Clinical Manifestations of Lung Cancers A Prospective Observational Study

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ABSTRACT

Background: Since 1985, lung cancer has been diagnosed more frequently than any other type of cancer. Lung cancer's clinical manifestations are caused by the tumor's local growth, regional growth or lymphatic system dissemination, haematogenous distant metastatic spread, and remote paraneoplastic effects. The majority of organs can be impacted by distant metastatic illness. The majority of individuals had lung to lung metastases, brain metastasis, and bone metastasis. **Aim:** Clinical profile of patients of Lung carcinoma in District Kathua of UT of J&K. **Materials and methods** : This study was a prospective observational and one point analysis. The study group comprised of CA lung patients who were admitted or presented to OPD in GMC Kathua. **Results** : A total of 54 patients were taken up for this study. Majority of the patients were in the age group of 46 to 75 years. Metastatic pattern had been observed in 42 patients. Among 42 patients having metastasis 42.8% had brain metastasis, 38.09% patients had metastatic pleural/pericardial effusion, 11.9% patients had bone metastasis, 4.76% patients showed lung to lung metastasis and rest of the patients presented with distant metastasis.**Conclusion**: Mostly death in the lung cancer is due to the extra thoracic metastasis . When a patient presents with a single tumor or multiple tumors, with or without known primary cancer, clinicians should be alert to the possibility primary cancer metastases, and a biopsy of the suspicious lesion should be obtained to aid the histological identification of primary cancer and various radiological scans should be used as an effective tool for diagnosis and evaluation.

Key words : lung , cancer, metastatis

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INTRODUCTION

Lung cancer is the most commonly diagnosed cancer annually since 1985. Worldwide, there are 1.61 million new cases of lung cancer per year, with 1.38 million deaths, making lung cancer the leading cause of cancer-related mortality[1]. In India, lung cancer constituted approximately 41,000 new cases in the year 2001 [2]. The projected lifetime probability of developing lung cancer is estimated to be approximately 8% among males and 6% among females [3].

The clinical profile of lung cancer in India differs from that of the west, as Indian patients present almost 15-20 years earlier, in the 5th or 6th decades of life [4]. Furthermore, squamous cell carcinoma continues to be the commonest histological type in India whereas adenocarcinoma is gradually becoming the predominant subtype in the western world[5].

Majority of the lung cancer cases have been convincingly proved to be associated with smoking habits. Of all lung cancer deaths, 85% are attributable to smoking tobacco which contains harmful carcinogens. The smoking habits of Indians are unique and different from that observed in the western society. Tobacco in our country is used in various forms such as the cigarette, *bidi, hooka, chutta, chillum* and *pan masala*. *Bidi*smoking, which is extremely common in rural India, carries a higher risk of lung cancer compared to cigarette smoking[6]. Increasing trend observed in the smoking rates among teenagers has been a cause of concern.

Even if smoking rates among teenagers decrease dramatically now, the problem of lung cancer would continue to persist in our society for decades [7]

The clinical manifestations of lung cancer result from the effects of local growth of the tumor, regional growth or spread through the lymphatic system, hematogenous distant metastatic spread, and remote paraneoplastic effects from tumor products or immune cross-reaction with tumor antigens.

Local growth in a central location can cause cough, hemoptysis, or features of large-airway obstruction. Peripheral growth can also cause cough and dyspnea. If the pleura or chest wall becomes involved, pain can occur. Regional growth can lead to esophageal compression (dysphagia), recurrent laryngeal nerve paralysis (hoarseness), phrenic nerve paralysis with an elevated hemidiaphragm (dyspnea), and sympathetic nerve paralysis leading to Horner's syndrome (ptosis, miosis, anhidrosis, and enophthalmos). Apical growth can lead to Pancoast's syndrome, with shoulder pain radiating in an ulnar distribution. The superior vena cava can become obstructed and the heart and pericardium can become involved. Lymphatic obstruction and spread can lead to dyspnea, hypoxia, and pleural effusions.

Distant metastatic disease can affect most organs. Neurologic symptoms can suggest brain metastases or spinal cord compression, and pain could indicate bone metastases. Laboratory abnormalities can point to bone marrow or liver involvement. Imaging might detect adrenal involvement.

