

Original Research Article

# Clinico-pathological study of lung malignancies in Mahabubnagar District, Telengana

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## Abstract

**Background and objectives:** The objective of the present study was to study the the clinico-pathological profile of the lung cancer in Mahabubnagar.

**Materials and methods:** We performed a retrospective analysis of histopathologically proven cases of bronchogenic carcinoma admitted in our hospital from January 2011 to May 2016.

**Results:** Our study included 67 patients with confirmed cases of lung cancer. Male to female ratio was 1.7:1. The common age group was 40-60 years (52.2%). The most common histopathological type was Adenocarcinoma (38.8%) followed by Squamous cell carcinoma (31.4%). Endobronchial biopsy has more yields in squamous cell carcinoma 8 cases (38.1%), CT Guided biopsy has more yields in Adenocarcinoma 14 cases (53.8%), Small cell carcinoma 4 cases (66.7%), and in carcinoma in situ 6 cases (55.4%), pleural biopsy has highest yield in the diagnosis of malignant mesothelioma 1 case (100%). Among all the procedures CT Guided biopsy has the highest diagnostic yield 29 cases (43.2%).

**Conclusion:** CT guided biopsy has the highest yield for the diagnosis of lung malignancies especially if the tumour is peripherally located.

## Key words

Smoking, Lung cancer, Histopathology type, Squamous cell carcinoma.

## Introduction

Lung cancer is one of the commonest cancers and cause of cancer related deaths all over the world. It accounts for 13 per cent of all new cancer cases and 19 per cent of cancer related deaths worldwide. There were 1.8 million new lung cancer cases estimated to occur in 2012 [1]. In India, lung cancer constitutes 6.9 per cent of all new cancer cases and 9.3 per cent of all cancer related deaths in both sexes [2]. The overall 5-year survival rate of lung cancer is dismal with approximately 15 per cent in developed countries and 5 per cent in developing countries [3]. We undertook this retrospective review of patients diagnosed with lung cancer to assess the clinico-pathological pattern.

## Materials and methods

### Study setting

The present study was carried out at department of pulmonary medicine in SVS Medical College, Mahabubnagar.

### Data collection

This retrospective study was performed using a database with 67 patients of lung cancer who had been diagnosed at our hospital, during January 2011- May 2016. Only patients with a confirmed pathological cell type and adequate medical records were included for the analysis. For confirmation of diagnosis of lung cancer, majority of patients were subjected to fiber-optic bronchoscopy, percutaneous fine needle aspiration biopsy (FNAB) under imaging guidance and pleural biopsy.

### Statistical analysis

Data was analyzed by statistical package for social sciences (SPSS) Version 16.0. Numerical data was summarized by mean  $\pm$  standard deviation for continuous normal data and median  $\pm$  Inter-Quartile Range for continuous non normal data/ordinal data. Categorical data was summarized by count and percentages. The

association between categorical variables was done by Chi square test. All the P values less than 0.05 were considered as statistically significant.

## Results

This study included 67 patients with pathologically proven malignancy. The series included 42 male (62.7%) and 25 female (37.3%) patients. In less than 40 years of age NSCC was the commonest type, while SCC was common after 40 years of age. Age and sex distribution of these patients was shown in (Table – 1).

**Table - 1:** Demographic distribution of lung malignancies.

Age distribution	
< 40 years	< 40 years
40-60 years	40-60 years
>60 years	>60 years
Sex distribution	
Males	Males
Females	Females

Among NSCC the most common histopathological type was Adenocarcinoma 26 cases (44.83%), followed by squamous cell carcinoma 21 cases (19.70%), and Small cell carcinoma 6 cases (16.75%). Adenocarcinoma is most common in females 15 cases (22.38%) and common in 40 – 60 years of age group 13 cases (50%). Squamous cell carcinoma was more common in males 18 cases (26.9%) and common in males 5 cases (7.5%) and common in more than 40 years of age group 6 cases (100%). Carcinoma in situ was more common in males 6 cases (8.9%) and common in 40 - 60 years of age group 10 cases (90%) (Table - 2). Among all the diagnostic procedures Endobronchial biopsy has more yield in squamous cell carcinoma 8 cases (38.1%), CT Guided biopsy has more yield in Adenocarcinoma 14 cases (53.8%), CT Guided biopsy has more yield in Small cell carcinoma 4 cases (66.7%), CT Guided biopsy has more yield

in carcinoma in situ 6 cases (55.4%), pleural biopsy has highest yield in the diagnosis of malignant mesothelioma 1 case (100%) (Table – 3).

**Table - 2:** Pathological distribution of lung malignancies.

Type	Males	Females
Squamous cell carcinoma	18(26.9%)	3(4.5%)
Adenocarcinoma	11(16.4%)	15(22.38%)
Small cell carcinoma	5(7.5%)	1(1.5%)
Anaplastic carcinoma	1(1.5%)	1(1.5%)
Carcinoma in situ	6(8.9%)	5(7.5%)
Malignant mesothelioma	1(1.5%)	0(0%)

## Discussion

Most of our study belonged to the patients of age group between 40-60 years, with a male

predominance (M:F ratio 1.7:1) Similar observation has been reported by other Indian studies conducted by Notani, et al. in 1977 and Jindal, et al. in 1984 and Behera, et al. in 2004 [4-8]. The pattern of lung cancer has been changing. Lung cancer is being increasingly diagnosed in women and adenocarcinoma has over taken SCC as the most common histological cell type as seen in studies done by Quinn Daniel, et al. in 1996, Noronha, et al. in 2012 and Malik PS, et al. in 2013 [9-11]. Bronchoscopy is the most useful investigation in the evaluation of the patient suspected of endobronchial lung cancer. Tumors that were beyond bronchoscopic vision are difficult to reach and require the other technique [12]. Lung biopsy under CT guidance is the investigation of choice for peripherally situated lesions. In our study, the overall yield with bronchoscopy was 14.9% and with CT guided biopsy was 43.2%. CT Guided FNAC was 16.4% and Pleural biopsy was 25.3%.

**Table - 3:** Distribution based on the diagnostic procedure.

Procedure type	Squamous	Adeno	Small cell	Anaplastic	Carcinoma in situ	Malignant mesothelioma
Endobronchial biopsy	8 (38.1%)	1 (3.8%)	0 (0%)	1 (50%)	0 (0%)	0 (0%)
CT guided FNAC	4 (19.1%)	1 (3.8%)	1 (16.7%)	0 (0%)	5 (45.5%)	0 (0%)
CT guided biopsy	5 (23.8%)	14 (53.8%)	4 (66.7%)	0 (0%)	6 (54.5%)	0 (0%)
Pleural biopsy	4 (19.1%)	10 (38.5%)	1 (16.7%)	1 (50%)	0 (0%)	1 (100%)
Total	21 (100%)	26 (100%)	6 (100%)	2 (100%)	11 (100%)	1 (100%)

## Conclusion

Adenocarcinoma was the commonest lung malignancy and CT guided biopsy has the highest yield for the diagnosis of lung malignancies especially if the tumor is peripherally located.

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