

Original Article**Clinicopathological Profile of Lung Cancer Patients****Pradip Bhandari**

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Article Received: 9th February, 2026; Accepted: 29th April, 2026; Published: 30th June, 2026**DOI: <https://doi.org/10.3126/jonmc.v15i1.96249>****Abstract****Background**

Lung cancer is a common malignancy and an important cause of cancer-related mortality. Institutional data from Eastern Nepal are limited.

Materials and Methods

A descriptive hospital-based cross-sectional study was conducted in the Clinical Oncology department of Nobel Medical College Teaching Hospital, Biratnagar, Nepal. Records of 50 confirmed lung cancer patients registered from January 2023 to December 2023 were reviewed. Data were retrieved from the oncology registry and hospital medical records and analyzed using descriptive statistics.

Results

The mean age was 63.6 ± 11.3 years, with a median age of 68 years (range 27-79 years). Males and females were equally represented (25 each, 50.0%). Stage IV disease was observed in 30 (60.0%) patients and Stage III disease in 20 (40.0%) patients. Adenocarcinoma was the most common histological subtype (22, 44.0%), followed by squamous cell carcinoma (16, 32.0%) and small cell carcinoma (4, 8.0%). Smoking history was present in 35 (70.0%) patients.

Conclusion

Lung cancer patients attending Nobel Medical College Teaching Hospital predominantly presented at advanced stages, and adenocarcinoma was the leading histological subtype.

Keywords: Adenocarcinoma, Carcinoma, Non-Small-Cell Lung, Lung Neoplasms, Neoplasm Staging, Smoking

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Introduction

Lung cancer is one of the most frequently diagnosed malignancies and remains a leading cause of cancer-related mortality worldwide [1-3]. Its high mortality is largely related to aggressive tumor biology, delayed symptom recognition, and diagnosis at advanced stages.

In Nepal, the burden of cancer is increasing with the epidemiological transition toward non-communicable diseases [4-7]. Lung cancer remains among the major cancers reported nationally, especially among males. In Eastern Nepal, institutional data describing stage at presentation, smoking status, and histological pattern are still limited, although such information is useful for planning early detection and referral services.

This study aimed to describe the clinicopathological profile, including smoking status, histological subtype, and stage at presentation, of lung cancer patients attending Nobel Medical College Teaching Hospital in Eastern Nepal.

Materials and Methods

This descriptive hospital-based cross-sectional study was conducted in the Clinical Oncology Department of Nobel Medical College Teaching Hospital, Biratnagar, Morang, Nepal. The study reviewed records of lung cancer patients registered from January 2023 to December 2023. Ethical approval was obtained from the Institutional Review Committee of Nobel Medical College Teaching Hospital (Ref No: 27/2024; May 4, 2024), and patient confidentiality was strictly maintained. Patients of all age groups and both sexes with histologically and/or radiologically confirmed lung cancer were included. Patients with incomplete medical records and suspected cases without confirmation were excluded. Because this was a complete-record review of all eligible patients registered during the defined study period, no separate sample size calculation was performed. Census sampling was used, and the final sample size was 50 patients after applying the inclusion and exclusion criteria.

Data were retrieved from the Clinical Oncology registry and hospital medical record section using a structured data collection proforma. Variables included age, sex, residence, smoking status, histological type, and stage at presentation. Histological type was categorized as adenocarcinoma, squamous cell carcinoma, small

cell carcinoma, or others/uncategorized based on pathology reports. Staging was documented according to the American Joint Committee on Cancer tumor, node, and metastasis staging system [8]. Data were entered in Microsoft Excel and analyzed using descriptive statistics. Categorical variables were summarized as frequency and percentage, while continuous variables were summarized as mean $\pm$ standard deviation and median with range.

Results

A total of 50 lung cancer patients were included. The mean age was 63.6 ± 11.3 years, and the median age was 68 years (range 27-79 years). Male and female patients were equal in number (25 each, 50.0%). Most patients were aged 60-79 years (35, 70.0%). All patients presented with advanced-stage disease (Stage III or Stage IV).