MATERIALS AND METHODS

The present study was conducted in the Department of Medicine in association with Department of Radiation Oncology , Government Medical College, Kathua for a period of one year, *w.e.f.* January 2021 to January 2022. The study was prospective observational study. A total of 54 patients having histopathological documentation of lung cancer, registered under RCC and referred from various departments of the institute and from other hospitals of the region were included in the study.A detailed history was taken in each case which included the chief complaints like duration, the risk factors and the associated diseases

RESULTS

Following observations were made:

Out of 54 patients taken up for this study, 42 were males and 12 were females.Following smoking patterns were observed , cigarette alone was smoked by 24 patients, bidi by 16mixed by 10 (16.25%) and hukkah by 2 (3.75%) patients. Two housewives were exposed to domestic smoke *i.e.*chullah smoke while cooking.

Majority of the patients were in the age group of 46 to 75 years (81.25%).The age of onset of smoking was taken into consideration and it was observed that most of the lung cancer patients started smoking at very young age. Out of all smokers, 80.89% started smoking when they were less than or equal to 20 years. One patient started smoking after the age of 30 years and the rest started smoking between 21 to 30 years of age.

As observed in the above table, many patients had more than one symptoms and signs simultaneously. Those patients had varied clinical presentation with cough – productive and dry, dyspnoea, hemoptysis, chest pain, fever being the major presenting symptoms. Cough productive in 13 (24.07%) and dry in 12 (22.22%) patients was the commonest symptom observed. Dyspnoea was observed in 23 (42.60%) patients. Haemoptysis was observed in 20 (37.03%), chest pain in 19 (35.18%) and fever in 13 (24.07%).

Other symptoms observed were weight loss, generalized weakness and loss of appetite in 9 (16.67%) patients each, clubbing was present in 8 (14.8%), wheezing/stridor in 7 (12.96%), bone pain in 5 (9.27%) patients, hoarseness of voice was observed in 3 (5.5%) patients. Dysphagia was observed in 1 (1.8%) patients, while 1 (1.8%) patient had SVCO.Four (5%) presented with hemiparesis, 1 (1.25%) with paraparesis and 2 (2.50%) had seizures/altered sensorium at the time of presentation. Histopathological profile of the patients revealed that majority (72.2%) had squamous cell carcinoma 7.4% each had small cell carcinoma and 16.67% adenocarcinoma . Anaplastic carcinoma was seen in 3.7% patients.

In our series, metastatic pattern had been observed in 42(77.78%) patients. Out of 42 patients 38.09% patients had metastatic pleural/pericardial effusion and 4.76% patients showed lung to lung metastasis.Rest of the patients presented with distant metastasis. 42.8% had brain metastasis, 11.9% patients had bone metastasis, including 1 patient with metastasis to cervical spine and 1 patient with metastasis to lumbar spine. 2 patients had metastasis to liver. Out of these 1 patients, only 1 patient had metastasis only to liver. One patient presented with metastasis toliver and bones simultaneously .

Table 1: Sex distribution of patients

Sex	Number of patients	Percentage (%)
Male	42	77.78
Female	12	22.22
Total	**54**	**100.00**

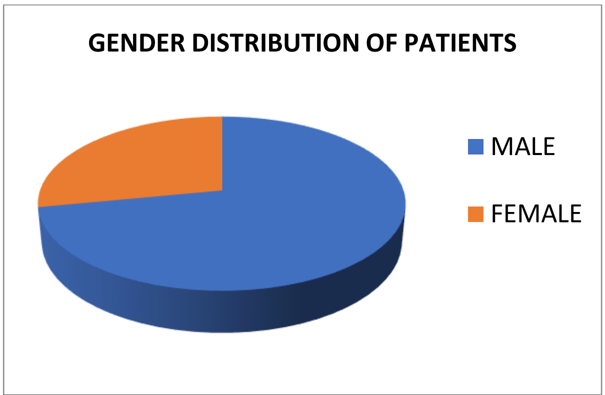

Table 2: Distribution of patients according to clinical presentation (n=80)

