



## CARCINOMA HYPOPHARYNX- EPIDEMIOLOGICAL FACTORS AND DISEASE OUTCOMES-OUR INSTITUTIONAL EXPERIENCE

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### ABSTRACT

**Aim:** To assess the Carcinoma Hypopharynx (CH)- epidemiological factors and disease outcomes-our institutional experience. **Methods:** A retrospective study was conducted from the electronic medical data of 35 carcinoma hypopharynx in the Bernard Institute of Radiation Oncology, RGGGH, Chennai, India, between June 2024 and December 2024. **Results:** Out of 35 studied carcinoma hypopharynx patients, males (54.3%) were higher, patients aged 61-70 years (37.1%) were higher, Squamous cell carcinoma (SCC) was higher histo-pathological tumors (91.4%), and lifestyle risk factors such as smoking (51.4%) and alcohol use (37.1%) were associated with complications of CH. Among the study patient's T-stage tumors T3 (62.9%) were higher, followed by T2 and T4, each accounting for 17.1% respectively. Among the N-stage tumors, the N0 category (34.3%), which indicates no regional lymph node metastasis, was higher, 34.3%, N2c (22.9%), and N3 b (20%) were found in the N-stage of the tumors. In only 8.6% of cases, patients received a Stage II diagnosis. Most were identified in late stages, including Stage IVB (25.7%), Stage III (34.3%), and Stage IVA (31.4%). This indicates that hypopharyngeal cancer was diagnosed in a late stage in about 91.4% of cases. Treatment-related toxicities were associated with radiotherapy modalities; 3DCRT was associated with gastrointestinal toxicities (81.5%, p-0.001), whereas IMRT was associated with Mucositis toxicities. Importantly, anemia (48.1%) was found exclusively associated with 3DCRT, and was not associated with IMRT (0%) (p-0.032). **Conclusions:** This research study concludes and is strongly supported by the documentation of epidemiological trends and comparative treatment toxicity profiles. The hypopharyngeal cancer requires a move toward advanced radiation techniques like IMRT in the treatment of hypopharyngeal carcinoma. This shift will enhance and improve patient compliance and long-term outcomes in addition to improving tolerability. A sizable percentage of patients showed prolonged survival for more than a year, despite the aggressive nature of the illness, the advanced stage at diagnosis, and hence we recommend therapeutic benefit of improved radiation treatments and early intervention will prolong survival, even in a situation with limited resources can bring good quality of life in patients with hypopharyngeal carcinoma.

**KEYWORDS :** Hypopharyngeal Carcinoma (HC), Radiation Treatment Toxicity, Gastrointestinal Toxicity, T stage (cT), N stage (cN), Intensity-Modulated Radiation Therapy (IMRT), CT-3D Conformal Radiation Therapy (3DCRT)

### INTRODUCTION

**Hypopharyngeal Carcinoma (HC)** is a cancer that begins in the hypopharynx, the lower region of the pharynx (throat). It is relatively uncommon, accounting for only 3% of all head and neck malignancies. Most hypopharyngeal malignancies are squamous cell carcinomas, which means they begin in the flat cells that line the hypopharynx [1]. The **Global Burden of Disease** research predicted that **890,000** new head and neck cancers (HNCs) were diagnosed worldwide in 2017, accounting for 5.3% of all malignancies (excluding nonmelanoma skin cancers) [2].

Hypopharyngeal carcinoma (HC) makes up roughly **15% of all HNCs** and has a **poor prognosis**. HC is a highly aggressive cancer with submucosal tumor spread, perineural and vascular invasion, increased risk of lymph node involvement, and metastasis [3].

The incidence of nasopharyngeal cancers decreased [annual percentage change (EAPC) 1.52, 95% confidence interval (CI) 1.70 to 1.34], but the incidence of other pharyngeal cancers increased (EAPC 0.62, 95% CI 0.54-0.71). The incidence of LOC cancers increased (EAPC 0.26, 95% CI 0.16-0.37), but with notable variations. East Asia had the highest EAPC, while men in high-sociodemographic-level countries experienced a decrease. Women had a higher EAPC than men, and those aged 15-49 had a higher EAPC than those aged 50-69. The incidence of laryngeal carcinoma has decreased [4].

Concerns about applicability were highest when 10% or more of the population had T4 malignancies or a clinically positive neck. Worries about the applicability of SLNB procedures

were raised when less than three peritumoral tracer injections were used, no preoperative SLN localization was performed (planar lymphoscintigraphy or **SPECT/CT**), and the histopathological examination of SLNs did not include serial step sectioning and immunohistochemistry [5].

