy; while 51% received both. Most of the local (30.0%) and locally advanced (49.0%) patients received RT. Increased age was not a hindrance to RT as 86.1 % of patients over 60 years (50 out of 65 patients) received RT. Among the patients who received radiation therapy 91.25% had curative therapy while rest had palliative. Majority of the local (93.3%) and locally advanced (91.8%) carcinoma received RT with curative intent while the advanced case received RT for palliation. All of them received EBRT, while 3 patients had received brachy-therapy (2 before EBRT & 1 after; 2 received ISRT). Major proportion of the patients (96.25%) had conventional EBRT with only 1 patient (1.2%) had hyper fractionated & 3 patients (3.6%) had hypo fractionated EBRT. (Table 3)

Among those who received chemotherapy 87.1% received it with curative intent. Majority completed their course of chemotherapy (75.9%). Most of the local (67.6%)and locally advanced cancer received chemotherapy(51.6%) received chemotherapy mainly with curative intent. Patients mainly received concurrent (40.7%) and neo adjuvant (27.8%) chemotherapy. GCSF was given to 20.4% of those who had/having chemotherapy. According to age chemotherapy was given to almost all age group. (Table 3)

Most of the patients completed their treatment (69.0%) with most common cause of non-completion being no follow-up (19 patients) while 7 patients has died and 4 were not given any active interventions. (Table 3)



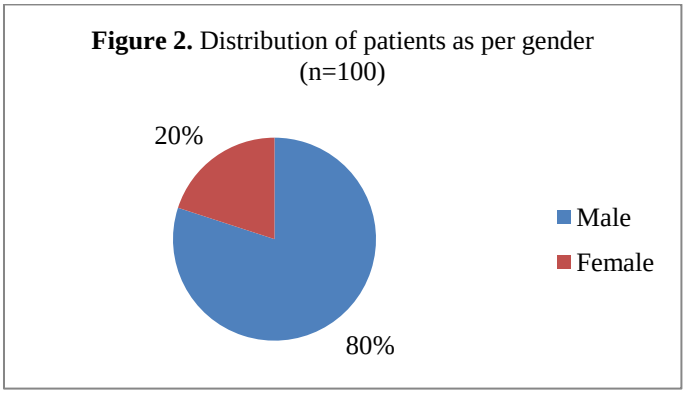


Figure 2. Distribution of patients as per gender (n=100)

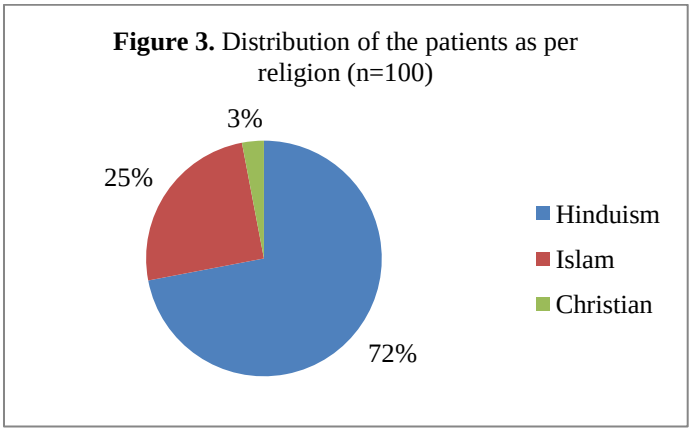


Figure 3. Distribution of the patients as per religion (n=100)

