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CLINICO-PATHOLOGICAL PROFILE OF LUNG CANCER CASES IN TERTIARY CARE CENTRE.

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ABSTRACT

Background: In India and worldwide lung cancer is the leading cause of cancer mortality. Tobacco smoking is the most important risk factor for Lung Cancer in both genders. Bidi smoking is a more prevalent form of smoked tobacco in India than cigarette smoking. Aim: To study the clinical and pathological profile of lung cancer patients in tertiary care center of western U.P.

Method: A total of 172 patients were enrolled from Respiratory Medicine Department, Carrer Institute of Medical Sciences, Lucknow. Hospital based cross sectional study was done.

Results: Small cell carcinoma (SCLC) was diagnosed in 23 patients (13.4%), while 129 patients (75%) had Non Small Cell Lung Carcinoma (NSCLC). Within NSCLC, the most common histology was squamous cell carcinoma (SqCC) seen in 65 patients (37.8%) followed by adenocarcinoma (AC) in 48 patients (27.9%), Large cell carcinoma (LCC) in 7 patients (4.1%) and Adenosquamous carcinoma (ASqC) in 4 patients (2.3%).Conclusion: Current study showed Squamous cell carcinoma is still the most common histological type; lung cancer is a male predominant disease owing to smoking habits.

Adenocarcinoma is the leading histological subtype among females. Lung cancer is often mistreated as tuberculosis in the Indian subcontinent and hence continues to be diagnosed late.

Keywords: Lung Cancer, Smoking, Biomass fuel exposure, adenocarcinoma, squamous cell carcinoma.

INTRODUCTION

In India and worldwide lung cancer i s the leading cause of cancer mortali ty. 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. India had 53,728 new lung cancer cases in males and 16,547 new lung cancer cases in females, with the corresponding mortality rates of 13.7 and 4.6%, respectively accounting for about 8% of all cancer deaths. [1] Adenocarcinoma has been the dominant histological type of lung cancer in developed countries, whereas in India squamous cell carcinoma continues to be the commonest histological type. Of all lung cancer deaths, 85% are attributable to smoking tobacco. Histological shift and increase in incidence of Adenocarcinoma in developed countries has been linked to changes in smoking behaviour of the population. [2,3]

The shift in the incidence of squamous cell carcinoma and adenocarcinoma may be associated with the switch from non-filter to filter cigarettes, the depth of inhalation had been altered. [12]. Smokeless tobacco is a relatively weak carcinogen and there is little evidence to support a role in causing lung cancer in never-smokers. [3] Although multiple risk factors, including environmental, hormonal, genetic and viral have been implicated in the pathogenesis of lung cancer in never-smokers, no distinct etiologic factor has emerged that can explain the relatively high incidence of lung cancer in never- smokers and the marked geographic differences in gender proportions.(4,5).

The high prevalence of tuberculosis in India is a confounding factor. [6]A paradigm shift is needed in the thinking of clinicians that lung cancer is not purely a smoking related disease, nor should every chest shadow raise a suspicion of only tuberculosis. Farmers mostly end up with lung cancer, because they rely heavily on use of chemical pesticides in India. [7]

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AIMS AND OBJECTIVES

AIM

To study the clinical and pathological profile of lung cancer patients in rural tertiary care center of western U.P.

OBJECTIVES

1. To assess the clinical signs and symptoms of lung cancer.
2. To assess the diagnostic yield of various procedures.
3. To assess the various correlates associated with lung cancer in rural areas.

MATERIAL AND METHOD

STUDY DESIGN

Hospital based cross sectional study

STUDY DURATION

June 2022 to November 2023

STUDY POPULATION

A total of 172 patients were enrolled from Respiratory Medicine Department, Carrer Institute of Medical Sciences, lucknow.

Data were collected from patients attending the department fulfilling the inclusion and exclusion criteria. All patients presenting with shadow on X ray chest suggestive of mass or collapse i.e. clinically and/or radiologically suspicious of malignancy were subjected for evaluation and confirmation for presence and type of lung cancer. Detailed history and sociodemographic profile regarding presence of risk factors were recorded like smoking, agriculture, and mining. Exposure to various factors like arsenic, chromium, nickel, asbestos, vinyl chloride, synthetic rubber, air pollution, wood dust and family history were recorded.

Inclusion Criteria

1) Patients with clinical signs and symptoms suggestive of lung cancer.
2) Patients with radiological features on Chest X-ray or CT thorax suggestive of lung cancer.