Furthermore, **Henry T. Hoffman** et al. demonstrated that five-year disease-specific survival rose by 63.1% (**stage I**), 67.6% (**stage II**), 41.8% (**stage III**), and 22% (**stage IV**) [6].

However, the bulk of trials evaluating the feasibility of SND in clinically node-positive neck (cN+) patients have been conducted in patients with early "T stage" malignancies or tumors with a solitary node in the higher neck levels. We wanted to see if any subset of advanced oral cancer (T3/T4) patients with cN+ were suitable candidates for SND by retrospectively analyzing the pathological lymph node distribution in the neck and identifying any preoperative clinical, pathological, and demographic factors that could predict metastases to levels IV or V [7].

Medical documents were used to collect baseline clinical and histopathological data, including age, **smoking**, **alcohol consumption**, pathologic grade, white blood cell count, platelet count, neutrophil count, lymphocyte count, monocyte count, **neutrophil-to-lymphocyte ratio (NLR)**, platelet-to-lymphocyte ratio (PLR), **lymphocyte-to-monocyte ratio (LMR)**, **clinical T stage (cT)**, **clinical N stage (cN)**, and therapy modality. Patient MRI data were obtained via the Picture Archiving and Communication System. TNM staging was determined using the **American Joint Committee on Cancer TNM Staging System Manual, 8th Edition** [8].

Acute radiation-induced toxicities were reported and classified using the CTCAE version 5. The 3DCRT arm experienced greater grade 3 toxicities (dermatitis, oral mucositis, dysphagia, xerostomia, and nausea/vomiting) compared to the IMRT group. Rate of Grade 3 oral mucositis, dysphagia, and xerostomia [9].

**Radical surgery** with complete Laryngectomy remains an essential therapy option for patients with hypopharyngeal cancer, either as the primary modality (T4 resectable primary tumor, contraindication to larynx preservation therapies) or, more typically, as salvage treatment. Although 5-year OS rates range from 60 to 70%, they are lower than those for early-stage malignancies in other head and neck subsites [10].

IMRT has lower toxicity than traditional 2D/3D-RT and does not influence oncological outcomes for oropharyngeal cancer. In patients with clinically advanced oropharyngeal carcinoma (OPC), IMRT may deliver comparable clinical outcomes with less associated toxicity than standard 2D/3D RT. When compared to 2D/3DCRT, IMRT improved the therapeutic index while reducing toxicity without compromising clinical outcomes [11].

The effectiveness of IMRT in patients with laryngeal and hypopharyngeal squamous cell carcinoma (LHSCC) in terms of outcome and treatment-related toxicity in comparison to 3D-CRT. The median follow-up period was 35 months (range 32–42 months; 95% confidence interval 95%). **IMRT had significantly lower rates of severe late toxicities than 3D-CRT**, including xerostomia (0 vs. 12%;  $p < 0.0001$ ), dysphagia (4 vs. 26%;  $p < 0.0001$ ), and feeding-tube reliance (1 vs. 13%;  $p = 0.0044$ ). The incidences of overall grade  $\geq 3$  late toxicities for the IMRT and 3D-CRT groups were 4.1 and 41.4%, respectively ( $p < 0.0001$ ). IMRT for laryngeal and hypopharyngeal cancer reduces late dysphagia while maintaining tumour control and prognosis [12].

**Hypopharyngeal carcinoma** is associated with **poor additive lifestyle** also and **smoking** and **alcohol** intake are consistently linked to an increased risk of hypopharyngeal carcinoma. The risk of laryngeal and hypopharyngeal cancer rose with tobacco (duration and amount) and alcohol usage; both agents had a multiplicative effect. From the lowest to the greatest level of intake, odds ratios among regular drinkers varied from 1.4 to 5.9, and among current smokers from 3 to 44. **Alcohol, tobacco, betel quid, and oral hygiene have all been linked to an increased risk of hypopharyngeal cancer**, and alcohol may play a larger role [13].

