

Original Research Article

Clinico-epidemiological features of hypopharyngeal cancer patients presenting at Bangabandhu Sheikh Mujib medical university, Bangladesh

Khandokar Samsujjaman*, Sarwar Alam, M. A. Bari, Sajib K. Talukdhara, Mohammad J. Shams, Rajani Jha

Department of Clinical Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh

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***Correspondence:**

Dr. Khandokar Samsujjaman,

E-mail: rossi.bmc.46@gmail.com

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ABSTRACT

Background: In Bangladesh, hypopharyngeal cancer is one of the most prevalent cancers in head neck region. In this study, the clinico-epidemiological characteristics of patients with hypopharyngeal cancer were evaluated.

Methods: From November 2021 to October 2022, 172 patients with hypopharyngeal carcinoma were included in this descriptive, cross-sectional study at Bangabandhu Sheikh Mujib medical university's department of clinical oncology. During in-person interviews, data were gathered from patients using a pre-made questionnaire.

Results: The mean age of the patients was 54.42 (± 7.652) years, and the majority of them (59.3%) were between the ages of 51 and 60. Male patients made up 81.4% of the total patient population, and 51.16% of them were farmers. The majority of the cases (79.07%) consumed tobacco. Squamous cell carcinoma was the most prevalent histological type among the patients (92%), and most of them had a moderate degree of differentiation (65.12%). The pyriform fossa (81.4%) was the most common primary sub site.

Conclusions: In conclusion, tobacco users and middle-aged men are more likely to develop hypopharyngeal cancer. The most common histological type is moderately differentiated squamous cell carcinoma, with tumours most commonly seen in the pyriform fossa of hypopharynx.

Keywords: Clinico-epidemiological, Hypopharyngeal cancer, Cross-sectional study

INTRODUCTION

Hypopharynx is one of the primary locations of head and neck cancer. Cancer of the upper aerodigestive tract, including the lips, oropharynx, larynx, oral cavity, hypopharynx, salivary glands, and sinonasal cavities, is referred to as head and neck cancer. Since the majority of them (roughly 95%) originate from the surface epithelium, they are either squamous cell carcinomas or one of their variations.¹ The global burden of cancer incidence and death is constantly increasing. Head neck cancer is the first or second leading cause of death before the age of 70 years in 112 of 183 countries.² The incidence of head and neck cancer was more than

931,931 cases with around 467,125 deaths in 2020. Among them, the total number of new cases of hypopharyngeal cancers was 84,254 and the number of new deaths was 38,599.³ Incidence of hypopharyngeal cancer varies by region, with the highest incidence in South-Central Asia.⁴ In Bangladesh, the estimated new cases of head and neck cancer in 2020 was around 32,337. Among them, the number of new cases of hypopharyngeal cancers was 13,401 and ranked 7th among all cancers.⁴ There is no complete statistics of head and neck cancer in our country. According to the hospital cancer registry report, NICRH, Dhaka 2015-2017, the total number of new cases of hypopharyngeal was 173 in 2017.⁵

Squamous cell carcinoma arising from the mucosal layer is the most common histology identified in 95% of the cases, while adenocarcinoma, sarcoma, and non-epidermoid carcinoma account for the remaining cases.⁶ There are three primary anatomic subsites within the hypopharynx: the bilateral pyriform sinuses, the post-cricoid region, and the posterior pharyngeal wall. The majority (70%) of tumours originate in the pyriform sinus.⁷

Epidemiology of head and neck cancer is significantly correlated with exposure to specific environmental factors, including alcohol and tobacco use. For 80-90% of patients, smoking is a recognized independent risk factor.^{8,9}

Hypopharyngeal cancer tend to be more advanced at the time of presentation. Patients frequently appear with regional nodal metastases due to the extensive lymphatic network in this anatomical location. At the time of diagnosis, more than 50% of patients have cervical lymph nodes that are clinically positive, and eventually, 65% to 80% of patients will have nodal involvement.¹⁰ Most hypopharynx cancer patients have advanced local or regional disease at presentation.¹¹ When the tumour progresses, the patient may develop increasing dysphagia, which first affects the ability to swallow solids before fluids. When the tumour spreads into the larynx or as the vocal cords become paralyzed, hoarseness of voice may develop.¹²

Most cases of hypopharyngeal carcinoma are diagnosed after the age of 50 years.¹³ Approximately 60% of all hypopharyngeal carcinoma patients visit the oncology department when their disease is advanced.¹⁴ In this study, we examined the clinicopathological and epidemiological characteristics of individuals with hypopharyngeal carcinoma.