Exclusion Criteria

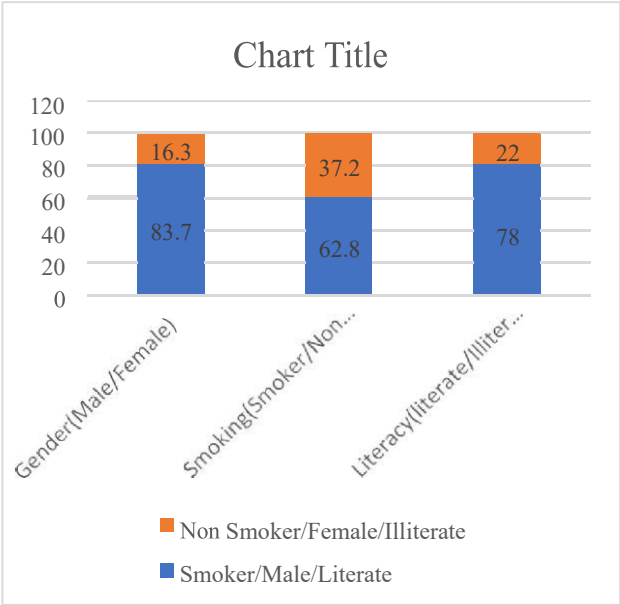
1) Patients who did not give consent for the study.
2) Patients with bleeding diathesis.
3) Patients who are critically ill and uncooperative.

Statistical Analysis- Standard statistical averages, standard deviation and mean deviation were calculated. Calculation of statistical significance was carried out by the Student's test and Chi-square test for analysis. Key values were expressed with 95% confidence limits. $P < 0.05$ was considered to be statistically significant. Data were entered and analyzed using SPSS software (SPSS Inc. Statistics for Windows, Version 21.0.Chicago)

RESULTS

A total of 172 patients with confirmed histological diagnosis were studied in our study.

The mean and median age of the patients in our study was 58.37 and 60 years respectively (S.D ± 12.52) with a range from 24 to 90 years. Maximum 39.5% percent of patients were in the 51-60 age groups.



