

Clinical profile of lung cancer patients

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Abstract

Background: lung cancer is a fatal cancer. In countries like India the incidence and mortality rates show a rising trend. It is having poor prognosis. Clinical presentation of patients vary in almost all cases. **Aim and Objective:** To study clinical profile of patients with primary lung malignancies. **Material and Methods:** study was carried out in 58 indoor patients, who were having high index of clinical, radiological suspicion of carcinoma of lung. All patients were studied for history, clinical examination, routine blood investigations and selected patients underwent other diagnostic methods. **Results and Discussion:** Male urban to rural ratio was 1:2.8 while female urban to rural ratio was 1:6.5. Chest pain (91.37%), cough (74.13%), breathlessness (72.41%), Anorexia (53.44%), Weight loss (44.82%) and Haemoptysis (20.68%) were common presenting symptoms. Lymphadenopathy (37.93%), clubbing (24.13%), superior vena cava obstruction (18.96%) were common clinical features. **Conclusion:** Age of 50 yrs or more and male sex is a risk factors for lung cancer. squamous cell carcinoma was predominant in followed by adenocarcinoma. Chest pain is the commonest symptom. Tobacco smoking of 20 pack years or more is significantly associated with an increase in the incidence of lung cancer.


Key Words: lung cancer, chest pain.

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INTRODUCTION

Cancer is a Latin word meaning "A CRAB". The Greek word for a crab is "KARKINES" and Sanskrit word is "KARKARA"¹. Lung cancer is regarded by the World Health Organization as a leading cause of death globally. Various risk factors have been implicated for the rising trends in lung cancer. Cigarette tobacco smoking is by far the world's commonest cause. Overall survival for a diagnosed case of lung cancer is not more than 5 yrs and it is only 5-10%. In countries like India the incidence and mortality rates show a rising trend. Lung cancer is most common in males in all urban registries. The life time risk

(30-74 yrs) of developing lung cancers varies widely. In developed countries alone it ranges from 3-14% in males and less than 1% to 10% in females². The clinical presentation usually depends on the location, extent of tumour. The prognosis ultimately depends on the tumour histology, staging, type of treatment used and the performance status of the patient. Limited data are available on lung cancer epidemiology in India. This study aimed to determine the profile of patients with lung cancer who were seen at a tertiary hospital.

MATERIAL AND METHODS

This study was carried out in 58 indoor patients, who were having high index of clinical, radiological suspicion of carcinoma of lung during the period January 2000 to March 2002, at tertiary care hospital.

Inclusion Criteria: Patients with positive end diagnosis of lung carcinoma proved by Histo pathological examination.

Exclusion Criteria:

1. Secondaries in the lung from a known primary.
2. Diagnosis could not be proved histopathologically.
3. Patients not willing for diagnostic procedure.

Pre tested questionnaire was used to collect data from the patients. It includes Nourishment
 Body weight, Clubbing, Pallor, Hypertrophic pulmonary osteoarthropathy, Lymphadenopathy – sites, Signs of superior vena cava obstruction, Nerulogical deficit. And Extra pulmonary metastatic and non metastatic manifestations. Investigations like Haemogram, BSL, BUL, LFT, Urine, Serum Electrolytes, Bleeding time,

clotting time and prothrombine time, Blood grouping and cross matching were done. Investigations for lung cancer were Sputum, X-ray Chest Ultra sonography of Chest done in all cases. In selected cases ECG, USG - Abdomen (liver metastasis), Fibre Optic Bronchoscopy were done. Special investigations to demonstrate presence of metastasis were done only when, the symptoms were suggestive of metastasis in particular organ.

RESULTS

Table 1: Distribution of patients according to age and sex

| Age Group in years | No. of patients | | Total | Percentage |
|-----------------------------|-------------------|-------------------|-----------|------------|
| | Male | Female | | |
| 21-30 | 4(9.30%) | 2(13.33%) | 6 | 10.34% |
| 31-40 | 2(4.65%) | 4(26.66%) | 6 | 10.34% |
| 41-50 | 6(13.95%) | 5(33.33%) | 11 | 18.96% |
| 51-60 | 16(37.20%) | 1(6.66%) | 17 | 29.31% |
| 61-70 | 13(30.23%) | 3(20.00%) | 16 | 27.58% |
| 71-80 | 1(2.32%) | -- | 1 | 1.72% |
| 81-90 | 1(2.32%) | -- | 1 | 1.72% |
| Total and Percentage | 43(74.13%) | 15(25.86%) | 58 | |

