

## CLINICAL PROFILE OF PRIMARY LUNG CANCER AND ROLE OF BRONCHOSCOPY

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**ABSTRACT: INTRODUCTION:** Cancer is a Latin word meaning "A CRAB". The Greek word for a crab is "KARKINES" and Sanskrit word is "KARKARA".<sup>(1)</sup> Lung cancer is one of the commonest fatal neoplastic diseases in the world. It is at the first place at central and North India and at second place at south India. It is estimated that, every year in India, about 30,000 new lung cancer cases are registered.<sup>(2,3)</sup>

### INTRODUCTION:

- Lung cancer is most common in males in all urban registries.<sup>(2)</sup>
- Various factors like atmospheric pollution especially NO<sub>2</sub>, SO<sub>2</sub> and FeO<sub>2</sub> are producing a carcinogenic effect but especially cigarette tobacco smoking is by far the world's commonest cause. Occupational exposure to asbestos, radioactivity, arsenic and printing ink are also known to cause lung cancer.<sup>(4)</sup>

### ETIOLOGICAL FACTORS:

- I. Cigarette smoking<sup>(5,6)</sup>:
  - Cigarette smokers >cigar and pipe smokers.<sup>(7)</sup>
  - Number of packets.
  - Filter cigarettes.
  - Passive smoking.
- II. Age<sup>(8,9,10,11,12,13,14)</sup>
- III. Sex.
- IV. Residence:<sup>(15)</sup>
- V. Occupational factors.
  - Risk reduces as the duration of abstinence increases. After 10 yrs. of non-smoking, the risk approximates closely to that of non-smoker.<sup>(5)</sup>

### AIMS AND OBJECTIVES:

- To study.
- Clinical profile of patients with primary lung malignancies.
- Diagnostic efficacy of various methods.
- Co-relation of histopathological cell typing, with;
  - Age
  - Sex
  - location and
  - Smoking habits.

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### MATERIAL AND METHODS:

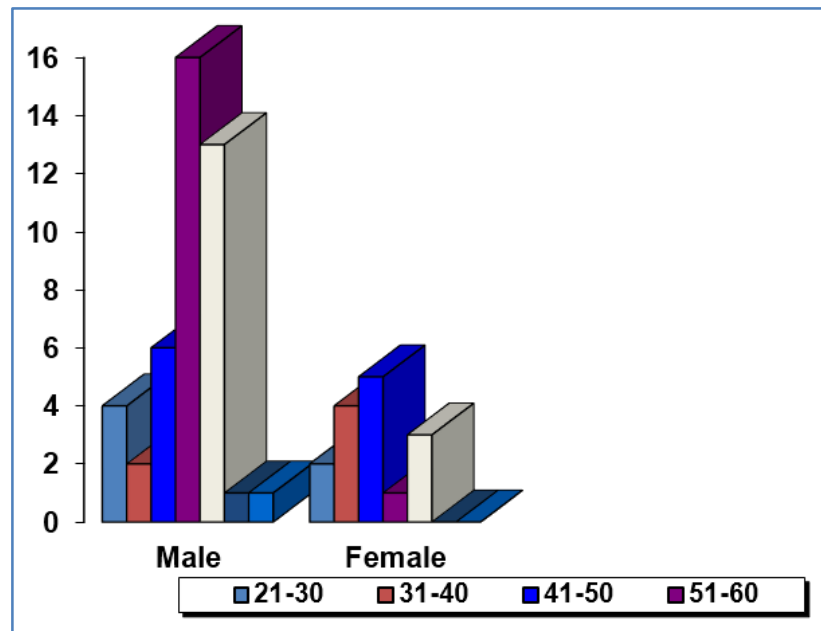
- 58 indoor patients.
- Having high index of clinical, radiological suspicion of carcinoma of lung.
- Histopathological examination was end diagnosis for lung carcinoma.
- Secondaries in the lung from known primary and histopathologically unproved cases were excluded.

