Journal of Cardiovascular Disease Research
ISSN: 0975-3583, 0976-2833 VOL 15, ISSUE 11, 2024

A RETROSPECTIVE STUDY OF CLINICAL PROFILE OF CASES OF LUNG MALIGNANCY IN A TERTIARY CARE HOSPITAL

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Published on : 25 November 2024.

Abstract

Introduction: Lung cancer is the one of the common cancers 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. 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.

Materials and Methods: This retrospective observational study was conducted in the Department of Respiratory Medicine at GVPIHC&MT, Visakhapatnam. A retrospective analysis of medical records of the patients, who underwent for Fibre-Optic Bronchoscopy (FOB) from October 2023 to September 2024 was done. We collected data of clinical presentation, smoking status, chest X-ray findings, CT thorax reports, bronchoscopy findings, histopathology and cytology report. The study is conducted after approval by the institutional ethics committee.

Results: We had total 60 patients who underwent bronchoscopy. Their mean age was 63 (35-82) years. Out of 60, 45 were male and 15 were female. Out of 45 male patients 40 (57.5%) were smokers. Among smokers 11 (30.4%) patients had ≤20 pack years. 15 (43.47%) patients had 21-40 pack years and 9 (26.08%) patients had ≥41 pack years. Cough (62.5%), chest pain (57.5%), dyspnoea on exertion (27.5%) were the most common symptom followed by weight loss (17.5%), fever (15%) and haemoptysis (15%), hoarseness of voice (15%), back pain (12.5%) and decreased appetite (5%). Superior vena cava (SVC) obstruction was present in 2 (5%) patients at the time of hospitalisation.

Conclusion: Out of many diagnostic methods for lung malignancy, fibre optic bronchoscopy is easiest and safe method for early diagnosis. Though facility and trained staff not available for TBLB, endobronchial biopsy and BAL are useful in early diagnosis of lung carcinoma.

Key Words: Lung cancer, mortality, bronchoscopy, bronchoscopy, hoarseness of voice.

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. 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.[3] 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.[4]

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. 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]

To study the clinical profile of lung malignancy cases presenting to a tertiary care hospital in Visakhapatnam.

MATERIALS AND METHODS

This retrospective observational study was conducted in the Department of Pulmonary Medicine at GVPIHC&MT, Visakhapatnam. A retrospective analysis of medical records of the patients, who underwent for Fibre-Optic Bronchoscopy (FOB) from January 2023 to December 2023 was done. We collected data of patients who underwent bronchoscopy. We collected data of clinical presentation, smoking status, chest X-ray findings, CT thorax reports, bronchoscopy findings, histopathology and cytology report. The study is conducted after approval by the institutional ethics committee.

Study Design, population and Method: Retrospective Case study in the Department of Respiratory Medicine, GVPIHC&MT, Visakhapatnam.

Inclusion criteria:

1. Age more than 18 years
2. Diagnosed cases of Lung malignancy of any histological variant

Exclusion criteria:

1. Patients with significant co-morbid conditions affecting survival

2. Metastasis to lungs (Cases with primary malignancies in other organs)
3. Patients of age less than 18 years.

Sample Size: 60

$$n \geq \frac{Z^2_{1-\alpha/2} \times p(1-p)}{d^2}$$

Sample Size Calculation: Alpha (α) = 0.05
Estimated proportion (p) = 0.175
Estimation error (d) = 0.1

Patients with suspected lung mass on Chest X-ray or CT thorax were underwent Fibre-Optic Bronchoscopy (FOB) after written informed consent. Before FOB Detailed clinical history, physical examinations and investigations like complete blood counts, RFT (Renal function test), LFT (liver function test), Coagulation profile and ECG were carried out. Pre bronchoscopy preparations and bronchoscopy procedure were carried out as per guideline. Fibre-optic bronchoscopy was performed under local anaesthesia along with sedation with intravenous midazolam wherever required. Thorough examination of nasopharynx and larynx, vocal cords and trachea, carina and tracheobronchial tree were done. Bronchoscope was maneuvered into the normal bronchial tree first then on the abnormal side. If bilateral lesions were present, then bronchoscope was maneuvered first on right side. Samples were obtained after careful complete visualization of both sides. Biopsies were taken from intraluminal growths, Nodular lesion and irregular mucosa of bronchial wall for histopathological examinations. When the tumour was visible bronchoscopically, Bronchial wash were obtained by aspiration of any secretion and instillation, followed by immediate aspiration of two aliquots of 20 ml of sterile isotonic 0.9% saline solution at room temperature. Following this, EBB was performed with alligator forceps with serrated jaws. The biopsy material obtained by forceps was put into a container containing 10% formalin and it was sent for Histopathological examination. Bronchioalveolar lavage (BAL) was taken after biopsy procedure for cytological evaluations. Oxygen saturation was monitored during procedure with a pulse oximetry. Post bronchoscopy sputum were collected in sterile container within two hours of bronchoscopy and was also sent for cytological examination.

