ASSESSMENT OF CLINICO-PATHOLOGICAL PROFILE OF LUNG CANCER

Research

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Abstract

Background: To assess clinico-pathological profile of lung cancer. **Materials and Methods:** Sixty- eight patients of lung cancer of both genders were included. Parameters such as smoking history, symptoms and signs, radiographic findings, histopathology type of lung cancer was recorded. 18 F-Fluorodeoxy glucose positron emission tomography scan (FDG—PET) of whole body and magnetic resonance imaging (MRI) of brain was done for disease staging. Wherever appropriate pleural fluid, loco regional or distant lymph node sampling for cell block was done. **Result:** Out of 68 patients, males comprise 40 (58.8%) and females 28 (41.2%). Smoking history was positive in 54. Symptoms observed were fever in 50, cough in 54, hemoptysis in 12, chest pain in 30, dysponea in 26, hoarseness of voice in 8, SVC obstruction in 7 and loss of weight and appetite in 23. Site was bilateral in 29, right lung in 15 and left lung in 24. Radiological presentation was mass in 20, collapse-consolidation in 32, pleural effusion in 2 and combined presentation in 14 cases. The difference was significant (P< 0.05). Histological type of lung cancer was adenocarcinoma in 13, squamous cell carcinoma in 34, large cell carcinoma in 12, small cell carcinoma in 5 and undifferentiated carcinoma in 4 cases. A significant difference was observed (P< 0.05). Disease staging found to be IA in 2, IB in 1, II in 4, IIA in 3, IIB in 2, III in 1, IIIA in 6, IIIB in 5, IIIC in 5, IV in 26, IVA in 9 and IVB in 4. A significant difference was observed (P< 0.05). **Conclusion:** Smoking is the major risk factor in the causation of lung cancer. Common symptoms observed were cough, fever and chest pain. Common histological type of lung cancer seen was squamous cell carcinoma and adenocarcinoma.

INTRODUCTION

Among all the new cancers detected annually lung cancer accounts 18 lakh cases. Smoking culture and regional variations influences the epidemiological and pathological trend of lung cancer. Squamous cell carcinoma once predominant cell type is now found below adenocarcinoma in occurrence in western and most Asian countries.[1]

Lung cancer is believed to be the most common fatal neoplastic disease in the world today. It is responsible for 28% of all the cancer related deaths.[2] In the developed countries, incidence and mortality from lung cancer in females is rising, whereas it is declining in males. Lung cancer is responsible for approximately one million deaths per year at present, and it is estimated to rise to three million per year by the year 2010.[3]

Progressive survival extension and increasing cigarette smoking has led to a numerical rise of patients with primary lung cancer in India. It is in accordance with the epidemiological data from western countries, which shows rising prevalence of the disease in Indian population.[4] Smoking is the cause for more than 85% of the bronchogenic carcinoma cases. Vegetable and fruit intake are protective factors for lung cancer, whereas animal food and dairy products are known to have predisposing effect on the cancer. Urban air pollutant including indoor air pollution is a known risk factor for lung cancer.[5] Considering this, we planned present study to assess clinico-pathological profile of lung cancer.

MATERIALS AND METHODS

After considering the utility of the study and obtaining approval from ethical review committee of the institute, we selected sixty- eight patients of lung cancer of both genders. All were informed regarding the study and their written consent was obtained.

Demographic data such as name, age, gender etc. was recorded. Parameters such as smoking history,

symptoms and signs, radiographic findings, histopathology type of lung cancer and clinical staging of lung cancer was recorded. 18 F-Fluorodeoxy glucose positron emission tomography scan (FDG—PET) of whole body and magnetic resonance imaging (MRI) of brain was done for disease staging. Wherever appropriate pleural fluid, loco regional or distant lymph node sampling for cell block was done. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Out of 68 patients, males comprise 40 (58.8%) and females 28 (41.2%). [Table 1]
Smoking history was positive in 54. Symptoms observed were fever in 50, cough in 54, hemoptysis in 12, chest pain in 30, dysponea in 26, hoarseness of voice in 8, SVC obstruction in 7 and loss of weight and appetite in 23. Site was bilateral in 29, right lung in 15 and left lung in 24. Radiological presentation was mass in 20, collapse-consolidation in 32, pleural effusion in 2 and combined presentation in 14 cases. The difference was significant (P< 0.05) [Table 2].

Histological type of lung cancer was adenocarcinoma in 13, squamous cell carcinoma in 34, large cell carcinoma in 12, small cell carcinoma in 5 and undifferentiated carcinoma in 4 cases. A significant difference was observed (P< 0.05) [Table 3].

