

Age and Sex Distribution of Primary Pulmonary Malignancies in central Punjab

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ABSTRACT

Three hundred patients of primary malignancies of the lung from Gulab Devi Chest Hospital and other hospitals of Lahore were studied. The history of the Patients and their clinical findings were recorded. The sections of all the cases were stained with haematoxylin and eosin whereas all large cell carcinomas were stained with Alcian Blue-Periodic Acid-Schiff (AB-PAS) stain. There were 255 males and 45 females with a male to female ratio of 5.7:1. The age ranged from 10-90 years with a mean age of 54.17 ± 3.46 years. Different tumors were significantly more ($p < 0.001$) in males than in females. The mean age in squamous cell carcinoma cases was significantly high ($P < 0.001$) as compared with adenocarcinoma. Small cell carcinoma cases had significantly low ($P < 0.02$) mean age as compared with squamous cell carcinoma. The difference of mean age in cases of adenocarcinoma approached significant level ($0.1 > P > 0.05$) as compared with small cell carcinoma.

Key words: Cancer, Lung Cancer, Squamous cell Carcinoma, Small Cell Carcinoma

INTRODUCTION

Malignancies of the lung remain one of the most frequently diagnosed malignant neoplasms throughout the world¹⁻⁴.

In Pakistan, amongst the males, the malignant tumours of the bronchus ranked number one⁵. Various regional studies also show that malignancies of the lungs are a common malignancy of the male in Pakistan⁶⁻⁷.

Development of malignancies of the lung is multifactorial process. These factors include smoking^{8,29}, ionizing radiation, metals, diffuse pulmonary fibrosis⁹ and asbestos exposure². The age distribution in different malignancies varies in different countries e.g. carcinoma of the breast presents at earlier age in Pakistan as compared with the west¹⁰.

The present study was carried out to see the age and sex distribution of pulmonary malignancies so as to establish the base line data in central Punjab.

MATERIALS AND METHODS

Three hundred patients of primary malignancies of the lung from Gulab Devi Chest Hospital and other hospitals of Lahore were included in this study. Gulab Devi Chest Hospital drains the maximum number of -

cases of pulmonary malignancies from the region of central Punjab. Patients of all ages and both sexes were included in the study.

History of the patients regarding name of patient, age, and sex, presenting complaints with duration, etc were recorded. Patients were examined clinically, lymph node enlargement was noted and recorded along with relevant investigations, x-ray chest, Bronchoscopy, and CT Scan (if available).

The specimens included were bronchial biopsy, transthoracic core needle lung biopsy, open lung biopsy and/or regional lymph node biopsy

The sections of all the cases were stained with haematoxylin and eosin whereas all large cell carcinomas were stained with Alcian Blue-Periodic Acid-Schiff (AB-PAS) stain¹¹ without diastase as well as with diastase.

The tumors were classified according to WHO classification.¹² Chi square test was used for statistical analysis.

RESULTS

The age ranged from 10-90 years with a mean age of 54.17 ± 3.46 years. The maximum number of patients (87.01%) was in the age group 40-79 years (Fig.1). There were 255 males and 45 females with a male to female ratio of 5.7:1.

Squamous cell carcinoma was more common in age groups of 50-79 years. Significantly large numbers of cases ($P < 0.001$) of squamous cell carcinoma were above 40 years of age as compared with adenocarcinoma. The cases in large cell

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carcinoma group aging above 40 years were significantly less ($P<0.05$) as compared with squamous cell carcinoma (Table 1).

Sex and age distribution in different malignancies is given in tables 2 and 3 respectively. Different tumors were significantly more ($p<0.001$) in males than in females. Squamous cell carcinomas were 120 cases in males and 10 cases in females. Small cell carcinomas were 61 cases in male and 7 cases in female. Twenty five males presented as adenocarcinoma, while sixteen females showed the same histological type. The mean age in squamous cell carcinoma cases was significantly high ($P<0.001$) as compared with adenocarcinoma. Small cell carcinoma cases had significantly low ($P<0.02$) mean age as compared with squamous cell carcinoma. The difference in mean age in cases of adenocarcinoma approached significant level ($0.1>P>0.05$) as compared with small cell carcinoma.

DISCUSSION

Malignancies of the lung remain one of the most frequently diagnosed malignant neoplasms throughout the world³. It is the number one cause of cancer death in the American males and females^{13-16,29,30}. Bronchogenic carcinoma is being diagnosed with increasing frequency in China, Japan, Canada, and European countries, as well as in India.¹⁷⁻²¹ Similarly in Pakistan, malignant tumours of the lung ranked number one, among males^{5,22}.

