Original Research Article

# Study of clinical profile of lung cancer cases at a tertiary care center

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## Abstract

**Background:** Lung cancer is the one of the common cancer and major contributory cause of cancer mortality worldwide. Every year lung cancer causes more than 1.6 million deaths, which is more than breast, colon and prostate cancers combined. Tobacco smoking remains the biggest risk factor for development of lung cancer. This study was aimed to study the clinical profile of lung cancer cases reporting to our tertiary care center. **Material and Methods:** Present study was prospective, observational study conducted in TB and Chest Department, in biopsy and/or and histopathologically confirmed lung cancer patients **Results:** In present study total 86 patients were included, with 74 male and 12 female patients. Male to female ratio was 6.16:1. 51-60 years age group (44 %) was most common age group, followed by age group 61-70 years (28 %) and by age group 41-50 years (17 %). History of smoking was present in 63.95 % patients and rest 36.05 % patients had no history of smoking. Major complaints were cough (70.93 %), loss of appetite/weight loss (63.95 %), breathlessness (61.62 %), chest pain (46.51 %), fever (41.86 %) in present study. We noted adenocarcinoma (56.97%) as most common histological type, followed by squamous cell carcinoma (25.58%). Other types as small cell carcinoma (9.3%), NSCLC undifferentiated carcinoma (5.81%), large cell carcinoma (2.32%) were noted in less amount. **Conclusion:** Onset of disease after 50 years, significant incidence in male patients, strongly associated history of smoking and adenocarcinoma as most common type were findings in present study. Government and many NGOs are also increasing public awareness for hazards of smoking, but more work is still needed.

**Key Words:** Lung cancer, clinical profile, diagnosis;

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## INTRODUCTION

Lung cancer is the one of the common cancer and major contributory cause of cancer mortality worldwide. Lung cancer accounts for 11.6% of all new cancer cases diagnosed per year and is becoming the most common fatal neoplastic condition in the world today, accounting for 18.4% deaths related to all cancer-related mortality in the world[1]. Every year lung cancer causes more than 1.6 million deaths, which is more than breast, colon and prostate cancers combined. Tobacco smoking remains the biggest risk factor for development of lung cancer[2]. However, of all the lung cancers diagnosed in the world, approximately 25% were never smokers[3].Approximately, 10% of lung cancer patients are asymptomatic at presentation. However, most are symptomatic and may present with non-specific symptoms such as weight loss or fatigue or with direct signs and symptoms caused by the primary tumour or intrathoracic or extrathoracic spread. But in India, there is often misdiagnosis or delayed diagnosis of lung cancer due to non-specific nature of symptoms and high prevalence of tuberculosis. Many patients present with various co-morbidities which adversely affect diagnosis and prognosis. Most patients are diagnosed at an advanced stage of the disease, unfit for curative treatment[4]. Adenocarcinoma, squamous cell carcinoma, large cell carcinoma and small cell undifferentiated carcinoma are the common histological types accounting for more than 90% of all lung cancers[5]. This study was done to explore the clinical profile of lung cancer cases reporting to our tertiary care center.

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## MATERIAL AND METHODS

Present study was a prospective and observational study, conducted in patients of department of Skin and Venereal Diseases, Dr Ulhas Patil Medical College and hospital, Jalgaon. Total study duration was 1 year. Institutional human ethics committee approval for present study was taken.

**Inclusion criteria**

Biopsy and/or and histopathologically confirmed lung cancer patients

**Exclusion criteria**

1.Patients with secondary lung cancer, lymphoma, sarcoma, malignant pleural effusion of unknown primary or non-pulmonary site, and other rare varieties were excluded from this study.

2. Patient not willing to participate in present study.

Written consent was obtained from patients prior to participation in study. Patients demographic profiles, complaints, smoking history, symptoms duration, relevant personal/family history, signs and symptoms, radiographic findings, histopathological subtypes, and clinical staging of lung cancer were noted in detail in proforma. Routine hematological examinations, sputum for malignant cytology, chest radiology [X-ray, computed tomography (CT) thorax] were done for all patients. Investigations like CT/ultrasound guided fine-needle aspiration cytology (FNAC)/biopsy, pleural fluid malignant cytology, Lymph node biopsy, thoracoscopic biopsy were done when indicated. In selected patients Fiber optic bronchoscopy (FOB) was done for biopsy and bronchial aspirate. Management was primarily decided on factors such as staging, histopathological diagnosis, age, etc. Follow up was kept for 1 year. All data was entered in Microsoft excel sheet and analysed.

## RESULTS

In present study total 86 patients were included, after applying inclusion and exclusion criteria. Male patients clearly outnumbered female patients in present study (74 male and 12 female). Male to female ratio was 6.16:1. 51-60 years age group (44 %) was most common age group, followed by age group 61-70 years (28 %) and by age group 41-50 years (17 %). Only 2% patients were below 40 years age. The median age at in our study was 56 years with the youngest patient of age 37 years age.

**Table 1:** Age and gender

| Age in Years | Males | Females | Percentage |
|---|---|---|---|
| <40 | 1 | 1 | 2% |
| 41-50 | 13 | 2 | 17% |
| 51-60 | 34 | 4 | 44% |
| 61-70 | 19 | 5 | 28% |
| >70 | 7 | 0 | 8% |
| **Total** | **74 (86.05 %)** | **12 (13.95 %)** | **100%** |

Smoking is most common prevalent factor in carcinoma lung. History of smoking was present in 63.95 % patients and rest 36.05 % patients had no history of smoking. Current smoking was present in 45.35 % patients while 18.60 % patients had history of smoking in past.

