



ISSN: 0975-833X

## RESEARCH ARTICLE

### A STUDY ON CLINICAL PROFILE OF CASES OF LUNG CANCER IN A TERTIARY LEVEL HOSPITAL – A PRELIMINARY REPORT

\*Dr. Rishi Kumar Sharma, Dr. Gaurav Chhabra, Dr. Atul Luhadia, Dr. Shubhakaran Sharma and Dr. S. K. Luhadia

Department of Respiratory Medicine, Geetanjali Medical College and Hospital, Udaipur, Rajasthan

#### ARTICLE INFO

##### Article History:

Received 02<sup>nd</sup> April, 2015  
Received in revised form  
16<sup>th</sup> May, 2015  
Accepted 03<sup>rd</sup> June, 2015  
Published online 28<sup>th</sup> July, 2015

##### Key words:

Bronchogenic Carcinoma,  
Squamous cell carcinoma,  
Adenocarcinoma.

#### ABSTRACT

**Aim:** To study the clinico-radio-pathological profile of patients suffering from Bronchogenic Carcinoma

**Methods:** Patients suffering from Bronchogenic Carcinoma, coming to our OPD or referred from other departments, were included in the study.

**Results:** A total of 100 patients of lung cancer presented in the dept. of Respiratory Medicine, Geetanjali Medical College and Hospital were included in the study. Majority of patients were male (86%). History of Smoking and Alcohol was present in 81% and 26% respectively. Majority of patients were between 41-60 yrs age group. Cough was present in 72% cases followed by decreased appetite (53%) and pain chest (52%). Most of the lesions were right sided (53%). The most common radiological finding on chest x ray was mass lesion (93%). The most common histological type was Squamous cell carcinoma (41%).

**Conclusion:** Squamous cell carcinoma is most common type of lung cancer followed by Adenocarcinoma.

Copyright © 2015 Rishi Kumar Sharma et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Citation:** Dr. Rishi Kumar Sharma, Dr. Gaurav Chhabra, Dr. Atul Luhadia, Dr. Shubhakaran Sharma and Dr. S. K. Luhadia, 2015. "A study on clinical profile of cases of lung cancer in a tertiary level hospital – A preliminary report", *International Journal of Current Research*, 7, (7), 17883-17886.

## INTRODUCTION

Lung cancer is most aggressive type of Malignancy with high rate of mortality. In India, the incidence and prevalence of lung cancer is rising, mainly due to progressive change in life style, rise in life expectancy and smoking habits (Majumdar *et al.*, 2001). It was the leading cancer in three of the Urban cancer registries (Bhopal, Delhi and Mumbai) in India (Nanda Kumar, 2001). Non small cell lung cancers accounts for about 85% and small cell lung cancer accounts for 15-20% cases. Smoking is the cause of >85 % cases of Lung cancer (Carr *et al.*, 1994). There are significant differences in clinico-pathological features of Bronchogenic carcinoma, observed in various parts of our country. This study was carried out to find out clinico-radio-pathological features of patients suffering from Lung cancer in Southern Rajasthan.

## MATERIALS AND METHODS

This is a prospective study started from February 2014 in the Dept. of Respiratory Medicine, Geetanjali Medical College and Hospital, Udaipur, which is a tertiary care hospital and caters a

\*Corresponding author: Dr. Rishi Kumar Sharma,  
Department of Respiratory Medicine, Geetanjali Medical College and Hospital, Udaipur, Rajasthan.

large no. of patients in Southern Rajasthan. The study was approved by ethical committee of the institute. All suspected cases of Bronchogenic Carcinoma coming to our OPD or referred from other departments were included in the study. After taking written consent from the patient, detailed history of present and past illnesses were recorded. Thorough clinical examination was done. All routine blood investigations were carried out. All patients were subjected to either CT Thorax followed by FNAC/ Biopsy or Bronchoscopy, depending upon the site of the tumor.