Table 2: Incidence (frequency) of various symptoms in cases of lung cancer

| Symptoms | No. of patients | Percentage |
|---------------------|-----------------|------------|
| Chest pain | 53 | 91.37 |
| Cough | 43 | 74.13 |
| Breathlessness | 42 | 72.41 |
| Anorexia | 31 | 53.44 |
| Weight loss | 26 | 44.82 |
| Fever | 18 | 31.03 |
| Haemoptysis | 12 | 20.68 |
| Dysphagia | 8 | 13.79 |
| Hoarseness of voice | 9 | 15.51 |
| Asymptomatic | 3 | 5.17 |
| Bone pain | 3 | 5.17 |
| Swelling over face | 2 | 3.44 |

Table 3: Distribution of patients according to sign's observed due to metastatic and nonmetastatic manifestations

| | Signs | No. of | Percent |
|----------|-----------------------------------------------------|----------|---------|
| | | patients | age |
| General | Clubbing | 14 | 24.13% |
| | Hypertrophic pulmonary osteoarthropathy | 3 | 5.17% |
| | L.N. Pathy | 22 | 37.93% |
| | Horner's syndrome | 3 | 4.17% |
| | Skin nodules and pigmentation | 2 | 3.44% |
| | SVCS | 11 | 18.96% |
| | Pancoast's syndrome | 2 | 3.44% |
| Systemic | Pleural effusion | 27 | 46.55% |
| | Vocal cord palsy (laryngeal nerve involvement) | 5 | 8.62% |
| | Diaphragmatic paralysis (Phrenic nerve involvement) | 2 | 3.44% |
| | Liver involvement | 10 | 17.24% |
| | CNS involvement | 2 | 3.44% |

Table 4: Distribution of patients according to smoking habits

| Smoker | | | Non smoker | | |
|-------------|------------|-------------|-------------|-------------|-------------|
| Male (%) | Female (%) | Total (%) | Male (%) | Female (%) | Total (%) |
| 27 (46.55%) | 0 (0%) | 27 (46.55%) | 16 (51.61%) | 15 (48.38%) | 31 (53.44%) |

Table 5: Distribution of patients according to duration of smoking and type smoked

| Bidis / Cigarettes | No. of patients smoked for a period of | | | | Total | Percentage |
|--------------------|----------------------------------------|-----------|-----------|----------|-----------|------------|
| | <10 yrs | 11-20 yrs | 21-30 yrs | >30 yrs | | |
| Bidis | 0 | 4 | 11 | 4 | 19 | 70.37% |
| Cigarettes | 0 | 2 | 2 | 0 | 4 | 14.81% |
| Bidis + Cigarettes | 0 | 2 | 2 | 0 | 4 | 14.81% |
| Total | 0 | 8 | 15 | 4 | 27 | |

Table 6: Distribution of patients according to Histological classification of lung malignancies

| Type | No. of patients | Percentage |
|-------------------------|-----------------|------------|
| Squamous cell carcinoma | 24 | 41.37% |
| Adenocarcinoma | 15 | 25.86% |
| Small cell carcinoma | 9 | 15.51% |
| Unclassified carcinoma | 9 | 15.51% |
| Others | 1 | 1.72% |

It was observed that out of 58 cases, 43 (74.13%) cases were males and 15 (25.86%) cases were females. Males outnumbered the females and the male to female ratio was 2.86:1. The age of the patients ranged from 23 to 85 years. The maximum number 17 (29.31) patients were in the age group of 51-60. Amongst the remaining cases, 6 patients (10.34%) were below 30 yrs of age and 29.31% patients were above the age of 60 yrs (Table 1). Most of the patients (75.86%) were from rural area and only 24.13) were from urban area. Male urban to rural ratio was 1:2.58 while female urban to rural ratio was 1:6.5. Most of the cases were having chest pain (91.37%). The other symptoms observed in descending order of incidence were cough in 74.13%, Breathlessness in 72.41% Anorexia in 53.44%, weight loss in 44.82%, fever in 31.03%, Haemophysis in 20.68%, Dysphagia in 13.79%, Hoarseness of voice in 15.51%, Asymptomatic 5.17%, Bone pain in 5.17% and Swelling over face in 3.44% of the cases (Table 2). Most of the patients (55.17%) had duration of disease less than 1 month, and 31.02% cases had more than 2 months duration. Out of 58 cases, General practitioner referred 26 patients between 1-4 months of duration after the onset of symptoms. Amongst them 13 (22.41%) patients had received anti tuberculous treatment and were treated empirically as pulmonary tuberculosis. Average time of reaching the diagnosis after the onset of symptoms was 2-3 months. It was observed that, maximum No. of cases presented with metastatic stage. Amongst them pleural effusion was in 46.55% cases, lymphnode enlargement in 37.93%, clubbing in 24.13%, superior vena cava obstruction in 18.96%, Liver involvement in 17.24%, and Vocal cord

