

An interesting study of lung cancers at a tertiary care centre

Gilukari Gopi Krishna¹, Gudeli Vahini^{2*}, K Mrudula³, Thota Asha⁴

{¹Associate Professor, Pulmonology Medicine} {²Professor, ³Second Year PG, ⁴Professor and HOD, Department of Pathology} Asram Medical College, Elluru, West Godavari District, Andhra Pradesh, INDIA.

Email: gudelivahini@gmail.com

Abstract

Background: Lung cancer is one of the leading causes of cancer related deaths among both men and women. Non small cell lung carcinomas comprises the majority (about 75%) of lung cancer, has proven difficult to treat due to poorly understood pathological mechanism. **Aims and objectives:** To study the incidence of lung carcinomas at our institute, And diagnose the lung carcinomas and subtype them by histopathology on bronchoscopic biopsies. **Materials and methods:** A retrospective and prospective study of bronchial biopsies diagnosed as Non small cell carcinomas by histopathology on hematoxylin and eosin stain in a duration of two years and use IHC markers in a few cases like EGFR and TTF markers. **Results:** Out of twenty nine (29) cases of lung malignancies majority were Nonsmall cell carcinomas-twenty seven cases (27) ,of which adenocarcinomas were seventeen (17) cases topped the list, followed by squamous cell carcinomas (5) cases, malignant epithelial lesions (3) cases and poorly differentiated carcinomas(2) cases. **Conclusions:** Histopathology is gold standard in diagnosing lung cancers, non small cell carcinomas of lung are more common.

Key Word: lung, cancer.

*Address for Correspondence:

Dr. Gudeli Vahini, Professor, Department of Pathology, Asram Medical College, Elluru, West Godavari District, Andhra Pradesh, INDIA.

Email: gudelivahini@gmail.com

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(EGFR).Histopathology is gold standard in diagnosing lung carcinomas on bronchial biopsies.

MATERIALS AND METHODS

A retrospective and prospective study of lung biopsies diagnosed as Non-small cell carcinomas in two years (2017-2018) period. Paraffin blocks of all the cases of poorly differentiated NSCLC reported between 2017 and 2018 were retrieved from the archives of the Pathology Department of Asram medical College and were included in the study. Five-micron-thick paraffin sections were cut and immunostained for TTF-1, p-63, EGFR in few cases and the tumors were sub typed. ⁴ Clinical characteristics and treatment details were collected from the patient's medical records.

RESULTS

Out of twenty nine (29) cases of lung malignancies majority were non-small cell carcinomas (27) -93% and small cell carcinomas were two (2) cases- 7%. (FIG: 1) Out of (27) non-small cell carcinomas there were adenocarcinomas seventeen (17) cases- 63% topped the list, followed by squamous cell carcinomas (5) 18% , malignant epithelial lesions (3) 11% and poorly differentiated carcinomas(2) 7 %cases. (FIG: 3)There were 14 males (52%) and 13 females (48%) of 27 NSCLCS. (FIG: 2)

INTRODUCTION

Lung cancer is the leading cause of cancer death worldwide. It is estimated that about 1 million people die of cancer every year.^{1,2} Non-small cell lung carcinoma (NSCLC) accounts for 80-85% of all lung carcinomas, and adenocarcinoma is the predominant histologic type. The prognosis of these patients remains poor, with an overall 5-year survival rate of less than 15% despite the advanced therapeutic options available.³ Recent studies suggest the existence of two distinct molecular pathways in the carcinogenesis of lung adenocarcinomas, one associated with smoking and activation of the k-ras oncogene and the other not associated with smoking and activation of epidermal growth factor receptor