Patients were classified according to major Histologic group: Squamous cell carcinoma, Small cell Carcinoma, Adenocarcinoma, Large cell carcinoma. Attempts were made to categorize each tumor but those tumor that were not accurately classified were marked as Undifferentiated.

## RESULTS

The preliminary report included 100 patients with Lung Cancer. Majority of Patients were Male (86) with Male to Female ratio of 6.14: 1 (Table 1). The age ranged from 35 – 82 yrs. Maximum patients were within 51-60 yrs age group followed by 61-70 yrs age group (Table 2).

Table 1

	No of Patients	Percentage
Male	86	86%
Female	14	14%

Table 2

Age group	No. of Patients	Percentage
30-40	8	8%
41-50	12	12%
51-60	38	38%
61-70	33	33%
71-80	8	8%
81-90	1	1%

Most of the patients were smoker and Non Alcoholic (Table 3)

Table 3.

Smoker	81
Non Smoker	19
Alcoholic	26
Non Alcoholic	74

Table 4. Clinical symptoms and signs

Symptoms	No of patients
Cough	72
Decreased appetite	53
Pain chest	52
Wt loss	42
Breathlessness	39
Fever	25
Blood in sputum	20
Hoarseness of voice	16
Clubbing	15

The most common symptom was cough (72%) followed by Decreased appetite (53%) and Pain chest (52%) (Table 4). Majority of the patients were having their disease in right lung (53%). Left lung was involved in 44% patients and both lungs were involved in 3% patients. Radiologically, Most common finding was Mass (93%) followed by collapse consolidation (22%) (Table 5).

Table 5. Radiological findings

Pathology	No. of patients
Mass	93
Collapse consolidation	22
Cavity	11
Lymphangitis carcinomatosis	11
Nodules	9
Erosion of rib	9
Pancoast tumor	2
Metastasis to other sites	23
Mediastinal LAP	55
Cervical LAP	6
Pleural Fluid	29

Table 6

CT guided procedure	Done in	positive in	Percentage
FNAC	45	41	91.11%
Biopsy	27	27	100%

Table 7

Bronchoscopy results (done in 57 patients)			
Sample	no of patients	positive in	Percentage
Bronchial aspirate	57	22	38.59
Bronchial Brushing	37	32	86.48
Bronchial Biopsy	46	42	91.30
Post Bronchoscopy sputum	33	4	12.12

In 16 patients, Bronchial aspirate, Brushing and Biopsy all three were positive

Table 8

Histological types of Lung Malignancy			
	Type	seen in	percentage
1	Small cell carcinoma	9	9%
	Oat cell carcinoma	1	1%
2	Non Small cell carcinoma	77	77%
	Squamous cell carcinoma	41	41%
	Adenocarcinoma	23	23%
	Large cell carcinoma	1	1%
	Bronchoalveolar cell carcinoma	1	1%
	NSCLC (not specified)	11	11%
3	Metastasis in lungs	2	2%
4	Undifferentiated carcinoma	11	11%

Table 9

Type of Carcinoma	Smokers (81)	Non Smokers (19)	Total(100)
Squamous cell carcinoma	33	8	41
Adenocarcinoma	18	5	23
Small cell carcinoma	7	2	9
Non small cell carcinoma	10	1	11
Oat cell carcinoma	1	0	1
Bronchoalveolar cell carcinoma	1	0	1
Large cell carcinoma	1	0	1
Metastasis	0	2	2
Undifferentiated	10	1	11

Centrally located tumors were present in 49 patients and peripherally located tumors were present in 51 patients (Table 10)

Table 10

Type	Central (49)	Peripheral (51)	Total
Squamous cell carcinoma	22	19	41
Adenocarcinoma	12	11	23
Small cell carcinoma	8	1	9
Large cell carcinoma	0	1	1
Non Small cell carcinoma	4	7	11
Others	3	12	15

(Others include Undifferentiated, Oat cell, Metastasis and Bronchoalveolar carcinoma)

CT guided procedure (FNAC/ Biopsy) yielded positive results in 51 patients. CT guided FNAC was done in 45 patients and it was positive in 41. CT guided Biopsy was done in 27 patients and it yielded positive result in all (Table 6). Bronchoscopy was done in 57 patients. Bronchoscopy yielded positive result in 49 patients (Table 7).