palsy was seen in 8.62% cases. Pancost's syndrome was seen in only 3.44%. Remaining patients presented with Horner's syndrome 4.17%, skin nodules and pigmentation in 3.44% respectively. Only two patients (3.44%) one each presented with convulsions and paraplegia respectively Suggestive of CNS involvement (Table 3). It was observed that out of 58 patients 31(53.44%) patients never smoked. All females and 16 males were non smokers. 27 males (46.55%) were smokers. It was observed that 15 patients (55.55%) were having high index smoking for more than 21-30 yrs. While 8 patients (29.62%) were smoking for 11-20 yrs. Rest of the patients (14.81%) had history of smoking for more than 30 yrs (table 4 and 5). All patients were investigated for sputum for malignant cells. It was found that only 4 cases (6.89%) showed positivity for malignant cell. Remaining (93.10%) showed negativity for malignant cell. It was observed that out of 58 patients, squamous cell carcinoma was predominant in 41.37% cases; followed by adenocarcinoma in 25.86% cases, small cell carcinoma in 15.51% cases, and unclassified carcinoma in 15.51% cases. Non hodgekin's lymphoma was seen in one (1.72%) case (Table 6).

DISCUSSION

In the present study patients age ranged from 23 to 85 yrs. The majority of cases (29.31%) were in the age group of 51-60 yrs. this study showed a male to female ratio of 2.86:1. Similar results were observed in Parsey study (1964)³ where mean incidence of age was 4th - 5th decade with male to female ratio of 5:1 in P.N. Chhajed *et al* (1999)⁴ showed mean age incidence in 5th -6th decade.

Male to female ratio was 4.2:1. In S.D. Maasdrop *et al* (2015)⁵ the ratio was 3:1. In the present series, there was a higher incidence of bronchogenic carcinoma in patients from rural areas. Male urban to rural ratio was 1:2.8. Female urban to rural ratio was 1:6.5 This showed that incidence of lung cancer is increasing in rural area. However Jindal *et al* (1982)⁶ observed equal No. of rural and urban dwellers in their series. Most of the cases (91.37%) were having chest pain. However J. S. Guleria *et al* (1970)⁷ found only 42.25%. In B.O.Tayade *et al* (1994)⁸ 75% patients complaints of chest pain. Dry cough was second commonest symptom encountered in present study. It was present in 43 (74.13%). It was not related to any particular time or posture. Jindal *et al* (1982)⁶ reported 88% patients having cough, P.N. Chhajed *et al* (1999)⁴ reported 61% patients presenting with cough. Breathlessness was present in 42 (72.41%) patients. The most common cause was massive pleural effusion with collapse and underlying lung lesion. Breathlessness was mostly seen in squamous cell carcinoma. W.K.Lam *et al* (1983)¹⁰ described breathlessness to be the commonest symptom in patients with adenocarcinoma. Weight loss was complained by 26 (44.82%) similar results were observed in P.N.Chhajed *et al* (1999)⁴ in Mishra *et al* (2016)¹¹ Anorexia (65.8%) and Weight loss (57.9%) were the commonest general symptoms and more commonly seen among older age groups (61-80 yrs) and (>80yrs) Haemoptysis in this series was seen in 12(20.68%) patients. Presentation was with blood streaked sputum, but massive haemoptysis was not encountered. Haemoptysis was found in patients with squamous cell carcinoma. This could be explained by the frequent occurrence of squamous cell carcinoma in central location, its tendency to cavitate or form lung abscess. Frequency of haemoptysis found in other studies were 61% in Le Roux *et al* (1968)¹² 24 % in P.N. Chhajed *et al* (1999)⁴ The duration of disease was estimated by the time interval between onset of first symptoms and admission to the hospital. Maximum No. of cases (55.17%) had less than one month of their symptoms. General practitioner referred 18 cases between 2-4 months for further investigations. 32 patients were diagnosed in less than one month at the specialist level. Amongst 58 patients, 50(86.20%) were diagnosed within 2-3 of their symptoms and 54 (93.10%) were diagnosed within 6 months of their symptoms. Remaining 4 patients took more than 6 months for their diagnosis. Amongst the 58 patients, 13 patients were receiving antitubercular chemotherapy on the basis of radiological lesion for a variable periods of 1-6 months. Average time in reaching a diagnosis in different study is: Buchsery *et al* (1975)¹³ in 1-5 month and Oschner *et al* (1956)¹⁴ in 12-30 month. Clubbing was seen in 14 (24.13%) of cases. Most frequently seen in