Disease staging found to be IA in 2, IB in 1, II in 4, IIA in 3, IIB in 2, III in 1, IIIA in 6, IIIB in 5, IIIC in 5, IV in 26, IVA in 9 and IVB in 4. A significant difference was observed (P< 0.05) [Table 4].

Table 1: Patients distribution.

Total- 68		
Gender	**Male**	**Female**
Number (%)	40 (58.8%)	28 (41.2%)

Table 2: Assessment of parameters.

Parameters	Variables	Number	P value
Smoking	Yes	54	0.01
	No	14	
Symptoms	Fever	50	0.72
	Cough	54	
	Hemoptysis	12	
	Chest pain	30	
	Dysponea	26	
	Hoarseness of voice	8	
	SVC obstruction	7	
	Loss of weight and appetite	23	
Site	Bilateral	29	0.85
	Right lung	15	
	Left lung	24	
Radiological presentation	Mass	20	0.02
	Collapse-consolidation	32	
	Pleural effusion	2	
	Combined presentation	14	

Table 3: Histological type of lung cancer

Histological type	Number	P value
Adenocarcinoma	13	0.01
Squamous cell carcinoma	34	
Large cell carcinoma	12	
Small cell carcinoma	5	
Undifferentiated carcinoma	4	

Table 4: Disease staging

Disease staging	Number	P value
IA	2	0.01
IB	1	
II	4	
IIA	3	
IIB	2	
III	1	
IIIA	6	
IIIB	5	
IIIC	5	
IV	26	
IVA	9	
IVB	4	

DISCUSSION

In India, due to the wide prevalence of tuberculosis, many lung cancer patients could be initially treated otherwise.[6,7] However, lung cancer diagnosis is favored given the age of the patient, history of smoking, signs of superior vena cava obstruction, mediastinal symptoms such as hoarseness of voice and dysphagia.[8,9] On examination, there could be signs of collapse or mass, clubbing of nailbed and other complications of lung cancer (both metastatic and non-metastatic). The commonest radiological finding in lung cancer includes mass with or without collapse.[10,11] We planned present study to assess clinico-pathological profile of lung cancer.

Our results showed that out of 68 patients, males comprise 40 (58.8%) and females 28 (41.2%). Jindal S.K,[12] opined that the cell type of cancer is largely influenced by characteristics such as age, sex and smoking habits. SCC tends to exclusively occur among smokers and in males. In India, a larger proportion of smokers are males and thus females will have an inverse increase in AC. Age also influences the cell type pattern, where-in SCLC tends to occur among 40 years, SCC is common among smokers and AC among non-smokers.

Smoking history was positive in 54. Symptoms observed were fever in 50, cough in 54, hemoptysis in 12, chest pain in 30, dysponea in 26, hoarseness of voice in 8, SVC obstruction in 7 and loss of weight and appetite in 23. Site was bilateral in 29, right lung in 15 and left lung in 24. Radiological presentation was mass in 20, collapse-consolidation in 32, pleural effusion in 2 and combined presentation in 14 cases. Rawat et al,[13] evaluated the clinico, a pathological profile of the lung cancer. The study included 203 patients with confirmed cases of lung cancer. Male to female ratio was 8.2:1. The common age group being 40-60 years, 9.86% of the patients were less than 40 years old age. Smoking was found to be the main risk factor in 81.77% patients. The most frequent symptom was cough (72.90%) followed by fever (58.12%). The most common radiological presentation was mess lesion (46.31%). The most common histopathological type was squamous cell carcinoma (SCC) (44.83%) followed by adenocarcinoma (19.78%) and small cell lung carcinoma (SCLC) (16.75%). The majority patients (73.29%) were diagnosed in the later stages of the disease (III B and IV).

Histological type of lung cancer was adenocarcinoma in 13, squamous cell carcinoma in 34, large cell carcinoma in 12, small cell carcinoma in 5 and undifferentiated carcinoma in 4 cases. Jadhav et al,[14] enrolled 63 patients of lung cancer. The disease showed 77.7% male predominance (M:F 3.5:1) and 73% occurrence in smokers. Majority of our patient (52.3%) aged greater than 60 years with an average age of 60.36 years. Productive cough in 95.2% and tumour mass in 85.7% was the common symptom and radiological presentation respectively. Histologically adenocarcinoma was seen in 66.67% of the patient and prevailed over 28.57% of squamous cell carcinoma. Adenocarcinoma of lung exceeds the decade old prevalent squamous cell carcinoma.