METHODS

From November 2021 to October 2022, 172 patients with hypopharyngeal carcinoma were enrolled in this descriptive, cross-sectional study at Bangabandhu Sheikh Mujib medical university's department of clinical oncology. Each patient provided informed consent prior to data collection. The method of consecutive sampling was used. During face-to-face interviews, a pre-made questionnaire was utilized to collect data from patients. The variables studied were age, gender, economic background, primary cancer sites, clinical stage, histological type, risk factor, and presenting symptoms. The SPSS software package for Windows, version 26.0, was used to analyse the data.

RESULTS

This study included 172 people with hypopharyngeal carcinoma. The patients' mean age was 54.42 (± 7.652) years. The most prevalent age group for hypopharyngeal

carcinoma was 51-60 years old (59.3%). There were 140 male cases (81.4%) and 32 female cases (18.6%). The gender ratio was 4.38:1. The bulk of the patients (51.16%) were farmers. Of the total number of patients, there were 136 (79.07%) tobacco users and 36 (20.93%) non-users (Table 1).

Dysphagia (144 cases, or 83.72% of all cases) and neck swelling (116 cases, or 67.44% of all cases) were the two most frequent symptoms (Table 2).

The pyriform fossa (81.4%), posterior pharyngeal wall (11.63%), and post cricoid area (06.98%) were the patients' primary subsites (Figure 1).

Squamous cell carcinoma was found in 92% of the patients on histology. The remaining histological types include adenocarcinoma, adenoid cystic carcinoma, acinic cell carcinoma, and mucoepidermoid carcinoma (Figure 2).

Distribution by stages demonstrates the patients in various stages of carcinoma; stage I patients made up 9.4% of the total, stage II 23.8%, stage III 32.2%, and stage IV 34.6% of the total (Figure 3).

Table 1: Distribution of patients according to demographic characteristics.

Variables	Number of patients
Age (mean \pm SD) (years)	54.42 (± 7.652)
Age groups (years) (%)	
31-40	3 (2.01)
41-50	15 (8.63)
51-60	102 (59.3)
61-70	36 (20.93)
>70	16 (9.3)
Sex (%)	
Male	140 (81.4)
Female	32 (18.6)
M:F (Ratio)	4.38:1
Tobacco use (%)	
Yes	136 (79.07)
No	36 (20.93)
Occupation (%)	
Farmer	88 (51.16)
Service holder	28 (16.28)
Business	24 (13.95)
House wife	28 (16.28)
Others	4 (2.32)

Table 2: Distribution of patients according to major complaints.

Presenting complaints	N (%)
Dysphagia	83.72
Neck swelling	67.44
Odynophagia	39.53
Hoarseness of voice	16.28

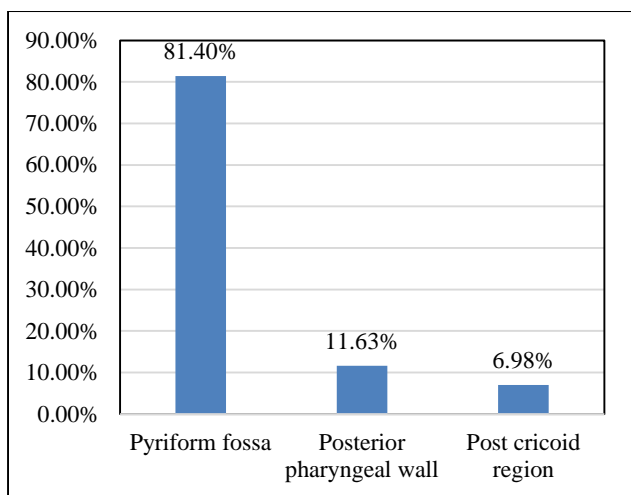


Figure 1: Distribution of the patients according to the sub-sites.

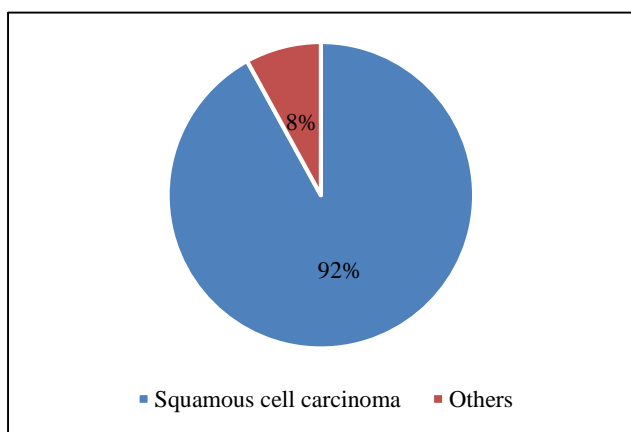


Figure 2: Distribution of the patients according to their histopathology.