squamous cell carcinoma (64.28%), followed by small cell carcinoma (21.42%) and adenocarcinoma (14.28%). Clubbing was mostly grade III or IV. Leroy Hyde *et al* (1974)¹⁵ observed clubbing most frequently in squamous cell carcinoma. Hypertrophic pulmonary osteoarthropathy was seen in 3(5.17%) patients of squamous cell carcinoma. However Chhajed *et al* (1999)⁴ found hypertrophic pulmonary osteoarthropathy in only one patient who had a pathological diagnosis of adenocarcinoma. Ya Couh M.H. *et al* (1965)¹⁶ found 4-12% of patients of hypertrophic pulmonary osteoarthropathy in bronchogenic carcinoma. Commonly distal segments of shafts of long bones were affected (Knoles J.H. *et al* 1960)¹⁷ described HPOA, in 2% of patients with squamous cell carcinoma, 0.7% patients with adenocarcinoma, 9% patient with large cell carcinoma. HPOA was not found in small cell carcinoma in present study. Lymphadenopathy was present in 37.93% of patients. All patients presented with significantly enlarged, hard, fixed, non tender, supraclavicular, and cervical Lymphnode Leroy Hyde *et al* (1974)¹⁵ found 15-20% of patients during the course of lung cancer. P. N. Chhajed *et al* (1999)⁴ found 42.5% lymph node metastasis, most common in squamous cell carcinoma. In present series the findings are similar to P.N. Chhajed group. The incidence superior vena cava syndrome in our study was 11 (18.96%). In our study it was most commonly seen in small cell carcinoma (36.36%) followed by squamous cell carcinoma (27.27%) and adenocarcinoma (27.27%). In veteran administration study series (Leroy Hyde *et al* 1974)⁶⁵ SVCS was present in 4% cases. Lam *et al* (1986)¹⁰ also described SVC syndrome to be most common in small cell carcinoma (18%). Pleural effusion was seen in 27(46.55%) patients. In our study it was most commonly seen in squamous cell carcinoma (29.62%) and unclassified carcinoma (29.62%) followed by small cell carcinoma. Guleria *et al* (1975)⁷ reported 22.22% incidence of pleural effusion in lung cancer. P.N.Chhajed *et al* (1999)⁴ reported 23.3% incidence and adenocarcinoma as the main cause. Vocal cord paralysis was seen in 5 (8.62%) patients. N.K.Jain *et al* (1989)¹⁸ reported incidence of 9% in their study. P.N.Chhajed *et al* (1999)⁴ reported 13.7% incidence. Recurrent laryngeal nerve involvement was only seen in central tumours in all our patient. In our study the incidence of liver involvement was 10(17.24%). Leory Hyde *et al* (1974)¹⁵ reported lung cancer metastasis to liver in 35% cases. In our study liver metastasis was commonest in adenocarcinoma (60%). P.N.Chhajed *et al* (1999)⁴ reported 17% incidence of liver metastasis, 30% squamous cell carcinoma and 65% of small cell carcinoma type. CNS involvement was seen in 2 (3.44%) cases. These patients presented with convulsions and

paraplegia. Lam *et al* (1983)¹⁰ reported 4% incidence of CNS involvement. P.N.Chhajed *et al* (1999)⁴ in their study reported 9.6% incidence and most commonly in small cell carcinoma (42.9%). In our study the smoker to non smoker ratio was 0.86:1. Other studies showed similar incidence like Jha *et al* (1972)¹⁹ where ratio was 0.9:1 and P.N.Chhajed *et al* (1999)⁴ with ratio of 2.17:1. In our study Bidi smokers (70.37%) were outnumbered than cigarette smokers. V.K.Jha (1972)¹⁹, found a lung cancer ratio of 1.4:1 among rural male and female smokers. D. Behera (1992)²⁰ concludes that the risk of lung cancer is reported to be higher in Bidi smokers than cigarette smokers. In our study maximum smokers had duration of smoking more than 20-30 yrs. (55.55%). In S.D. Maasdrop *et al* (2015) Most were recurrent or previous smokers and 31 (33.7%) had a smoking history of at least 30 pack years.

CONCLUSION

Age of 50 yrs or more and male sex are still a risk factors for lung cancer. Tobacco smoking of 20 pack years or more is significantly associated with an increase in the incidence of lung cancer in rural males. The relatively non availability of smokeless and fully combustible fuels for domestic use to rural females accounted for greater number of lung cancer in rural females than urban females.

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