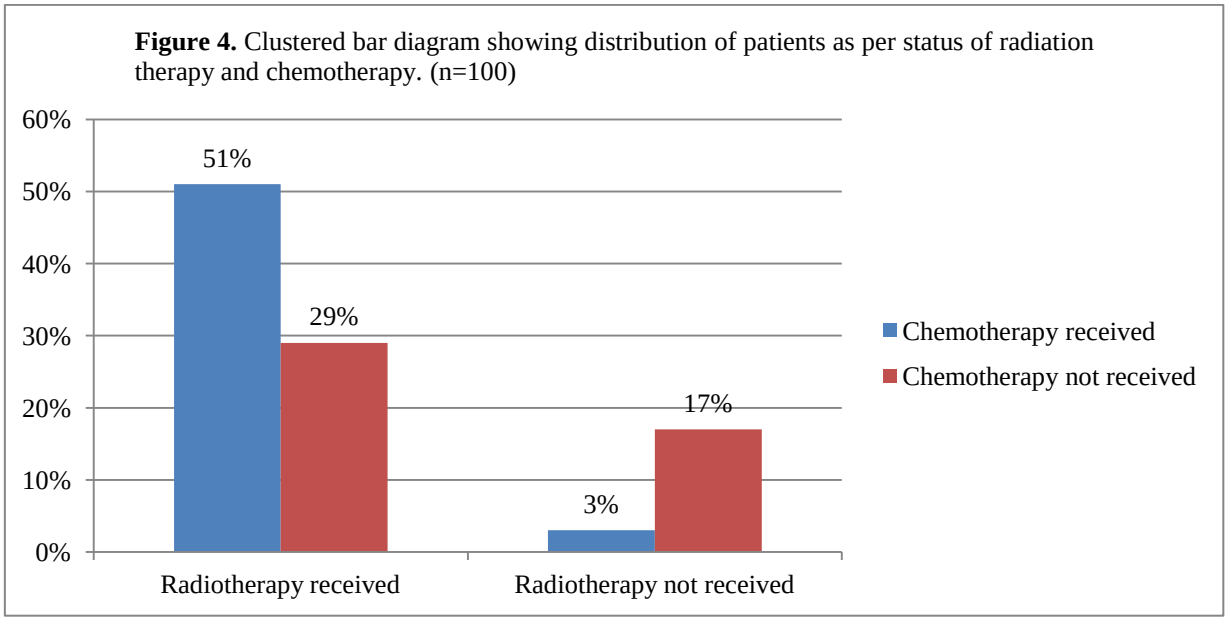


Figure 4. Clustered bar diagram showing distribution of patients as per status of radiation therapy and chemotherapy. (n=100)

Table 1. Clinical parameters of the patients with head and neck carcinoma**.**

VARIABLE	CATEGORIES	FREQUENCY	PERCENTAGE
STATUS OF METASTASIS (N=92)	Present	8	8.7
	Absent	84	91.3
STAGE OF CARCINOMA(N=92)	I	11	12
	II	23	25
	III	28	30.4
	IV	30	32.6
COMORBIDITIES (MULTIPLE RESPONSE) (N=100)	Diabetes mellitus	26	26
	Hypertension	44	44
	IHD	5	5
	COPD	3	3
CONFIRMATION OF MALIGNANCY BY (N=98)	Biopsy	76	77.6
	FNAC	1	1.0
	Surgical specimen HPE	19	19.4
	All of the above	2	2.0
HISTOPATHOLOGY OF MALIGNANCY	SCC	95	95
	Others	5	5
GRADE OF MALIGNANCY (N=95)	Well Differentiated	54	56.8
	Moderately Differentiated	31	32.6
	Poorly Differentiated	7	7.4
	Undifferentiated	3	3.2

Table 2. Distribution of patients as per their age in relation to stage of their carcinoma, provision of radio-therapy and chemotherapy. (n=100)

AGE (IN YEARS)	STAGE			RADIO-THERAPY		CHEMO-THERAPY		TOTAL
	Local	Locally advanced	Advanced	Yes	No	Yes	No	
<30	2 (2.0%)	0 (0.0%)	1 (1.0%)	3 (3.0%)	0 (0.0%)	2 (2.0%)	1 (1.0%)	3 (3.0%)
31-40	5 (5.0%)	8 (8.0%)	1 (1.0%)	12 (12.0%)	2 (2.0%)	8 (8.0%)	6 (6.0%)	14 (14.0%)
41-50	3 (3.0%)	14 (14.0%)	1 (1.0%)	15 (15.0%)	3 (3.0%)	12 (12.0%)	6 (6.0%)	18 (18.0%)
51-60	10 (10.0%)	18 (18.0%)	1 (1.0%)	19 (19.0%)	10 (10.0%)	12 (12.0%	17 (17.0%)	29 (29.0%)
61-70	6 (6.0%)	14 (14.0%)	0 (0.0%)	17 (17.0%)	3 (3.0%)	10 (10.0%)	10 (10.0%)	20 (20.0%)
>70	8 (8.0%)	7 (7.0%)	1 (1.0%)	14 (14.0%)	2 (2.0%)	10 (10.0%)	6 (6.0%)	16 (16.0%)
TOTAL	34 (34.0%)	61 (61.0%)	5 (5.0%)	80 (80.0%)	20 (20.0%)	54 (54.0%)	46 (46.0%)	100 (100.0%)

Table 3. Distribution of patients with respect to stages of their carcinoma as per different variables related to surgery, radio-therapy and chemotherapy.

