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Original Research Article

Head and Neck Cancers in India: Epidemiology and Early Detection Challenges

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Abstract:

Background: Nearly one-third of all malignancies in India are head and neck cancers (HNC), making them a serious public health concern. The burden of disease is greatly increased by alcohol intake, tobacco usage, and delayed diagnosis.

Objective: To study the epidemiological profile of head and neck cancer patients and evaluate challenges associated with early detection.

Methods: Over the course of a year, a prospective observational study was carried out in a tertiary care facility. There were one hundred patients with a head and neck cancer diagnosis. Risk factors, cancer site, stage at diagnosis, time to diagnosis, and demographics were noted. The chi-square test was used for statistical analysis, and a p-value of less than 0.05 was deemed statistically significant.

Results: 72% of the patients were men. The age range of 51 to 60 was the most frequently impacted. The most common risk factor (68%) was tobacco use. Oral cavity cancers were the most frequent (42%), followed by laryngeal tumors (25%). Approximately 64% of individuals had advanced (Stage III–IV) presentations. Low awareness and tobacco use were substantially correlated with late presentation ($p < 0.05$).

Conclusion: In India, head and neck malignancies are still very common, and the majority of patients arrive at an advanced stage. To increase early detection and results, tobacco control regulations, awareness campaigns, and early screening must be strengthened.

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Introduction

Malignancies originating from the oral cavity, pharynx, larynx, nasal cavity, and salivary glands are together referred to as head and neck cancers (HNC). Each year, these tumors cause about 650,000 new cases worldwide. India contributes between 30 to 35 percent of all cases worldwide, which is a disproportionately high burden [1].

In India, smoking and smokeless tobacco use continue to be the main risk factors. Alcohol use, human papillomavirus infection, poor dental hygiene, and dietary deficits are other factors. Early detection is still a significant difficulty despite advancements in diagnostic methods and therapeutic approaches [2]. Due to ignorance, financial constraints, restricted access to medical services, and disregard for early symptoms, the majority of patients in India arrive at advanced stages [3]. Treatment morbidity rises and survival rates are dramatically decreased by late diagnosis. The present study seeks to analyze the epidemiological profile of head and neck malignancies and identify problems related to early diagnosis among patients presenting to a tertiary care hospital over a period of one year [4].

Methods

Study Design: Prospective observational study.

Study Setting: Manu ENT and Multispeciality hospital Sikar.

Study Duration: 1 year Jan 2025 to Dec 2025.

Sample Size: 100 patients diagnosed with head and neck cancer.

Inclusion Criteria

- Patients aged ≥18 years
- Histopathologically confirmed head and neck cancer
- Patients willing to participate in the study

Exclusion Criteria

- Recurrent cancers
- Metastatic cancers from other primary sites
- Incomplete medical records

Statistical Analysis: Software for statistical analysis was used. The chi-square test was used to compare categorical variables, and a p-value of less than 0.05 was deemed statistically significant.

Results

Table 1: Association Between Risk Factors and Stage at Diagnosis

Risk Factor	Early Stage (I–II) n=36	Late Stage (III–IV) n=64	Total	p-value
Tobacco Users	18	50	68	0.02
Alcohol Use	10	24	34	0.21
Both Tobacco & Alcohol	8	20	28	0.18
No Risk Factor	8	6	14	0.04

Table 2: Distribution of Cancer Sites

Site of Cancer	Number of Cases	Percentage
Oral cavity	42	42%
Larynx	25	25%
Oropharynx	15	15%
Hypopharynx	10	10%
Nasopharynx	8	8%

Table 3: Demographic Distribution

Variable	Number	Percentage
Male	72	72%
Female	28	28%
Age 31–40	10	10%
Age 41–50	24	24%
Age 51–60	38	38%
Age >60	28	28%

Discussion

In a tertiary care context in India, the current study assessed the prevalence and difficulties associated with early identification of head and neck malignancies. The results demonstrated a distinct male patient predominance, which is in line with earlier research carried out in India. The higher prevalence of alcohol and tobacco use among men may be the cause of this gender disparity [5].

Due of the cumulative effect of long-term exposure to carcinogenic risk factors, the age group most affected in this study was 51–60 years. Numerous epidemiological investigations conducted throughout India have revealed similar results. With 42% of cases, oral cavity cancer was the most prevalent location. This pattern is consistent with the Indian population's extensive use of betel nut products and smokeless tobacco [6].

The large percentage of individuals who presented in advanced stages was one of the study's main concerns. Nearly two-thirds of individuals were diagnosed at Stage III or IV. Lack of knowledge about early signs, societal stigma, financial constraints, and poor access to medical facilities are all common causes of late presentation. Late-stage presentation was substantially correlated with tobacco use. Tobacco users frequently overlook early signs, such as chronic ulcers or sore throats, until the illness has progressed [7].

The study revealed that patients were overwhelmingly male (72%). The most prevalent risk factor was found to be tobacco use (68%). The most common site of cancer was the mouth cavity. The majority of patients (64%) had advanced stages (III–IV). Late-stage presentation was substantially correlated with tobacco usage (p=0.02), suggesting a delayed diagnosis [8].

Strengthening community awareness campaigns, encouraging regular oral screenings, and putting in place effective tobacco control measures are all necessary to improve early detection. Early detection of worrisome lesions and prompt diagnosis referrals are important tasks for primary healthcare providers [9].

Conclusion

With a large percentage of patients presenting at advanced stages, head and neck malignancies continue to be a major health burden in India. The main risk factor for illness incidence and delayed diagnosis is still tobacco smoking. Improving early detection and lowering morbidity and mortality related to head and neck cancers requires raising public awareness, promoting early screening, and putting into practice efficient tobacco control measures.

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