### INVESTIGATIONS:

- Routine haemogram, serum electrolytes, sputum examination.<sup>(16,17,18,19,20)</sup>
- ECG.
- X-ray chest<sup>(21,14,22,23,24,25)</sup>
- USG - Abdomen for liver metastasis.
- Fibreoptic Bronchoscopy - For Bronchial aspirate, bronchial brushings, biopsy of visible growth or abnormal mass.<sup>(26,1,27,28,14,23,26)</sup>
- FNAC of lung mass (USG guided and unguided).<sup>(29,30,31,23,32,14,33)</sup>

### INVESTIGATIONS:

- Pleural fluid for cytology<sup>(34,35,36,26,14)</sup>.
- Pleural biopsy.
- Percutaneous L.N. FNAC<sup>(37,27,14)</sup>
- Lymph node biopsy.
- C.T Scan - Special investigation to demonstrate presence of metastasis or the symptoms where suggestive of metastasis in particular organ.

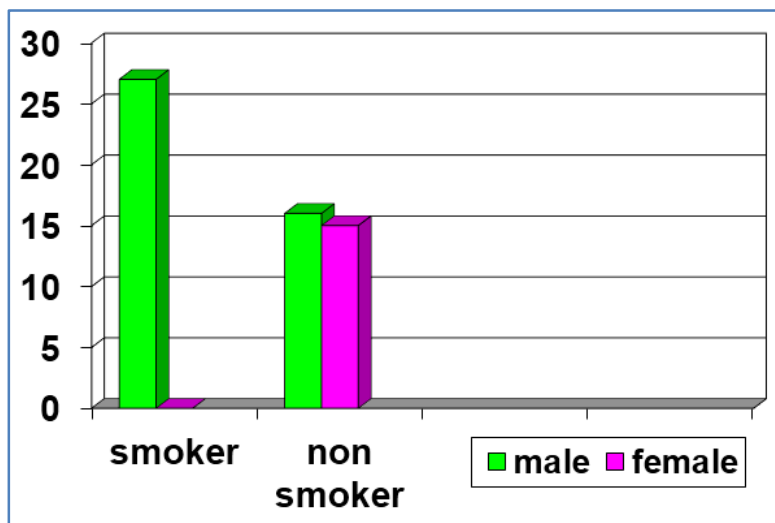


**Age and Sex Distribution**

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Symptoms	No. of patients	Percentage
Chest pain <sup>(28,38,14)</sup>	53	91.37
Cough	43	74.13
Breathlessness	42	72.41
Anorexia	31	53.44
Wt. loss	26	44.82
Fever	18	31.03
Haemoptysis	12	20.68
Dysphasia	8	13.79
Hoarseness	9	15.51
Bone pain	3	5.17
Swelling over face	2	3.44

**Incidence Of Symptoms**



**Incidence of smoking habits**

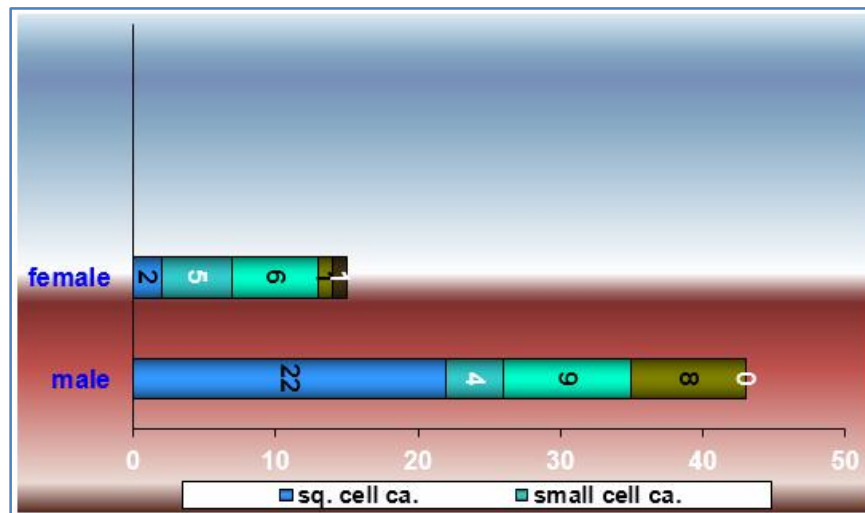
Sl. No.	Skigram feature	No. of patients	Percentage
1	Pleural effusion	27	46.55
2	Mass lesion	31	53.44
3	Cavity	2	3.44
4	Mediastinal widening	10	17.24
5	Diaphragmatic palsy	2	3.44
6	Secondaries in liver	10	17.24