Table 1: Baseline Characteristics of Lung Cancer Patients (n=50)

Characteristic	Frequency/Value	Percentage (%)
Age, years (mean $\pm$ SD)	63.6 $\pm$ 11.3	-
Age, years (median, range)	68 (27-79)	-
<40 years	1	2.0
40-59 years	14	28.0
60-79 years	35	70.0
$\geq$ 80 years	0	0.0
Male	25	50.0
Female	25	50.0
Male:Female ratio	1:1	-
Recorded residence in Nepal	42	84.0
Recorded residence outside Nepal (India)	6	12.0
Residence not recorded	2	4.0

Table 2: Stage Distribution of Lung Cancer Patients (n=50)

Stage	Frequency (n)	Percentage (%)
Stage IV	30	60.0
Stage III	20	40.0
Total	50	100.0

Table 3: Histological Distribution of Lung Cancer Patients (n=50)

Histology	Frequency (n)	Percentage (%)
Adenocarcinoma	22	44.0
Squamous cell carcinoma	16	32.0
Small cell carcinoma	4	8.0
Others/Uncategorized	8	16.0
Total	50	100.0



Table 4: Smoking Status Distribution of Lung Cancer Patients (n=50)

Smoking Status	Frequency (n)	Percentage (%)
Smoker	35	70.0
Non-smoker	15	30.0
Total	50	100.0

Table 5: Smoking Status by Histological Subtype (n=50)

Histology	Smoker n (%)	Non-smoker n (%)	Total n (%)
Adenocarcinoma	11 (50.0)	11 (50.0)	22 (44.0)
Squamous cell carcinoma	16 (100.0)	0 (0.0)	16 (32.0)
Small cell carcinoma	4 (100.0)	0 (0.0)	4 (8.0)
Others/Uncategorized	4 (50.0)	4 (50.0)	8 (16.0)
Total	35 (70.0)	15 (30.0)	50 (100.0)

Discussion

This descriptive cross-sectional study provides an overview of lung cancer patients attending a tertiary care teaching hospital in Eastern Nepal. Patients had a mean age of 63.6 years, and both sexes were equally represented. The major finding was advanced-stage presentation in all included cases, with Stage IV disease accounting for 30 (60.0%) patients. This highlights a substantial burden of late-stage presentation and suggests barriers to early detection and timely referral. Late-stage presentation of lung cancer is commonly reported in low- and middle-income countries. Several factors may contribute to delayed diagnosis, including limited awareness of early symptoms, delayed health-seeking behavior, limited access to diagnostic imaging and pathology services, and financial constraints. In Nepal, geographic barriers and limited specialized oncology services may further delay diagnosis and treatment initiation.

Smoking history was present in 35 (70.0%) patients, supporting the continued importance of tobacco exposure in the local lung cancer burden [9, 10]. In the histology-specific analysis, all patients with squamous cell carcinoma and small cell carcinoma were smokers, while adenocarcinoma occurred equally among smokers and non-smokers. Household air pollution from biomass fuel combustion is also common in rural Nepal and may contribute to lung cancer risk among never-smokers [11]. These findings support tobacco control, smoking cessation programs, and measures to reduce indoor air pollution. Adenocarcinoma was the most common histological subtype, followed by squamous cell carcinoma and small cell carcinoma. This pat-

tern is consistent with global trends in which adenocarcinoma has become the leading histological type of lung cancer [12]. Squamous cell carcinoma remains strongly associated with tobacco exposure and continues to account for a substantial proportion of cases in developing settings.

The absence of early-stage lung cancer in this cohort suggests limited early diagnostic pathways and lack of organized screening. Low-dose computed tomography screening has been shown to reduce lung cancer mortality among high-risk populations; however, implementation in resource-limited settings such as Nepal remains challenging [13]. Strengthening early symptom recognition, referral pathways, imaging access, and biopsy services may help shift diagnosis toward earlier stages [14].

This study was hospital-based and may not represent the population-level pattern of lung cancer in Nepal. The sample size was small for a 12-month period, which may reflect low oncology registry enrollment, referral to other centers, and incomplete capture of all lung cancer cases. The address variable was recorded as locality rather than a standardized urban/rural classification, and occupational exposure history could not be analyzed due to incomplete documentation. Furthermore, radiotherapy services were not available at Nobel Medical College Teaching Hospital during the study period, which may have influenced referral patterns and treatment pathways.