Histologically, Non small cell lung carcinoma was seen in 77 patients and small cell carcinoma was seen in 10 patients. Metastasis was seen in 2 patients. In 11 patients, no specific histologic diagnosis could be made and these lesions were included into undifferentiated carcinoma (Table 8). Various histological patterns seen in Smokers and Non Smokers are shown in Table 9.

## DISCUSSION

In the present study, Male to Female ratio was 6:1. Reddy *et al.* (1972) found a male to female ratio of 4:1 in his study Reddy *et al.* (1972) while Kashyap *et al.* (2003) found a ratio of 6.1:1. Majority of patients were between 41 to 80 yrs of age group (91%). A study done by Bhattacharyya *et al.* found the similar trend (92.1%)<sup>6</sup>. 8% of patients were < 40 yrs of age at the time of diagnosis. Rajasekaran *et al.* (1993) in their study found that 12.5% of patients were < 40 yrs of age group. Ratio of Smoker and Non smoker was 4.26:1 which is similar to a study done by Gupta *et al.* (?)

Most common symptom was cough (72%) followed by decreased appetite (53%) and pain chest (52%). Hoarseness of voice was present in 16% patients. These findings are similar to a study done by Gupta *et al.* (?) who found cough in 68.42% cases, chest pain in 52.63% cases and hoarseness of voice in 14.66 % cases. In a study done by Khan *et al.* (2006), cough and hemoptysis was present in 71.7% and 15.9% cases which is similar to our findings (72% and 20% respectively).

Majority of patients were having their disease in Right lung (53%). The study done by Khan *et al.* (2006) also showed Right lung predominance for lung cancer (63%). Most common radiological finding in our study was mass lesion (93%) followed by Collapse consolidation (22%). Lymphangitis carcinomatosa was seen in 11% patients, Pleural effusion in 29% patients and Rib erosion in 9% patients. A study by Prasad *et al.* (2004) also showed rib erosion in 7.5% patients. Dey *et al.* (2012) in their study, found pleural effusion in 27.8% cases, collapse in 18.6% cases and rib erosion in 6.9% cases which is quite similar to our finding.

Bronchoscopy was done in 57 patients and it yielded positive results in 49 patients (49%). Bronchial Biopsy was positive in 42/46 patients (91.30%), Brushing was positive in 32/37 patients (86.48%) and Aspirate was positive in 22/57 patients (38.59%). Post Bronchoscopy sputum was positive in 4/33 patients (12.12%). In 16 patients, Biopsy, brushing and aspirate all were positive. Because the yield of Bronchial brushing and Biopsy is quite similar in our study (86.48% v/s 91.30%), we suggest that Bronchial brushing can be used as a safer alternative in patients with high risk of bleeding while taking Biopsy.

CT guided procedures (FNAC/ Biopsy) yielded positive results in 51 patients (51%). CT guided lung FNAC was done in 45 patients out of which 41 were positive for Malignancy (91.11%). CT guided biopsy was done in 27 patients and it was positive in all. In a study done by Prasad *et al.* (2004), Bronchoscopy yielded positive results in 43% cases and CT FNAC provided diagnosis in 41% cases. The most common histological diagnosis in our study was Squamous cell carcinoma (41%) followed by Adenocarcinoma (23%) and Small cell carcinoma (9%). Large cell carcinoma was seen in 1 patient. No differentiation could be made in 11 patients. 11 patients were diagnosed as having Non small cell lung carcinoma but further differentiation into Squamous, Adeno or Large cell carcinoma could not be made in these patients. These findings are similar to most of the other studies done on Lung cancer (Bhattacharyya *et al.*, 2011; Prasad *et al.*, 2004; Dey *et al.*, 2012; Jindal and Behera, 1990). Non small cell lung cancer accounts for nearly 85% and small cell lung cancers accounts for 15 – 20% of cases. In our study, we found Non small cell lung cancer in 77% patients and small cell lung cancers in 9 % patients. Khan *et al.* (2006) found presence of Non small cell lung cancer in 82.9% and small cell lung cancer in 17.1% of their patients. Most common type of Lung cancer in non smokers was Squamous cell carcinoma in our study. Although Adenocarcinoma is said to be most common type of lung cancer in Non smokers, the high incidence of Squamous cell carcinoma in non smokers in our study can be due to