Sl. No.	VARIABLE	CATEGORY OF THE VARIABLE	STAGE			
			Local	Locally advanced	Advanced	Total
1.	SURGERY (N=100)	Done	21 (21.0%)	18 (18.0%)	1 (1.0%)	40 (40.0%)
		Not done	13 (13.0%)	43 (43.0%)	4 (4.0%)	60 (60.0%)
		Total	34 (34.0%)	61 (61.0%)	5 (5.0%)	100 (100.0%)
2.	INTENT OF SURGERY (N=40)	Curative	19 (47.5%)	10 (25.0%)	0 (0.0%)	29 (72.5%)
		Palliative	2 (5.0%)	8 (20.0%)	1 (2.5%)	11 (27.5%)
		Total	21 (52.5%)	18 (45.0%)	1 (2.5%)	40 (100.0%)
3.	RADIO-THERAPY (N=100)	Given	30 (30.0%)	49 (49.0%)	1 (1.0%)	80 (80.0%)
		Not given	4 (4.0%)	12 (12.0%)	4 (4.0%)	20 (20.0%)
		Total	34 (34.0%)	61 (61.0%)	5 (5.0%)	100 (100.0%)
4.	INTENT OF RADIO-THERAPY (N=80)	Curative	28 (35.0%)	45 (56.25%)	0 (0.0%)	73 (91.25%)
		Palliative	2 (2.5%)	4 (5.0%)	1 (1.25%)	7 (8.75%)
		Total	30 (37.5%)	49 (61.25%)	1 (1.25%)	80 (100.0%)
5.	CHEMO-THERAPY (N=100)	Given	23 (23.0%)	31 (31.0%)	0 (0.0%)	54 (54.0%)
		Not given	11 (11.0%)	30 (30.0%)	5 (5.0%)	46 (46.0%)
		Total	34 (34.0%)	61 (61.0%)	5 (5.0%)	100 (100.0%)
6.	INTENT OF CHEMO-THERAPY (N=54)	Curative	22 (40.7%)	25 (46.3%)	0 (0.0%)	47 (87.0%)
		Palliative	1 (1.9%)	6 (11.1%)	0 (0.0%)	7 (13.0%)
		Total	23 (42.6%)	31 (57.4%)	0 (0.0%)	54 (100.0%)
7.	WHY TREATMENT ENDED (N=100) (*4 patients still undergoing oral geftinib)	Completed	26 (26.0%)	42 (42.0%)	1 (1.0%)	69 (69.0%)
		No follow-up	5 (5.0%)	14 (14.0%)	0 (0.0%)	19 (19.0%)
		Death	3 (3.0%)	3 (3.0%)	1 (1.0%)	7 (7.0%)
		Clinically unfit	0 (0.0%)	2 (2.0%)	3 (3.0%)	5 (5.0%)
		Total	34 (34.0%)	61 (61.0%)	5 (5.0%)	100 (100.0%)

Discussion

In most countries including India the incidence is low in people below the age of 45 [8]. Of the urban female population 1.6% will develop head and neck cancer in their life span; out of this 0.13% belong to the younger age group. 2% of the rural male population will develop head and neck cancer in their life span; out of this 0.2 % belongs to 20-44 years age group. Of the rural female population 0.3% will develop head and neck cancer in their life span; out of this 0.1 % belong to the younger age group[9]. In our study also we found that only one patient below 30 years developed head and neck cancer and 12 patients from 30 to 40 years. Median age in standard studies are usually between 50-60 years (55 years-10). In our study, median age 56 years.

Among young adults, the male: female ratio in urban population was 1.5:1 and in rural population it was 3:1. In contrast in patients over 45 years old the male:female ratio was 2.5:1 in the urban and 6:1 in the rural community. [9] Also in our study, M:F ratio of 4:1.Male dominance(71.5%)[11] was seen in another study.

According to the standard studies, our patients have similar presentation with stages. Most are local to locally advanced (Bernier *et al.*- local: 30%, locally advanced :53% Gugic *et al***:** local: 29% locally advanced: 52%). In our study we found similar findings.

Bernier *et al.* showed that most were well-differentiated (41%), followed by moderatedly differentiated (39%). in our study all well- difer-entiated (56.8%) and moderatedly differentiated (32.6%) [10]

Over the years it has been found out that radiotherapy is the gold standard of treatment in various studies.[12] In our studies 80% of the patient received radiotherapy.

In several studies, age alone was found to be an important factor for treatment selection. When compared with the younger population with

HNSCC, it was observed that elderly patients are less likely to receive standard or curative treatment. As reported by Derks., after subdividing the elderly group into two sets (aged 70–79 years and ≥80 years), the proportions of patients receiving standard treatment in the 45–60 years group and the other two groups were 89%, 75% and 36%, respectively, whereas no treatment was given to 4%, 13% and 18% of cases from the respective groups.[12] Age itself was listed specifically as a reason for not undergoing the indicated therapy (surgery, RT or ChT) in the study by Italiano et al. To continue, according to Ortholan et al., as much as 59% of 200 patients aged ≥80 years and treated with curative intent (surgery and/or RT) received aged-adapted curative treatment. In our Study though a large population of the older people received RT, a higher percentage 44.4% of above 60 years patient did not receive chemotherapy.[12]

After surgery with curative intent, adjuvant treatment with high-dose cisplatin plus radiotherapy is more efficacious than radiotherapy alone in patients with squamous-cell carcinoma of the head and neck with unfavorable clinical or pathological factors or both. The addition of chemotherapy to radiotherapy significantly increased the rates of local control, disease-specific survival, and overall survival, without high incidence of late adverse effects. The effect of the postoperative administration of concurrent chemotherapy and radiotherapy on outcome is likely to be influenced by the criteria used to select patients.

It was conclusively described in this study that most of head and neck cancer patients were middle-aged male. It was also evident that majority of them presented with locally advanced well differentiated carcinoma. Most of them received radiotherapy alone or with chemotherapy. However, some of the patients did not receive either.

The present study was a record- based study. Depending on the results, a longitudinal study can be undertaken in future primarily focussing on the treatment outcomes and survival pattern.

Conflict Of Interest: Nil

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