Conclusion

Lung cancer patients attending Nobel Medical College Teaching Hospital predominantly presented with advanced-stage disease, with Stage IV disease being the most common stage at diagnosis. Adenocarcinoma was the leading histological subtype followed by squamous cell carcinoma. A high proportion of patients had a smoking history, highlighting tobacco use as a major contributing factor to lung cancer burden in Eastern Nepal. Strengthening tobacco control policies, smoking cessation programs, public awareness initiatives, and early diagnostic services may help reduce late-stage presentation and improve patient outcomes.

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Conflict of interest

The author declares no conflict of interest.

References

- [1] Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F, Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries, *CA Cancer J Clin.* 71:3 (2021) 209-249. DOI:10.3322/caac.21660. PMID:33538338.
- [2] World Health Organization, Cancer, Geneva: World Health Organization; 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/cancer>. Accessed on: June 12, 2026.
- [3] World Health Organization. Cancer: Key facts. Geneva: World Health Organization; 2020. Available from: <https://www.who.int/news-room/fact-sheets/detail/cancer>. Accessed on: June 12, 2026.
- [4] National Cancer Registry Program. Annual Report of Cancer Incidence in Nepal. Bharatpur, Nepal: B.P. Koirala Memorial Cancer Hospital; 2021. Available from: <https://www.bpkmch.org.np>. Accessed on: June 12, 2026.
- [5] Nepal Health Research Council. Population-Based Cancer Registry Report 2019. Kathmandu, Nepal: Nepal Health Research Council; 2022. Available from: <https://nhrc.gov.np>. Accessed on: June 12, 2026.
- [6] Ministry of Health and Population, Nepal; New ERA; ICF. Nepal Demographic and Health Survey 2022. Kathmandu, Nepal: Ministry of Health and Population; 2023. Available from: <https://www.dhsprogram.com/publications/publication-FR379-DHS-Final-Reports.cfm>. Accessed on: June 12, 2026.
- [7] International Agency for Research on Cancer. Global Cancer Observatory: Nepal Fact Sheet (GLOBOCAN 2020). Lyon, France: International Agency for Research on Cancer; 2020. Available from: <https://gco.iarc.who.int/media/globocan/factsheets/populations/524-nepal-fact-sheet.pdf>. Accessed on: June 12, 2026.
- [8] Amin MB, Edge SB, Greene FL, et al., editors. *AJCC Cancer Staging Manual*. 8th ed. New York: Springer; 2017. Available from: <https://link.springer.com/book/9783319406176>. Accessed on: June 12, 2026.
- [9] World Health Organization. WHO report on the global tobacco epidemic 2021: addressing new and emerging products. Geneva: World Health Organization; 2021. Available from: <https://www.who.int/publications/i/item/9789240032095>. Accessed on: June 12, 2026.
- [10] World Health Organization. Tobacco. Geneva: World Health Organization; 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/tobacco>. Accessed on: June 12, 2026.
- [11] Raspanti GA, Hashibe M, Siwakoti B, Wei M, Thakur BK, Pun CB, et al, Household air pollution and lung cancer risk among never-smokers in Nepal. *Environ Res.* 147 (2016) 141-145. DOI: 10.1016/j.envres.2016.02.008. PMID:26874034.
- [12] Travis WD, Brambilla E, Nicholson AG, et al. The 2015 World Health Organization classification of lung tumors: impact of genetic, clinical and radiologic advances since the 2004 classification. *J Thorac Oncol.* 10:9 (2015) 1243-1260. DOI:10.1097/JTO.0000000000000630. PMID:26291008.
- [13] National Lung Screening Trial Research Team; Aberle DR, Adams AM, Berg CD, et al., Reduced lung-cancer mortality with low-dose computed tomographic screening. *N Engl J Med.* 365:5 (2011) 395-409. DOI:10.1056/NEJMoa1102873. PMID:21714641.
- [14] World Health Organization. Guide to cancer early diagnosis. Geneva: World Health Organization; 2017. Available from: <https://www.who.int/publications/i/item/9789241511940>. Accessed on: June 12, 2026.