**Radiological features**

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Sl. No.	Procedure	No. of pt. Undergone Procedure	Total No. of Positive Cases	Percentage
1	Sputum	58	4	6.89
2	Bronchoscopic aspirate	26	16	61.53
3	Bronchoscopic biopsy	26	20	76.92
4	Pleural fluid	27	17	62.96
5	Pleural biopsy	27	10	37.03
6	FNAC (mass)	36	33	91.66
7	FNAC (L.N.)	17	13	76.47
8	L.N. biopsy	5	2	40.00

Efficacy of diagnostic procedures showing evidence of malignancy



**Histological classification and sex wise distribution of lung cancer**

Histopathological cell type	Smoker	Non-smoker
Squamous cell ca.	15	09
Small cell ca.	03	06
Adeno ca.	03	12
Un classified	06	03
Others	00	01

Relationship between smoking habit and histopathological cell type

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### CONCLUSIONS:

- Incidence of lung carcinoma was found to be most common in the 6th decade. Male incidence was more than female (2.86:1).
- No relationship to occupation could be established in the present study.
- Chest pain, cough, breathlessness, Anorexia, Weight loss and Haemoptysis were common presenting symptoms.
- Lymphadenopathy, clubbing, superior vena cava obstruction were common clinical features.
- Chest radiography - high sensitivity, low cost and negligible risk hence it should be the starting point in detection of lung carcinoma
- Sputum has low sensitivity in diagnosis of lung ca.
- The yield of FNAC increases when prior localization of lesion is accurate by USG, biplanar fluoroscopy and by C.T.Scan or MRI.
- The detection of carcinoma lung could be early if patients with suspicious lesions in X-ray are investigated before starting the empirical treatment and the decision for properinvasive procedure are taken early.

### REFERENCES:

1. Bhende Y.H.: General pathology, Vol. II, 5th Edn. 1994,. Page 665.
2. B. B. Yeole – An epidemiological assessment of lung cancer in India NAPCON. Nov. 2001, Page. 184-188.
3. Seaton A, Seaton D, Gordon-Leitch A. Asthma. In: Crofton and Douglas's Respiratory diseases, 1<sup>st</sup> Indian edn. Delhi, Oxford university press, 1989; pp 660-714.
4. Seaton A, Seaton D, Gordon-Leitch A. Drugs used in respiratory disease. In: Crofton and Douglas's Respiratory Diseases, 1st Indian edn. Delhi, Oxford University Press, 1989; pp 192-269.
5. Alfred P. Fishman Epidemiology of cancer of the lung, pulmonary diseases and disorders. 1998, 1707-8.
6. Capwell S, Sankaran R, Lamb D, Lung cancer in life long non-smokers Edinburgh lung cancer group. Thorax 1991; 46: 565-568.
7. John H. Holbrock: Nicotine addiction in Harrison's principles of internal medicine, K.J. Isseibacher, E braunwald, JD Wilson, JB Martin, A.S.Fauci, D.L. Casper. New York M.C.Graw Hill, 1994, 2433-2437.
8. A. M. Washington, Robert Buchiley: Further evidence on a proposition by Prof. Passey. Lancet July 1964; P. 36-40.
9. Le Roux B.T.: Bronchial carcinoma. Edinburgh, London, E. & S. Livingstone, 1968.
10. Guleria J. S., Gopinath N., Talwar J. R., Bhargava S., Pande J. N., Gupta K. G.: Bronchogenic carcinoma - an analysis of 120 cases. J. Assoc. Physicians Ind. 18,: 251-254, 1971.
11. Jindal S. K., Behera D.: Clinical spectrum of primary lung cancer - Review of Chandigarh experience of 10 years. Lung India 8: 94-98.