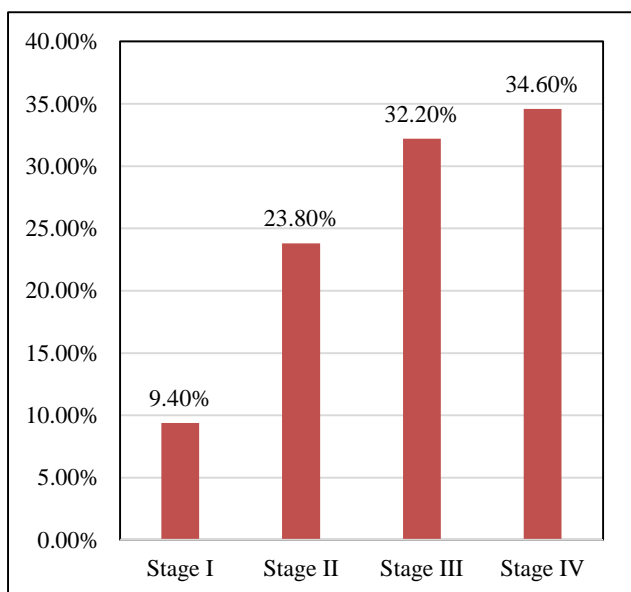


Figure 3: Distribution of the patients according to their clinical stage.

DISCUSSION

In Bangladesh, the estimated number of new cases of head and neck cancer in 2020 was around 32,337. Among them, the number of new cases of hypopharyngeal cancer was 13,401, ranking it 7th among all cancers and making it the 4th most prevalent cancer in men.⁴ For about 80 percent of patients, smoking is established as an independent risk factor.¹¹ The vast majority of people with head and neck cancer are detected at a late stage.¹⁴ A total of 172 patients were studied for this study in order to assess the epidemiological and clinicopathological features of hypopharyngeal cancers.

The mean age of the patients was 54.42 (± 7.652) years. This finding is consistent with that reported by Islam et al., who noted that the majority of the patients were in their fifth or sixth decade of life.¹⁴ Majority of patients (83.72%) were diagnosed after the age of 50. This finding is consistent with findings of DeVita et al who discovered that majority of patients were over age of 50.¹

In this study, male patients made up 81.4% of all patients, with a male-to-female ratio of 4.38:1. Hoffman et al found that about three-fourths of hypopharyngeal tumours occur in men, and this observation almost correlates with our findings.⁶ A prospective study conducted at several hospitals in Bangladesh found that men were more likely than women to acquire hypopharyngeal cancer, with a male-to-female ratio of roughly 6:1.¹⁵ In past studies, tobacco smoking was found to be the most common risk factor.^{8,9,16-18} There is no safe degree of exposure to tobacco because it is harmful in all forms. The most popular way to consume tobacco worldwide is through cigarettes. Other tobacco items include waterpipe tobacco, pipe tobacco, various smokeless tobacco options, cigars, roll-your-own tobacco, bidis, kreteks, and cigarillos. In this study, we observed that 79.07% of the participants smoked. Smoking is an independent risk factor in 80-90% of cases, according to Halperin et al.¹¹

The most common histological type we observed in this study was squamous cell carcinoma (92%), which is in line with previous studies.^{6,17-18} Moderate histologic differentiation was the most common grade (65.12%). This finding almost agrees with that of Islam et al who found that moderate differentiation accounted for 50% of all differentiation.¹⁴ The majority of patients' sub-sites (81.4%) were pyriform sinuses. According to Aich et al pyriform fossa accounts for 80% of cases of hypopharyngeal cancer.¹⁵ Cancers of posterior wall and post-cricoid quite uncommon. According to incidence, South-Central Asia has greatest incidence of hypopharyngeal carcinoma.⁴ Reason for this high incidence is practice of chewing betel, nuts, and tobacco in these countries.¹⁹ The majority of the patients in this study were in advanced stages, which is consistent with Halperin et al.¹¹ Most prevalent symptom in this study was dysphagia (83.72%). Neck swelling second-most

prevalent symptom (67.44%). Perkin et al and Aich et al found most hypopharyngeal cancer patients experience neck pain, swallowing issues, and swellings.^{15,19}

CONCLUSION

The findings indicate that middle-aged males who smoke have a higher incidence of hypopharyngeal cancer. The pyriform fossa was most frequently affected primary subsite. The most frequent histological type was squamous cell carcinoma, and the majority of these cases had a moderately differentiated grade. As the majority of the patients had advanced disease, early diagnosis is essential to stop the disease's progression.

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