

ABSTRACT

Introduction: Lung cancer deaths are in the first place reaching 30,901 of total deaths and increasing every year in Indonesia. (Hsu et al., 2011, 2014; Kemenkes, 2015; Hasegawa et al., 2016; Hong et al., 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, et al., 2016) Adenocarcinoma is the highest histology subtype. (Ganeshan et al., 2012; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, et al., 2016) EGFR (Epidermal Growth Factor Receptor) is one factor that can predict the prognosis or response to treatment in patients with lung adenocarcinoma. (Hsu et al., 2011, 2014; Ganeshan et al., 2012; Hong et al., 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, et al., 2016) Patients with EGFR mutations have a better response with the treatment of Tyrosine Kinase Inhibitors (TKI) when compared with negative EGFR mutations (Wild-type). (Hsu et al., 2011, 2014; Halpenny et al., 2014; Hasegawa et al., 2016; Hong et al., 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, et al., 2016) Adenocarcinomas with EGFR mutations generally have a component of Ground Glass Opacity (GGO), smaller size, oval shape, multiple nodal metastases and distant metastases. (Hsu et al., 2011, 2014; Halpenny et al., 2014; Hasegawa et al., 2016; Hong et al., 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, et al., 2016; Park et al., 2016) In this study, we wanted to find out the correlation of Computed Tomography (CT) Scan findings with EGFR mutations.

Methods: This was a retrospective analytical study consisting of 92 samples, mutation group ($n = 62$), wild group ($n = 30$) conducted at Dr. Soetomo General Hospital in the period of January 2015-December 2017. The CT-Scan finding was assessed as size, shape, tumor density, size of the lymph node, pleural effusion, and metastasis. The Correlation was analyzed by chi-square test and significant if $p < 0.05$.

Results: This study found a significant correlation ($p < 0.05$) between tumor size ≤ 3 cm ($p = 0.02$), lymph node size < 1.5 cm ($p = 0.000$) and metastasis ($p = 0.026$) with EGFR mutations status.

Conclusion: Tumor's size ≤ 3 cm, lymph node size < 1.5 cm and presence of metastasis can be found in EGFR mutations pulmonary adenocarcinoma patients.

Keywords: Pulmonary Adenocarcinoma, CT-scan, EGFR

ABSTRAK

Latar Belakang : Kematian karena kanker paru berada pada urutan pertama mencapai 30.901 dari total kematian dan meningkat setiap tahunnya di Indonesia.(Hsu *et al.*, 2011, 2014; Kemenkes, 2015; Hasegawa *et al.*, 2016; Hong *et al.*, 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, *et al.*, 2016) Adenokarsinoma merupakan subtype histologi terbanyak.(Ganeshan *et al.*, 2012; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, *et al.*, 2016) Salah satu faktor yang dapat memprediksi prognosis atau respons terhadap pengobatan pada pasien adenokarsinoma paru yaitu EGFR (*Epidermal Growth Factor Receptor*).(Hsu *et al.*, 2011, 2014; Ganeshan *et al.*, 2012; Hong *et al.*, 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, *et al.*, 2016) Pasien dengan mutasi EGFR memiliki respon yang lebih baik dengan pengobatan *Tyrosine Kinase Inhibitor* (TKI) bila dibandingkan dengan mutasi negatif EGFR (*Wild type*). (Hsu *et al.*, 2011, 2014; Halpenny *et al.*, 2014; Hasegawa *et al.*, 2016; Hong *et al.*, 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, *et al.*, 2016) CT Scan thoraks berperan penting untuk mengevaluasi diagnosis dan stadium kanker paru Adenokarsinoma dengan mutasi EGFR pada umumnya memiliki komponen *Ground Glass Opacity* (GGO), ukuran yang lebih kecil, bentuk oval, metastasis multiple nodul dan metastasis jauh.(Hsu *et al.*, 2011, 2014; Halpenny *et al.*, 2014; Hasegawa *et al.*, 2016; Hong *et al.*, 2016; Liu, Kim, Balagurunathan, Li, Garcia, Stringfield, *et al.*, 2016; Park *et al.*, 2016) Pada penelitian ini ingin mengetahui korelasi gambaran CT-Scan dengan mutasi EGFR.

Metode : Penelitian ini merupakan studi retrospektif analitik terdiri dari 92 kasus, kelompok mutasi (n=62), kelompok *wild* (n=30) yang dilakukan di RSUD Dr.Soetomo periode Januari 2015-Desember 2017. Profil CT-Scan yang dinilai yaitu ukuran, bentuk, densitas tumor, ukuran KGB, efusi pleura dan metastasis. Korelasi dinilai dengan *chi square test* dan signifikan bila $p < 0,05$.

Hasil : Pada penelitian ini didapatkan hubungan yang signifikan ($p < 0,05$) antara ukuran tumor ≤ 3 cm ($p=0,02$), ukuran KGB $< 1,5$ cm ($p=0,000$) dan metastasis ($p=0,026$) terhadap mutasi EGFR.

Kesimpulan : Ukuran tumor ≤ 3 cm, ukuran KGB $< 1,5$ cm dan adanya metastasis dapat ditemukan pada pasien Adenokarsinoma paru dengan mutasi EGFR

Kata Kunci : Adenocarcinoma paru, CT-Scan, EGFR