Clinical presentation	Number of patients	Percentage (%)
Cough Productive: Dry:	25 13 12	46.29 24.07 22.22
Dyspnoea	23	42.6
Hemoptysis	20	37.03
Chest pain	19	35.18
Fever	13	24.07
Weight loss	9	16.67
Generalized weakness	9	16.67
Loss of appetite	9	16.67
Clubbing	8	14.8
Wheezing/stridor	7	12.96
Bone pain	5	9.2
Hoarseness	3	5.5
Dysphagia	1	1.8
SVCO	1	1.8

Table 3 Distribution of patients according to histopathology of lung cancer

Histopathology of lung cancer	Number of patients	Percentage (%)
Squamous cell carcinoma	39	72.2
Small cell carcinoma	4	7.4
Adenocarcinoma	9	16.67
Anaplastic carcinoma	2	3.7
Total	**54**	**100.00**

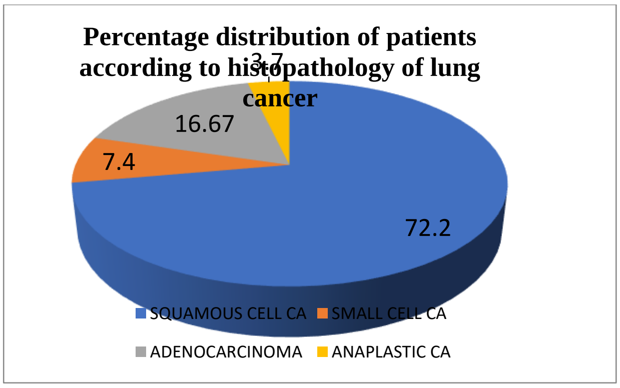

Table 4: Showing Distribution of patients as per organ metastasis

Organ of Metastasis	Number of patients	Percentage (%)
Brain	18	42.8
Pleural/pericardial effusion	16	38.09

Lung	2	4.76
Bones/spine	5	11.9
Liver	1	2.3
Total	**42**	**100.00**

DISSCUSION

Lung cancer related deaths are mainly attributable to extra thoracic metastasis . Advanced lung cancer seems to metastasize to lymph nodes and other distant organs, such as brain, bone and liver. According to the reported data, bone and brain were two leading distant targets for metastasis in NSCLC . Our results further supported these findings, suggesting that bone was the most common metastatic site, followed by brain, liver and DL in all histological sites of NSCLC (including adenocarcinoma, squamous cell carcinoma, LCLC and NSCLC/NOS).

Chest X-ray taken in all the patients revealed abnormalities in 75% patients and 25% patients were normal. In the present study, 35 (65%) of the patients had lesion involving right lung.

This observation is supported by Bhattacharayya*et al.* (2011), who reported 65.79% right lung lesion[8]. The present study observation is also in accordance with those of Swett *et al.* (1982)and Khan *et al.* (2006) [9,10].

Commonest radiological lesion was mass lesion (33.33%), followed by collapse consolidation (25%) and pleural effusion (23.33%). Rest of the patients (18.44%) had combination of these radiological features. This was in accordance with Rawat*et al.* (2009) and Bhattacharayya*et al.* (2011) [8, 10].

Garland *et al.* (2009) estimated that by the time a tumor of lung is first detected on a chest radiograph, it has already completed 75% of its natural history [11]. Koul*et al.* (2010) reported squamous cell carcinoma in 76.5%, small cell carcinoma in 20.7%, adenocarcinoma in 3% patients. Rawat*et al.* (2009) reported squamous cell carcinoma in 44.83%, adenocarcinoma in 19.7%, small cell carcinoma in 16.75% patients [10, 12].

CONCLUSION

Mostly death in the lung cancer is due to the extra thoracic metastasis. When a patient presents with a single tumor or multiple tumors , with or without known primary cancer, clinicians should be alert to the possibility primary cancer metastases, and a biopsy of the suspicious lesion should be obtained to aid the histological identification of primary cancer and various radiological scans should be used as an effective tool for diagnosis and evaluation.

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