The **above literature specifically pinpoints that overall survival for hypopharyngeal cancer is low**, even in the early stages, where adding chemotherapy to radiation has no substantial effect on the hazard ratio of death. Hypopharyngeal cancer may have a **worse prognosis** than laryngeal cancer; hence, treatment techniques may differ. Treatment modality had no significant impact on the **hazard ratio of mortality for clinical T1-T2**. Previous research frequently implies that primary surgery yields similarly poor results. HC treatment is very difficult, frequently multimodal, and necessitates multidisciplinary collaboration, which is best accomplished in specialized head and neck cancer institutes; hence, this present study aims to analyse retrospectively the clinicopathological and demographic characteristics of hypopharyngeal cancer patients, as well as their outcomes and toxicities when treated with intensity modulated radiation rather than 3DCRT.

#### Ethical Clearance

As this present research study is a retrospective study based on the electronic data of the study patients, ethical clearance was not required. However, this current study is conducted under the supervision of the Head of the Radiation Department.

**Conflicts-None**

**Funding-None**

#### Inclusion Criteria

Patients with Carcinoma Hypopharynx.

#### Exclusion Criteria

Patients with NOT Carcinoma Hypopharynx.

### MATERIALS AND METHODS

#### Methodology

##### Study Design And Setting

This retrospective investigation was undertaken at the Bernard Institute of Radiation Oncology, RGGGH, Chennai, India.

##### Study Duration And Participants

To conduct this research study, electronic medical data from 35 carcinoma hypopharynx patients were collected after exclusion and inclusion criteria between June 2024 and December 2024.

#### Study Variables

##### Carcinoma Hypopharynx-Histopathological Examination

The histopathological evaluation of hypopharyngeal carcinoma involves examining tissue samples under a microscope to identify the type and characteristics of malignant cells [14].

##### Stages Of Carcinoma Hypopharynx

The stages of hypopharyngeal cancer range from Stage I (cancer in your lower throat that has not spread) to Stage IV (A & B) (cancer that has spread to other areas of your throat and mouth, your nasopharynx and the base of your skull, as well as more distant portions of your body such as the lining of your chest cavity) [15].

##### Carcinoma Hypopharynx-T Stage

The T-stage in hypopharyngeal carcinoma refers to the size and spread of the initial tumor. It ranges from T1 (a tiny tumor localized to one subsite) to T4, which suggests a bigger tumor with involvement of nearby structures or significant growth and dissemination [16].

##### Carcinoma Hypopharynx-N Stage

N-Denotes whether the malignancy has progressed to the lymph nodes. T1, T2, T3, T4A, and T4B [17].

#### Dermatitis

Dermatitis is a general name for a group of skin disorders characterized by inflammation, which can cause a variety of symptoms such as itching, redness, dryness, and, in some cases, blistering or cracking [18].

#### Mucositis

Mucositis is a painful inflammation of the mucous membranes that the digestive tract, which is frequently triggered by cancer therapies such as chemotherapy or radiation [19].

#### Anemia

Anemia is a disorder in which the blood's ability to transport oxygen is decreased, typically due to a low number of red blood cells or a hemoglobin deficit [20].

#### Treatment Modality

##### CT-3D Conformal Radiation Therapy (3DCRT)

Three-Dimensional Conformal Radiation Therapy (3D CRT) is an exact external beam radiation therapy that minimizes exposure to healthy tissue while giving a targeted dose by shaping radiation beams to the contour of a tumor using 3D imaging [21].

##### Intensity-Modulated Radiation Therapy (IMRT)

By accurately administering high doses of radiation to the tumor while reducing radiation to nearby healthy tissues, intensity-modulated radiation therapy, or IMRT, is a cutting-edge form of radiation therapy used to treat cancer [22].

**History of Patients' Social Habits**

A detailed patient history involves a study of the patient's past medical history as well as social habits such as **alcohol** and **smoking**.

**Study Procedure**

From the electronic medical record, the data of 35 carcinoma hypopharynx patients were collected and recorded. The data collected are age, gender, stages of Carcinoma Hypopharynx (I, II, III, IV (A & B), T-stage, N-stage, stages of Dermatitis, stages of Mucositis, Haemoglobin status, habitual history, treatment modality such as 3DCRT and IMRT, and blood investigation for toxicity due to treatment.

Before beginning treatment, a multidisciplinary tumor board reviewed all 35 patients. All patients received final radiation at a dose of 66Gy divided into 33 fractions of 2Gy each, as well as cisplatin treatment five days a week. However, ten patients did not get chemotherapy, and one patient received only one round of chemotherapy, with the following treatments postponed due to poor overall health. Radiation therapy was administered by the Varian Truebeam Linear accelerator, with either 3D conformal radiation therapy or intensity modulated radiation. The patients were immobilized in supine posture with a thermoplastic head-and-neck mask and arms at their sides.

