

ABSTRACT

Background: Lung cancer is one of the highest causes of mortality in the world. Lung adenocarcinoma is a subgroup of NSCLC which often associated with the incidence of EGFR mutation. Activation of EGFR may affect in tumor progression. It affects on cell proliferation, invasion, metastases, or inhibits cell's apoptosis. Several previous studies revealed that local invasive incidence or metastases to extrapulmonary organs in NSCLC patients is fairly high on patient with positive EGFR gene mutation status.

Objection: This research is conducted to find out the correlation between EGFR gene mutation with other organ metastases in lung adenocarcinoma patients.

Method: This research is an analytical study with cross-sectional design. Subjects were collected consecutively from patients with lung adenocarcinoma at RSUD Dr. Soetomo Surabaya, in the period of 1 January 2017 – 31 December 2017. Age, sex, results of the EGFR gene mutation examination, and the radiological results that the patient had undergone were traced from the medical record. The Chi-Square test was used to assess the correlation between EGFR gene mutations with other organ metastases in lung adenocarcinoma patients.

Results: The research shows 54 from 97 patients had positive EGFR gene mutations. EGFR mutations are commonly found in female patients and the mutation often occurred in exon 19. The data shows 44 from 97 patients experienced metastases to extrapulmonary organs, it occurred in bone, liver, and brain. Metastases mostly occurred in bone. Based on the Chi-Square test, it shows a p-value of 0.014 ($p < 0.05$) which means there is a significant correlation between EGFR gene mutation with other organ metastases in lung adenocarcinoma patients.

Conclusion: There is a significant correlation between the EGFR gene mutation with other organ metastases in lung adenocarcinoma patients.

Keywords: Lung adenocarcinoma, EGFR mutation, Extrapulmonary organ metastases.