Statistical analysis: data will be organized using Microsoft Excel software and statistically analysed using SPSS 24 software.

RESULTS

We had total 60 patients who underwent bronchoscopy. Their mean age was 63 (35-82) years. Out of 60, 45 were male and 15 were female. Out of 45 male patients 40 (57.5%) were smokers. Among

smokers 11 (30.4%) patients had ≤20 pack years. 15 (43.47%) patients had 21-40 pack years and 9 (26.08%) patients had ≥41 pack years.

Cough (62.5%), chest pain (57.5%), dyspnoea on exertion (27.5%) were the most common symptom followed by weight loss (17.5%), fever (15%) and haemoptysis (15%), hoarseness of voice (15%), back pain (12.5%) and decreased appetite (5%). Superior vena cava (SVC) obstruction was present in 2 (5%) patients at the time of hospitalisation.

Symptoms	No. of cases (n=60)
Cough	46 (62.5%)
Chest pain	35 (57.5%)
Dyspnoea on exertion	16 (27.5%)
Weight loss	11 (17.5%)
Haemoptysis	9 (15%)
Hoarseness of voice	9 (15%)
Fever	9 (15%)
Back pain	7 (12.5%)
Decease appetite	3 (5%)

Table 1: Symptoms

Involved area in CT thorax	Right Side	Left Side
Upper lobe	12	16
Middle lobe	6	-
Lower lobe	10	4
Hilar	7	6
Pleural effusion	2	1

Table 2: Involved area in CT thorax

Procedure	Performed	Positive
BAL	60	12
Bronchial biopsy	60	35
FNAC	3	2
Post bronchoscopy sputum cytology	60	3

Table 3: Bronchoscopy procedures

Histological cell types	N	Percentage
Squamous cell carcinoma	10	17.5%
Adenocarcinoma	9	15%
Small cell carcinoma	1	2.5%
Non-small cell carcinoma	12	20%
Carcinoid	3	5%
Metastasis	1	2.5%

Table 4: Histological cell types

DISCUSSION

There are many diagnostic methods used for lung malignancy, Fibre-optic bronchoscopy is one of the safe methods.In present study mean age of patient was 63 years, while study conducted by Kumar et al., is 54.71 years. And in study conducted by Arun et al., is 60.91 years.[6]

In present study 45 patients were male, while 15 patients were female while in study done by Kumar et al., there were 37 male and 8 female while study by Arun et al., There were 46 male and 8 female. In the present study, 68.5% of the patients were smokers. No one of female participants was smoker.[7] A similar finding seen in study done by Bhavsar et al., (69%) and Kumar et al., (66%). Cough (77.5%), chest pain (57.5%), dyspnoea on exertion (27.5%) were the most common symptom. Similar observation seen in other studies. (Done by Arun et al., and Bhavsar et al.,). Yield of endobronchial biopsy is more as compared to BAL for histological diagnosis of lung malignancy. In our study we diagnostic yield of bronchoscopy is 60%. While study done by Arunet et al., is 59.26%. While in study done by Sharma et al., it was 30%.[8]

In present study most common histological type is squamous cell carcinoma, followed by adenocarcinoma. While many studies showed squamous cell carcinoma is the most common type in lung malignancy (By Kshatriya et al., Rabahi et al.,), while other study shows adenocarcinoma is most common. (Bhavasar et al). Among Smokers, Squamous cell carcinoma was more frequent histological subtype found. Similar Findings seen in many other studies. (By Bhavsar et al., Kumar et al., Kshatriya et al.,). Aadenocarcinoma was more seen in female and non-smoker male. In present study out of 6 females with lung malignancy diagnosed by bronchoscopy 1 female had diagnosis of adenocarcinoma.[9]

In present study upper lobe involvement is more and left lung involvement is more.Similar findings seen in study done by Rabahi et al., All patients were referred to cancer institute for further management.[10]

CONCLUSION

Out of many diagnostic methods for lung malignancy, fibre optic bronchoscopy is easiest and safe method for early diagnosis.

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