Disease staging found to be IA in 2, IB in 1, II in 4, IIA in 3, IIB in 2, III in 1, IIIA in 6, IIIB in 5, IIIC in 5, IV in 26, IVA in 9 and IVB in 4. Ramani et al,[15] studied the demographic and clinicopathological profile of lung cancer patients admitted to the oncology unit. Out of 1248 patients diagnosed with lung cancer Adenocarcinoma (AC) was detected among 70.4% of patients, Squamous cell carcinoma (SCC) among 15.3% and small cell lung cancer (SCLC) among 14.3% of lung cancer admissions. Male to female ratio was 2.95:1. It was found that the median age of lung cancer patients was 61 years. >60% of lung cancer patients were from the 51 - 70 years age-group. Across the three types of cancers among the patients in Stage 3B to 4 strata, >35% received palliative chemotherapy and >20% received palliative chemotherapy + radiation.

CONCLUSION

Smoking is the major risk factor in the causation of lung cancer. Common symptoms observed were cough, fever and chest pain. Common histological type of lung cancer seen was squamous cell carcinoma and adenocarcinoma.

REFERENCES

1. Takiar R, Nadayil D, Nandakumar A. Projections of number of cancer cases in India (2010-2020) by cancer groups. Asian Pac J Cancer Prev 2010;11:1045-9.
2. Valaitis J, Warren S, Gamble D. Increasing incidence of adenocarcinoma of lung. Cancer 1981;47:1042-6.
3. Janssen –Heijnen MLG, Coebergh J-WW. The changing epidemiology of lung cancer in Europe. Lung Cancer 2003;41:245-58.
4. Ouellette D, Desbiens G, Emond C, Beauchamp G. Lung Cancer in women compared with men: stage, treatment, and survival. Ann Thorac Surg 1998;66:1140-3.
5. Ferguson MK, Wang J, Hoffman PC, Haraf DJ, Olak J, Masters GA, et al. Sex- associated differences in survival of patients undergoing resection for lung cancer. Ann Thorac Surg 2000;69:245-9.
6. Guleria JS, Gopinath N, Talwar JR, Bhargave S, Pande JN, Gupta RG. Bronchial carcinoma- an analysis of 120 cases. J Assoc Physicians India 1971;19:251-5.
7. Sandrucci F, Vismara L, Molinari S, Regimentri P, Rebeck L. Percutaneous needle biopsy guided with CT of chest: Personal experience of 1605 cases. Radiol Med 1998;96:675-83.
8. Gupta RC, Purohit SD, Sharma MP, Bhardwaj S. Primary bronchogenic carcinoma: clinical profile of 279 cases from mid-west Rajasthan. Indian J Chest Dis Allied Sci 1998;40:109-16.
9. Arroliga AG, Matthay RA. The role of bronchoscopy in lung cancer. Clin Chest Med 1993;13:235-52.
10. Kaneko M, Eughci K, Ohmatsu H, Kakinuma R, Naruke T, Suemasu K, et al. Peripheral lung cancer: Screening and detection with low dose spiral CT versus radiograph. Radiology 1996;201:789-802.

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International Journal of Academic Medicine and Pharmacy (www.academicmed.org)
ISSN (O): 2687-5365; ISSN (P): 2753-6556

11. Larscheid RC, Thrope PE, Scott WJ. Percutaneous transthoracic needle aspiration biopsy: A comprehensive review of its current role in diagnosis and treatment of lung tumors. Chest 1998;114:704-9.

12. Jindal SK, Behera D. Clinical spectrum of primary lung cancer: Review of Chandigarh experience of 10 years. Lung India 1990;94-8.

13. Rawat J, Sindhwani G, Gaur D, Dua R, Saini S. Clinico-pathological profile of lung cancer in Uttarakhand. Lung India: official organ of Indian Chest Society. 2009 Jul;26(3):74.

14. Jadhav SB, Kadam DA. Clinicopathological profile of lung cancer in a teaching hospital in Eastern India. Cough.;60:95-2.

15. Ramani, V., Bijit, C., Vinu, S., Belagutti, J.S. and Radheshyam, N. Clinicopathological Profile of Lung Cancers at an Institute from South India—A Record Based Retrospective Cohort Study. Advances in Lung Cancer 2020;9:41-54.

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International Journal of Academic Medicine and Pharmacy (www.academicmed.org)
ISSN (O): 2687-5365; ISSN (P): 2753-6556