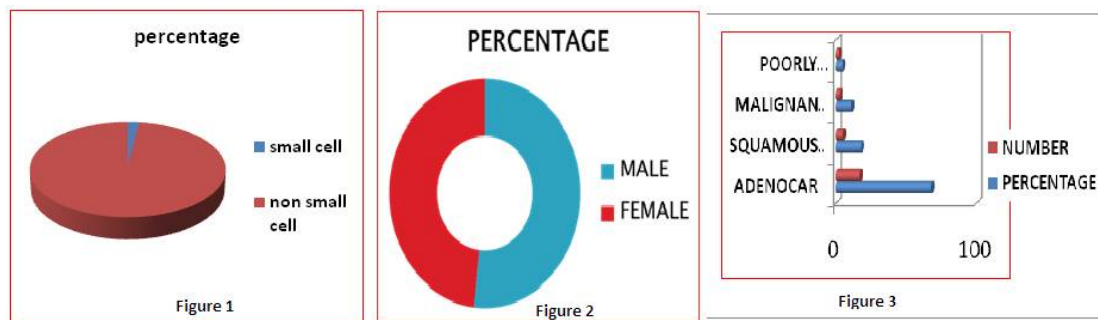


Figure 1: Percentage of small cell versus non small cell carcinomas; **Figure 2:** Percentage of males to females ratio; **Figure 3:** Type of non small cell carcinomas

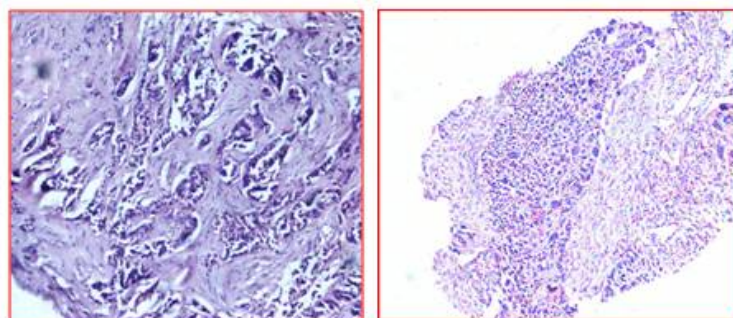


Figure 4: HandE adenocarcinoma on 40x; **Figure 5:** HandE squamous cell carcinoma mag 10x

DISCUSSION

The incidence of lung carcinoma in India is on the rise. NSCLC accounts for 80-85% of all lung carcinomas, and adenocarcinoma is the predominant histologic type with a male predominance (M: F ratio: 1.7:1) similar to our study. Non small cell carcinoma accounted for majority of lung carcinomas and some of our patients presented with advanced disease at the time of diagnosis in our study⁹. Adenocarcinoma is one of the most common histological subtypes of NSCLC^{10,11}. Tobacco smoking continues to be the leading cause of lung cancer worldwide. However, an increase in the incidence of adenocarcinoma among non-smokers and women is noted in North America and Europe. Some of patients with squamous cell carcinoma were smokers. Globally, the overall lifetime risk of lung cancer is about 1 in 13 for men and 1 in 16 for women. Males were more commonly affected in our study. The risk is significantly higher for smokers and lower for non-smokers. Unfortunately, despite the therapeutic advances, the prognosis of patients with lung cancer (5-year overall survival rate of 15%) has not changed dramatically in the past 30 years.^{5,6,7} Currently, diagnostic and treatment approaches to lung carcinoma, mainly adenocarcinoma, are undergoing a revolution. The classification of lung carcinoma is going beyond small cell carcinoma and non-small cell carcinoma. Precise subcategorization of NSCLC into adenocarcinoma and squamous cell carcinoma has a

direct impact on patient management and prognosis. Presence of EGFR mutations in adenocarcinoma is a predictor of responsiveness to EGFR tyrosine kinase inhibitors. The diagnosis of lung carcinoma is a multidisciplinary process requiring correlation with clinical, radiologic, molecular and surgical information.⁸ Conclusions- Histopathology is gold standard in diagnosing lung cancers, non small cell carcinomas of lung are more common. Immunohistochemistry was useful in diagnosing some cases.

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