BACKGROUND

Lung carcinoma constitutes 11% of all cases of carcinomas and it constitutes around 13% of all cancer related mortality. Most of the lung carcinomas are in advanced stage at presentation. So the surgical cure rate is very low, probably less than 10% of cases. Targeted therapy remains the mainstay of treatment in such cases. This study aims to analyze the distribution of Lung carcinomas in relation to age, gender and site and their histopathological classification based on differentiation and Epidermal Growth Factor Receptor (EGFR) expression. Immunohistochemical evaluation of Epidermal Growth Factor Receptor (EGFR) expression is a cost effective tool for targeted therapy.

METHODS:

The study was carried out in the Department of Pathology, Madurai Medical College, Madurai, during the period from July 2015 to August 2017 on 108 specimens of lung biopsies received in the department after exclusion of benign lesions. After adequate fixation, specimens were processed and stained with Haematoxylin and Eosin. The cases were histologically classified based on WHO classification, 2015. Selected cases of lung carcinomas were subjected to immunohistochemical evaluation with Epidermal Growth Factor Receptor (EGFR) marker study. Spearman’s Rho and Pearman’s correlation coefficients were calculated to determine the strength of correlation between the histologic grade and EGFR expression. The observations were compared with other studies and inferences drawn.
RESULTS:

Lung carcinomas constitute about 2.3% of all neoplasms during the study period. Lung tumors were more common in males (82%) than females (18%) and frequently observed in the sixth decade. Lung cancer is more common in smokers with a percentage of 61.7%. Among the histological types of lung carcinoma, more than 85% are non small cell lung cancer. Squamous cell carcinoma (59.57%) is the most common type of lung carcinoma followed by adenocarcinoma (24.46%). EGFR is graded according to the percentage of positive tumor cells and the intensity of staining. EGFR expression is increased in females with 84.62%, males with a percentage of 47.05%. EGFR expression is more commonly seen in adenocarcinoma with a percentage of 47.36% are positive for EGFR expression.

CONCLUSION:

Vast majority of the lung carcinoma cases present at advanced stage. The introduction of targeted therapies particularly tyrosine kinase inhibitors has significantly increased progression-free and overall survival in patients those harbor activating EGFR mutations. EGFR expression, being a poor prognostic factor, its expression is essential to identify the tyrosine kinase inhibitors sensitivity for non small lung carcinomas especially adenocarcinoma, adenosquamous carcinoma for better management of the patients.

KEYWORDS: Lung carcinomas, Epidermal Growth Factor Receptor (EGFR), Targeted therapy.