Each patient underwent a computed tomography scan from the vertex to the carina, with slice thicknesses of 5mm and 3mm in patients treated with 3DCRT and IMRT, respectively. The Varian Eclipse treatment planning system was utilized to create the plans. Weekly blood tests were performed, and the patients were monitored for toxicity throughout the treatment. After 6 weeks of treatment, clinical response was examined by videolaryngoscopy and contrast-enhanced CT. All of the patients had routine monthly follow-ups. The defaulters' status was confirmed through phone calls. If there is no response to the phone after two efforts separated by a week, the patient is considered lost to follow-up.

**Data Collection**

From the 35-research study patients, the data such as history of histopathological examination of carcinoma hypopharynx, stages of carcinoma hypopharynx, carcinoma hypopharynx-T stage, carcinoma hypopharynx-N Stage, dermatitis, mucositis, anemia, CT-3DCRT, IMRT, and history of patients' social habits were collected and recorded.

**Analysis**

The obtained and recorded data from the electronic records of the 35 study patients were examined. Data such as the history of histopathological examination of carcinoma hypopharynx, stages of carcinoma hypopharynx, carcinoma hypopharynx-T stage, carcinoma hypopharynx-N stage, dermatitis, mucositis, anemia, CT-3DCRT, IMRT, and a history of patients' social habits were collected, recorded, analyzed, plotted, and tabulated in the result sections.

**Statistical Analysis Of Data**

The data were reported as frequency and percentage. Categorical variables were compared using the Pearson Chi-squared test. A two-tailed test was used to determine significance, with P-values less than 0.05. Kaplan-Meier curves were used to analyze survival. Overall survival was assessed from the date of diagnosis to the date of death from any cause. All statistical analyses were performed with IBM-SPSS version 21.0 (IBM-SPSS Science Inc., Chicago, IL).

**RESULTS**

The data of 35 carcinoma hypopharynx patients were analyzed, plotted, and tabulated in this section.

**Table 1: Basic Characteristics Of The Carcinoma Hypopharynx Study Subjects**

Variables	N	(%)
<b>Age (in years)</b>		
<30	5	14.3
31-40	1	2.9
41-50	9	25.7
51-60	7	20.0
61-70	13	37.1
<b>Gender</b>		
Male	19	54.3
Female	16	45.7
<b>HPE</b>		
SCC	32	91.4
<b>Smoking</b>		
Yes	18	51.4
No	17	48.6
<b>Alcohol</b>		
Yes	13	37.1
No	22	62.9

**Table 1** outlines the demographic and behavioural risk profile of 35 patients diagnosed with carcinoma of the hypopharynx. The majority of patients (37.1%) were **aged between 61–70 years**, followed by 25.7% between 41–50 years, indicating a higher prevalence in older adults. **Males accounted for 54.3% of the cases**, with females comprising 45.7%, demonstrating a slight male predominance. **Squamous cell carcinoma (SCC)** was overwhelmingly the most common histopathological type, observed in 91.4% of cases. Lifestyle risk factors such as **smoking (51.4%)** and **alcohol use (37.1%)** were prominently associated.

**Table 2: Distribution of T Stage of the Carcinoma Hypopharynx Study Subjects**

T STAGE	FREQUENCY	PERCENTAGE
T1	1	2.9%
T2	6	17.1%
T3	22	62.9%
T4a	4	11.4%
T4b	2	5.7%

**Table 2** expresses the **tumor staging by size and extent (T-stage)**, revealing that most patients presented with advanced tumors. Specifically, **62.9% were diagnosed with T3 stage disease**, indicating a large tumor with possible extension beyond the hypopharynx. Only a small fraction presented with early-stage tumors: T1 (2.9%) and T2 (17.1%). Advanced stages like T4a and T4b together comprised 17.1% of cases, underscoring a late-stage diagnosis trend in this population.

**Table 3: Distribution of N Stage of the Carcinoma Hypopharynx Study Subjects**

N STAGE	FREQUENCY	PERCENTAGE
N0	12	34.3%
N1	4	11.4%
N2b	4	11.4%
N2c	8	22.9%
N3b	7	20%

**Table 3** presents data on nodal involvement among patients. In the **N0 category, which indicates no regional lymph node metastasis, 34.3% of patients fall into this group**, suggesting that despite the advanced T-stage of the disease, some patients may still be eligible for curative therapy without significant nodal burden. The majority of patients, however, exhibited nodal disease, with **N2c being the most common category among those affected, accounting for 22.9%**. This

classification indicates bilateral or contralateral lymph node metastasis. Additionally, advanced nodal stages, such as N3 b, were observed in 20% of cases, highlighting the aggressive nature of the disease at the time of presentation.