passive smoking or environmental pollution (chullha use in houses for cooking food).

In conclusion, this is probably the first report profiling lung cancer in Southern Rajasthan region. Squamous cell carcinoma tops the list followed by Adenocarcinoma. The study is still ongoing.

#### Acknowledgements

We want to acknowledge all the patients who gave their consent to participate in the study.

#### Declarations

Funding - The study was not funded by any source.

Conflict of interest: There are no conflicts of interest.

Ethical approval: Taken from ethical committee.

#### REFERENCES

- Bhattacharyya SK, Mandal A, Deoghuria D, Agarwala A *et al.* Clinico-pathological profile of lung cancer in a tertiary medical center in INDIA: Analysis of 266 cases. *Journal of Dentistry and oral hygiene*, Vol 3(3),30-33, March 2011
- Carr DT, Holoye PY, Hong WK. Bronchogenic Carcinoma. In : Murray JF, Nadal JA, Editors. *Textbook of Respiratory Medicine*. 2<sup>nd</sup> edition. Philadelphia: WB Saunders company; 1994. P 1528-96
- Dey A, Biswas D, Saha SK, Kundu S *et al.* Comparison study of clinicoradiological profile of primary lung cancer cases: An eastern India experience. *Indian J Cancer*, 2012;49: 89-95
- Gupta D, Boffetta P, Gaborieau V, Jindal SK. Risk factors of lung cancer in Chandigarh. *Indian J Med Res.*, 113:142-150
- Gupta KB, Gupta R, Gulati N, Visshvkarma S *et al.* Etiological profile of Non tuberculous upper lobe lung lesions. *Pulmonary*, 9(3):97-105
- Jindal SK, Behera D. Clinical spectrum of Primary Lung cancer- review of Chandigarh experience of 10 yrs. *Lung India* (1990) VIII, No 2, (P 94-98)
- Kashyap S, Mohapatra PR, Nagi RS. 2003. Pattern of Primary Lung cancer among bidi smokers in North western Himalayan region of INDIA. *Lung Cancer*, 41(Suppl 2): S111
- Khan NA, Afroz F, Lone MM, Teli MA *et al.* Profile of Lung cancer in Kashmir, India: A Five year study. *Indian J Chest Dis Allied Sci.*, 2006;48:187-190
- Majumdar SK Das, Nanda S, Goirola M. Brachytherapy in Lung Cancer. *Hospital Today* 2001;6:609-11
- Nanda Kumar A. Consolidated report of the population based cancer registries, incidence and distribution of cancer, 1990-1996. *National cancer registry programme*. New Delhi: Indian council of Medical Research, 2001.
- Prasad R, James P, Kesarwani V, Gupta R. *et al.* Clinicopathological study of Bronchogenic Carcinoma. *Respirology*, (2004)9,557-560
- Rajasekaran S, Manickam TG, Vasanthan PJ, Jayachandran CS *et al.* Pattern of Primary lung cancer – A Madras study; *Lung India* (1993) No 11(1 and 2) P 7-11
- Reddy DB, Prasanthamurthy D, Satyavathi S. 1972. Bronchogenic Carcinoma: A Clinico-pathological study. *Indian J. Chest Dis.*, 14:86-9

\*\*\*\*\*