- Male: female ratio ofapproximately 5.14:1

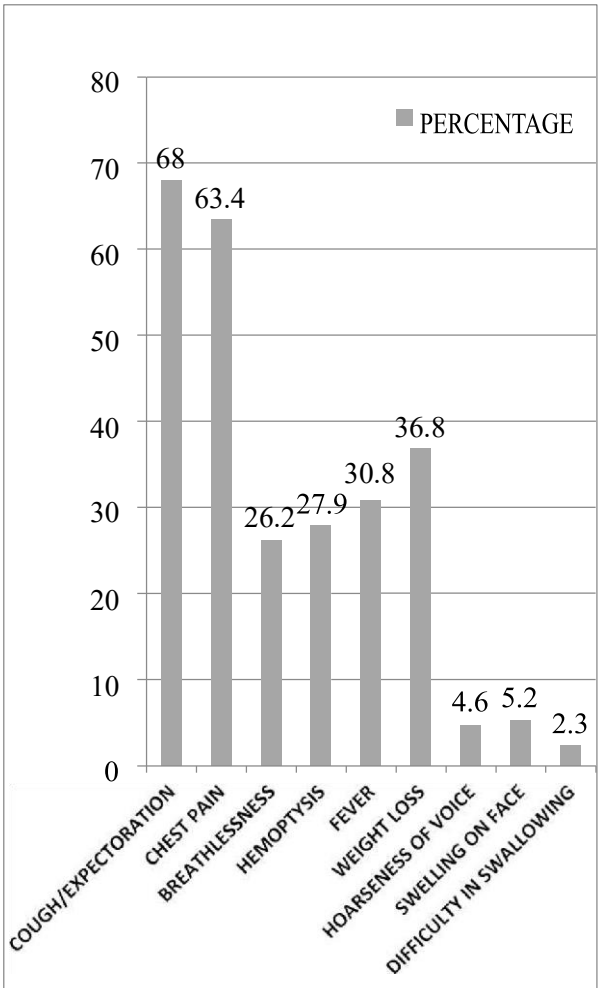


Figure 6: Symptoms of the lung cancer patients at the time of presentation

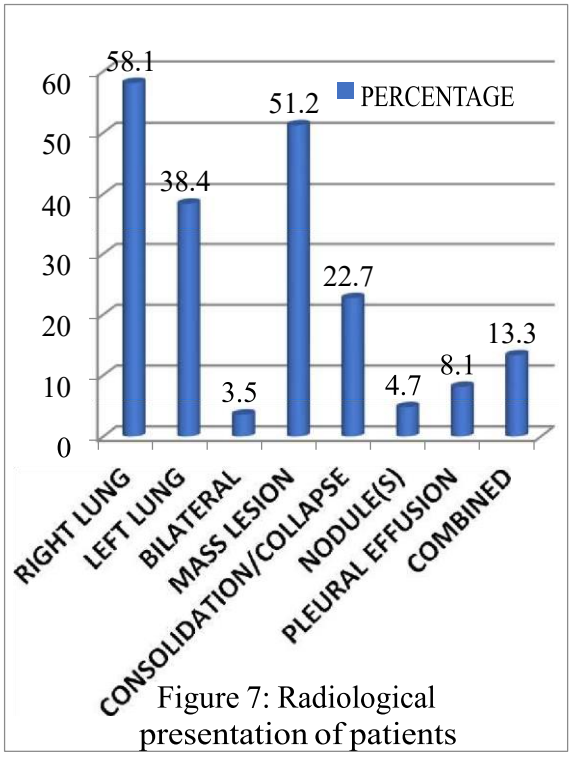


Figure 7: Radiological presentation of patients

All the 172 petients had an abdominal chest radiograph at presentation. Contrast Enhanced Computed Tomography of thorax was done subsequently for confirming the

Of the 172 patients, 64 patients (37.2%) had no history of smoking at any time in their life as compared to 108 patients (62.8%) who had smoked at some point. Amongst the smokers, bidi (an indigenous form of tobacco) smoking was most common mode.

Cough with or without expectoration was the most common symptom in 117 patients (68%), followed by chest pain in 109 patients (63.4%), loss of appetite and loss of weight (36.8%), fever (30.8%), haemoptysis (27.9%), breathlessness (26.2%).

Less common symptoms include hoarseness of voice and swelling over face. Difficulty in swallowing was the least common symptom seen in 4 patients (2.32%). breathlessness in 98 patients (65%). Duration of symptoms was less than 3 months in majority of the patients.

chest radiograph findings. Right lung was most commonly involved in 100 patients (58.1%), left lung in 66 patients (38.4%) and bilateral disease in 6 patients (3.5%). The commonest presentation was that of a Mass lesion in 88 patients (51.2%) followed by collapse or consolidation in 39 patients (22.7%), combined or mixed presentation in 23 patients

(13.3%),pleural effusion in 14 patients (8.1%), nodule in 8 patients (4.7%).

Small cell carcinoma (SCLC) was diagnosed in 23 patients (13.4%),

while 129 patients (75%) had Non Small Cell Lung Carcinoma (NSCLC). Within NSCLC, the most common histology was squamous cell carcinoma (SqCC) seen in 65 patients (37.8%) followed by adenocarcinoma (AC) in 48 patients (27.9%), Large cell carcinoma (LCC) in 7 patients (4.1%) and Adenosquamous carcinoma (ASqC) in 4 patients (2.3%).

Immunochemistry (IHC) was utilized in 9 patients (5.2%) for final histology, however in 5 patients (2.9%) who were labeled Poorly Differentiated Carcinoma, IHC could not be done due to economic constrains or patient died or repeat biopsy sample was required. In 20 patients (11.6%) only malignant cell cytology was positive but final histological diagnosis remained inconclusive either due to inadequacy of the sample material or a repeat biopsy was required which could not be done due to patient's economic constrains or denial.

Subtype	Frequency (n=172)	Percentage (%)
Small Cell Carcinoma	23	13.4
Large Cell Carcinoma	7	4.1
Squamous Cell Carcinoma	65	37.8
Adenocarc inoma	48	27.9
Adenosqu amous Carcinoma	4	2.3
Poorly Differentia ted Carcinoma	5	2.9

CONCLUSION

Current study showed Squamous cell carcinoma is still the most common histological type; lung cancer is a male predominant disease owing to smoking habits. Adenocarcinoma is the leading histological subtype among females. Lung cancer is often mistreated as tuberculosis in the Indian subcontinent and hence continues to be diagnosed late. Maximum diagnostic yield was obtained with bronchoscopy. Lung cancer has emerged as a big medical and social problem for our country especially with rampant use of tobacco despite legislation to control it. Our patients presented in advanced stages of the disease whereby only palliation can be planned. The government should establish more centers for the treatment as affordability is major issue especially in the rural area. Strict rules and regulations should be implemented for decreasing tobacco consumption. There is a need for strengthening cancer registry system in our country so that exact burden of the disease can be assessed and measures can be taken for planning and management of the disease.

High clinical suspicion should be kept especially in the high risk groups smokers, Tuberculosis, Non resolving Pneumonia and COPD pts to avoid misdiagnosis and delayed diagnosis.

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