**Table 4: Distribution of the Carcinoma Hypopharynx Histopathological Classification among Study Patients**

STAGE	FREQUENCY	PERCENTAGE
STAGE II	3	8.6%
STAGE III	12	34.3%
STAGE IV A	11	31.4%
STAGE IV B	9	25.7%

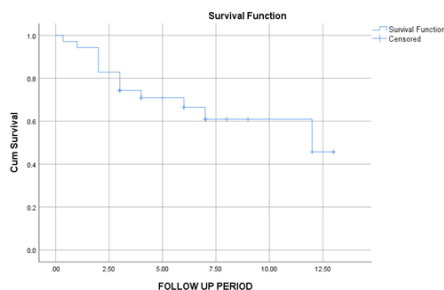
Table 4 presents the clinical staging data, indicating that very few patients were diagnosed at Stage II, accounting for only 8.6% of cases. The majority were found in advanced stages: Stage III (34.3%), Stage IVA (31.4%), and Stage IVB (25.7%). This means that nearly 91.4% of patients received a late-stage diagnosis of hypopharyngeal carcinoma, which highlights the aggressive progression of the disease and the common delays in diagnosis.

**Table 5: Association Between 3DCRT and IMRT Treatment Modality Toxicity among Carcinoma Hypopharynx Study Patients**

Dermatitis	3DCRT	IMRT	P Value
Grade 1	3 (11.1%)	6 (75%)	0.001*
Grade 2	22 (81.5%)	2 ( 25%)	
Grade 3	2 (7.4%)	0 (0.0%)	
<b>Mucositis</b>			
Grade 1	0 (0.0%)	1 (100%)	0.223
Grade 2	1 (50%)	0 (0.0%)	
Grade 3	1 (50%)	0 (0.0%)	
<b>Hemoglobin status</b>			
Anemia	13 (48.1%)	0 (0.0%)	0.032*

\* Statistically Significant

Table 5 assesses treatment-related toxicities associated with two radiotherapy modalities: 3D Conformal Radiotherapy (3DCRT) and Intensity-Modulated Radiotherapy (IMRT). The results show that dermatitis toxicity was significantly associated with the 3DCRT, with 81.5% of patients experiencing Grade 2 dermatitis and 7.4% experiencing Grade 3. In contrast, 75% of patients were associated with Grade 1 dermatitis by IMRT (p = 0.001). Mucositis toxicity was also observed and associated with the 3DCRT, although this did not reach statistical significance (p=0.223). Importantly, anemia toxicity was found exclusively associated with 3DCRT, identified in 48.1% of patients, while none of the IMRT patients experienced anemia (0%) with a statistically significant difference (p = 0.032).



**Figure 1: Correlation Between 3DCRT and IMRT Treatment Modality Toxicity among Carcinoma Hypopharynx Study Patients**

Figure 1 further emphasizes the clinical value of early intervention and advanced radiotherapy techniques in extending survival, even in a resource-constrained setting.

**DISCUSSION**

This present study shows that the majority of patients (37.1%) were aged between 61–70 years, and males accounted for 54.3% of the cases. Our study is compatible with the study published by Thomas TV et al, whose cohort showed that the median age is 61 years (range: 41-88, SD 9.3). Out of 103 eligible patients, 92 (89.3%) were male and 11 (10.7%) were female, with 61 (59.2%) receiving treatment [23]. The current study reports that the Squamous cell carcinoma (SCC) was overwhelmingly the most common histopathological type, observed in 91.4% of cases, whereas study published in 2019 by Li Y et al reported Hypopharynx squamous cell carcinoma (SCC) is a common head and neck cancer that often occurs after the age of 40. In large series, approximately 70% to 85% of patients present with illness [24].

Our study presented that the lifestyle risk factors, such as smoking (51.4%) and alcohol use (37.1%), were prominently associated, reinforcing known etiological correlations and suggesting potential avenues for preventive public health interventions. A study by Juloori A et al showed that the majority of patients with hypopharyngeal squamous cell carcinoma are males, with a history of tobacco use (90%) and heavy alcohol consumption (50%) [25].