Carcinoma of the lung is generally considered a disease that predominantly affects middle aged and elderly men^{15,18-20,23,30,31}. In this study of 300 cases of primary lung carcinoma there were 255 males and 45 females with a male to female ratio of 5.7:1. It is in accordance with the study of Jindal²⁴, who reported a ratio of 5.2:1 and that of Al-Tamimi et al²⁵ with a ratio of 5:1. However male to female ratio in other studies was 2:1, 2.4:1 and 2.9:1^{17,20,26,31}.

The age of patients in this study ranged from 10-90 years with a mean age of 54.17±3.46 years. (Fig.1). This is in accordance with the study of Srivastava¹⁹; he reported the mean age of 55 years in India. However western studies have reported a higher mean age, ranging from 61.8 to 71 years^{18,23,27}.

Squamous cell carcinoma was more common in age groups of 50-79 years (Fig 2). This is in accordance with a number of published reports with a age range of 55 to 75 years^{15,17,20}.

Significantly large numbers of cases ($P<0.001$) of squamous cell carcinoma were above 40 years of

age as compared with adenocarcinoma. The cases in large cell carcinoma group aging above 40 years were significantly less ($P<0.05$) as compared with squamous cell carcinoma (Table 1). Moreover different tumors were significantly more ($p<0.001$) in males than in females (Table 2). Our results are similar with other studies^{17,20,23}.

The mean age in cases of squamous cell carcinoma was significantly high ($P<0.001$) as compared with adenocarcinoma. The cases of small cell carcinoma had significantly low ($P<0.02$) mean age as compared with squamous cell carcinoma. The difference in mean age in cases of adenocarcinoma approached significant level ($0.1>P>0.05$) as compared with small cell carcinoma. Similar results were seen in other studies^{24,28}.

Thus in conclusion this study has highlighted the different aspects of age and sex distribution of primary malignancies of the lung.

Table 1: Comparison of patients of malignancies of the lung, below 40 years of age with those above 40 years

Histological type	Below 40 year	Above 40 years
Squamous cell carcinoma	6	124*
Small cell carcinoma	4	64
Adenocarcinoma	10	44
Large cell carcinoma	6**	27
Others	2	13
Total	28	272

* $P<0.001$ as compared with adenocarcinoma

** $P<0.05$ as compared with squamous cell carcinoma

Table 2: Sex distribution in 300 cases of malignancies of the lung

Gender	=n	%age
Male	255	85.0
Female	45	15.0
Total	300	100

Table 3: Comparison of mean age in different histological types of 300 cases of malignancies of the lung

Histological type	=n	Range	Mean±SD
Squamous cell carcinoma	130	25-85	58.77±11.08
Small cell carcinoma	68	18-85	54.7±11.66**
Adenocarcinoma	54	16-75	50.68±13.55
Large cell carcinoma	33	15-90	55.88±17.47
Others	15	10-85	50.80±18.84

* $p<0.001$ when compared with Adenocarcinoma and $p<0.002$ when compared with Small cell carcinoma

** $0.1>p>0.05$ when compared with Adenocarcinoma

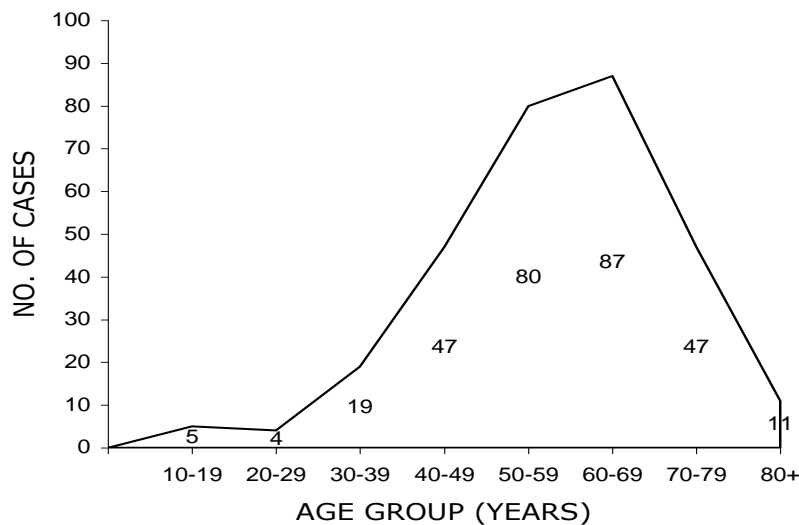


Figure 1: AGE DISTRIBUTION IN 300 CASES OF CARCINOMA OF THE LUNG

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