**Table 2:** Smoking history

| Smoking history | Number of patients | Percentage |
|---|---|---|
| Current Smoker | 39 | 45.35 |
| Former Smoker | 16 | 18.60 |
| Never | 31 | 36.05 |

Major complaints were cough (70.93 %), loss of appetite/weight loss (63.95 %), breathlessness (61.62 %), chest pain (46.51 %), fever (41.86 %) in present study.

**Table 3:** Chief complaints

| Chief complaints | Number of patients | Percentage |
|---|---|---|
| Cough | 61 | 70.93 |
| Loss of Appetite/weight loss | 55 | 63.95 |
| Breathlessness | 53 | 61.62 |
| Chest pain | 40 | 46.51 |
| Fever | 36 | 41.86 |
| Other | 31 | 36.05 |
| Hemoptysis | 24 | 27.90 |
| Hoarseness of voice | 12 | 13.95 |

Radiologically well-defined mass (55.81%) was most common finding, while lobar collapse (26.74%), thoracic metastases (24.42%), pleural effusion (22.09%) were other findings noted in present study.

**Table 4:** Radiological Presentations

| Radiological Signs | Number of patients | Percentage |
|---|---|---|
| Well-defined mass | 48 | 55.81% |
| Lobar collapse | 23 | 26.74% |
| Thoracic metastases | 21 | 24.42% |
| Pleural effusion | 19 | 22.09% |
| Extrathoracic metastasis | 16 | 18.60% |
| Lymphangitis | 12 | 13.95% |

We noted adenocarcinoma (56.97%) as most common histological type, followed by squamous cell carcinoma (25.58%). Other types as small cell carcinoma (9.3%), NSCLC undifferentiated carcinoma (5.81%), large cell carcinoma (2.32%) were noted in less amount.

**Table 5:** Histological diagnosis

| Diagnosis | Total patients | History of smoking | No history of smoking |
|---|---|---|---|
| Adenocarcinoma | 49(56.97%) | 23(26.74%) | 26(%) |
| Squamous cell | 22(25.58%) | 16(18.60%) | 6(6.97%) |
| Small cell | 8(9.3%) | 6(6.97%) | 2(2.32%) |
| NSCLC Undiff | 5(5.81%) | 3(3.49%) | 2(2.32%) |
| Large cell | 2(2.32%) | 2(2.32%) | 0 |
| **Total** | **86** | **50(58.14%)** | **36(41.86%)** |

## DISCUSSION

Primary lung cancer is increasingly diagnosed in respiratory practice. With increasing awareness among physicians, better diagnostic modality, increase in carcinoma lung incidence is noted. In present study majority of the patients were in the age group of 41–70 years, similar findings were reported in other studies from India[6,7], suggesting the disease onset in later stage of life. We noted that, the gender representation of males (86.05 %) was more than that of females (13.95 %). The male to female ratio in our study was 6.16:1 which is more than noted incidence in the study reported by Sundaram and Sanyal[6] (4.2:1). Carcinoma lung was more prevalent in male patients, is also noted in other studies. Increased incidence of tobacco smoking, more exposure to environmental smoke, occupational exposure was responsible for this. History of smoking was present in 63.95 % patients, other Indian studies also noted majority of patients with lung cancer had history of smoking[8]. All types of lung cancer are associated with smoking with the association strongest for squamous and small cell carcinoma and modest for adenocarcinoma. Many factors related to tobacco smoking like number of cigarettes per day, duration of smoking, type and composition of cigarettes, degree of inhalation, and years of smoking cessation influence lung cancer risk and possibly determine the histology type[9]. Increase in adenocarcinoma rates in developed nations has been correlated with the increase in use of filtered cigarettes that encouraged deep smoke inhalation resulting in greater deposition of carcinogens in peripheral lung. Furthermore, the risk of lung cancer declines more rapidly for squamous cell carcinomas and less rapidly for adenocarcinomas following smoking cessation partly explaining the relative excess of adenocarcinoma in recent years[10]. The risk of lung cancer in former smoker remains high than never-smoker even after >40 years of abstinence[11].Cough was the most common presenting symptom (70.93 %), followed by anorexia and weight loss (63.95%), breathlessness (61.62 %) and chest pain (46.51%). Indian studies have shown similar clinical presentation[12,13]. Many patients remain asymptomatic for very long time owing to slow and silent growth of lung cancer or non-specific natures of lung cancer symptoms and present in advance stages[14].We noted well-defined mass (55.81%) as most common radiological finding, while lobar collapse (26.74%), thoracic metastases (24.42%), pleural effusion (22.09%) were other findings noted in present study. Alamoudi[15] noted lung mass as the most common radiological finding followed by pleural effusion. The most predominant histopathological subtypes were adenocarcinoma 56.97% and squamous cell carcinoma 25.58% followed by small cell lung carcinoma (9.3%) and undifferentiated carcinoma (5.81%). Studies from India[16] had reported squamous cell carcinoma as most dominant subtype, but many recent studies from India[17,18,19] too showing changing trends and reporting adenocarcinoma as the predominant subtype. This shift may be attributable to the changing smoking pattern and increasing incidence of lung cancer in females and nonsmokers[20]. Recently a growing trend of female lung cancer patients is reported, which need further studies to find out the etiological factors responsible. Carcinoma lung cancer patients presents with signs and symptoms similar to TB or COPD leading to patients presenting late to the specialized centers. A sincere effort

is needed to find out the etiology, prevent the risk factors, to diagnose early and treat effectively so that patients morbidities can be reduced.

## CONCLUSION

Onset of disease after 50 years, significant incidence in male patients, strongly associated history of smoking and adenocarcinoma as most common type were findings in present study. Carcinoma lung is highly preventable entity being smoking is most common causative factor. Government and many NGOs are also increasing public awareness for hazards of smoking, but more work is still needed.

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