## ORIGINAL ARTICLE

12. Crofton and Douglas' Respiratory diseases. Edited by Anthony Seaton. Douglas Seaton and A. Gordon Leitch. Diagnostic procedures. P. 142-191, Cancer of the lung P. 563-567 & 912-1110.
13. Jain N. K., Madan A., Sharma T.N., Saxena A.: J. Assoc. Physicians India. 37: 379-82, 1989.
14. P. N. Chhajed et al: Clinical and pathological profile of 73 patients with lung carcinoma. JAPI, 1999.
15. Jindal S. K., Malik S.K., Gujral J. S. et al: Bronchogenic carcinoma in Northern India. Thorax 37: 343-47, 1982.
16. R. Khemp: Techniques in needle biopsy. Radiology 1971; 100: 285-287.
17. Vishwanath R. Sengupta: IJCD 3: page 193, 1961.
18. Brantigan L.W. et al: Biopsy of nonpalpable scalene L.N. in Ca lung Am. Rev. of resp. Diseases. 1973, 107: 962.
19. Yacoub M. H.: Relation between histology of bronchogenic carcinoma and HPOA. Thorax 20: 537, 1965.
20. Goel M. K. et al: The importance of prebronchoscopic sputum, bronchial aspirate and post bronchoscopic sputum in the diagnosis of lung tumours. Lung India. 1996-15.
21. Shields T. W.: Carcinoma lung in Gen. thoracic surgery. page 797-811, 1972.
22. William Umiker: Relative accuracy in diagnosis of carcinoma of lung. JAMA 1966; 195/8: 145-50
23. Richard A. Bordow, Kenneth M. Moser: Manual of clinical problems in pulmonary Medicine 1991, P. 33-44, P. 443-466. Quotation of [1] Paul J. Friedman [2] Petger F. Fedullo [3] Schenk D.A. et al,
24. Sengupta et al: Incidence of lung cancer in India. Indian J. of Chest Diseases. 1971; page 198-206.
25. Waiten J.H.: Brains diseases of nervous system quoted by Walten 8th edition page 867, 1978.
26. G. Fraser, J. A. Peter Pare, Richard S. Frazer, George P. Genereuz, Diagnosis of diseases of the chest. 1989 J. (Quotation of following references 1) Mayo clinic procedure (2) Miller, 1967 (3) Anderson (4) Masting (5) Auerbach 1978 (6) Watson. (7) Taft PD 1980. Special diagnostic procedure, Vol. 1, 406-412. Neoplastic diseases of the lungs Vol. II.
27. Jha V. K. Ray D. C., Ravindran P.: Bronchogenic Carcinoma - A clinicopathological study. Ind. J. Chest Diseases. 14: 78-85, 1972.
28. D. D. S. Kulpati et al: Flexible FOB in endoscopically visible bronchogenic Carcinoma: Ind. J. of Chest dis. and Allied Science Vol. 27, 1985.
29. I. Rubin: Proceedings of thoracic society. Thorax 1977; 32: 643-652.
30. Muray John F. and Nadel Jay: A text book of Res. Medicine page 1169, 1270.
31. Schenk D.A., Bryan C.L., Bower J.H. Myers D.L.: Transbronchial needle aspiration in the diagnosis of bronchogenic carcinoma chest 92 (1), 83-85. 1987, July.
32. J. C. Suri, A. Goel et al: Safety and efficacy of unguided transthoracic FNAB in out-door patients.: Ind. J. of Chest dis. & Allied Sci. Vol. 33, No. 3, 1991.

## ORIGINAL ARTICLE

33. Dash B. K. et al: Comparison of Accuracy and Safety of CT aided and unguided transthoracic FNAC in diagnosis of lung lesions, JAPI, 2001 49, (June).
34. Fraser, Pare: Diseases of Chest (Synopsis). Page 405-432, 101-162, 1983. Quotation of following references: [1] Miller, 1967; [2] Andersen; [3] Marting, [4] Auerbach, 1978; [5] Watson.
35. Fabio Barboae et al: Cigarette smoking and histologic type of lung cancer in men. Chest 1997. Vol. 112.
36. Edward J. Peters et al: Squamous metaplasia of the bronchial mucosa and its relationship to smoking. Chest 1993 (May), Vol. 103.
37. Robert Jamplis, Mills: Scalene fat pad biopsy. Thoracic and Cardiovas Surg. 1962; 441: 27-35
38. Tayade B. O.: Study of superior vena cava syndrome aetiopathology, diagnosis and management. JAPI 1994, Vol. 42, No. 8.

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