The current study expresses that the tumor staging by size and extent (T-stage) reveals that most patients presented with advanced tumors. Specifically, 62.9% were diagnosed with T3 stage disease. This pattern, although reflective of late presentation, highlights a critical opportunity to improve early diagnostic pathways through awareness campaigns and better access to primary ENT care, whereas Santos M reported that 53.2% were T3 stage of malignancies in their study subjects [26]. This present study showed that the N0 category, which indicates no regional lymph node metastasis, 34.3% of patients fall into this group. Notably, the presence of patients in intermediate nodal stages (N1–N2c) suggests a variety of biological behaviors, reinforcing the necessity for individualized treatment planning, whereas published data by Grover, A et al reported N0 was 16%, N1 was 28%, and N2 was 56% identified by SIB-IMRT [27].

Our present study reports that the Stage III (34.3%), Stage IVA (31.4%), and Stage IVB (25.7%). This means that nearly 91.4% of patients received a late-stage diagnosis of hypopharyngeal carcinoma. While this underscores the aggressive nature of the disease and the delays in diagnosis, it also provides a strong basis for evaluating the effectiveness of multimodal treatment strategies, particularly radiation therapy and chemotherapy, in improving survival rates even at these advanced stages. Our study is consistent with the study published by Lin TY et al, whose report shows that Surgery-based treatment (SBT) can significantly improve survival rates compared to definitive CRT across the patient population. Definitive CRT had comparable survival outcomes to SBT for T3 malignancies and stage III illness [28].

We found in our study that the dermatitis toxicity was significantly associated with the 3DCRT, with 81.5% of patients experiencing Grade 2 dermatitis and 7.4% experiencing Grade 3. In contrast, 75% of patients were associated with Grade 1 dermatitis toxicity associated with IMRT (p = 0.001). This suggests that IMRT may be better tolerated overall, with fewer hematologic and dermatologic toxicities. Our study was compatible with the study by Kucha N et al, who reported that the 3DCRT and IMRT groups, 15 patients (38.4%) and 8 patients (20.51%) experienced grade 3 mucositis, respectively (p = <0.001). At three months after chemo-radiotherapy treatment, 17 patients (43.6%) and 7 patients (17.9%) had grade 2 dysphagia in the 3DCRT and IMRT groups, respectively (p = 0.029). Three patients (7.6%) in the 3DCRT group experienced grade 3 xerostomia after radiotherapy, compared to none in the IMRT group (p = 0.006).

The IMRT group had decreased rates of grade 3 dermatitis ( $p = 0.043$ ), weight loss ( $p = 0.126$ ), nasogastric intubation ( $p = 0.003$ ), and improved treatment adherence ( $p = 0.336$ ) compared to 3DCRT [29].

Our present study also found that the clinical value of early intervention and advanced radiotherapy techniques extends survival, even in a resource-constrained setting. Yasumatsu R et al presented that the early-stage hypopharyngeal SCC can be treated with minimally invasive transoral surgery or radiation. Routinely checking the pharynx with NBI is crucial for patients with a history of head and neck cancer, esophageal cancer, gastric cancer, or pharyngeal discomfort. This is also suggested for patients undergoing endoscopy for screening [30].

## CONCLUSION

The presence of multiple censored cases highlights that several patients either survived throughout the study period or were not lost to follow-up, suggesting the potential efficacy of treatment protocols, particularly the adoption of IMRT over 3DCRT, as indicated by lower toxicity. Overall, the data strongly support a shift toward advanced radiation techniques like IMRT in the management of hypopharyngeal carcinoma, not only to improve tolerability but also to potentially enhance patient compliance and long-term outcomes.

This study provides a comprehensive view of carcinoma hypopharynx in a resource-limited setting and offers critical evidence in favor of adopting newer, patient-friendly radiation modalities. The documentation of epidemiological trends, coupled with comparative treatment toxicity profiles, equips oncologists and public health policymakers with data-driven tools to improve diagnostic and therapeutic strategies. The findings also set the stage for future prospective studies and multicenter collaborations aimed at early detection, individualized treatment planning, and survival enhancement in hypopharyngeal cancers.

This survival analysis provides critical insight into treatment outcomes for patients with hypopharyngeal carcinoma. Despite the aggressive nature of the disease and advanced stage at diagnosis (as shown in the tabulated data), a significant proportion of patients demonstrated sustained survival beyond one year.

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