

Long Progression-free Survival with First-line Erlotinib in the Treatment of EGFR Mutation Positive Metastatic Lung Adenocarcinoma: Case Report

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Abstract: Epidermal growth factor receptor (EGFR) tyrosine kinase inhibitors (TKIs), such as gefitinib and erlotinib, are known to play a significant role in EGFR mutation-positive non-small cell lung cancer. We report long progression-free survival with first-line Erlotinib in an EGFR mutation NSCLC. The present study reports the case of an 83-year-old female never smoker who was diagnosed with EGFR NSCLC deletions in exon 19 after bone biopsy following pathologic fracture of the right femur. The patient received Erlotinib after palliative femoral radiotherapy. Currently, the patient is stable, with no evidence of disease progression after 36 months of treatment with Erlotinib. We describe the disease and the treatment safety using Erlotinib in the elderly patient.

Keywords: Erlotinib, Epidermal growth factor receptor, Tyrosine kinase inhibitors, Non-small cell lung cancer.

INTRODUCTION

Non-Small cell lung cancer (NSCLC) constitutes more than 80% of all lung cancers; at diagnosis 40% is metastatic. 14% were 80 years or older [1]. Conventional chemotherapy has long been used for metastatic stages, a decade early results showed the benefits of targeted therapies in metastatic cancers unknown EGFR mutation status and clearer for EGFR for metastatic non-squamous cancers in terms of overall survival and progression-free survival [2, 3].

The Erlotinib, Gefitinib and Afatinib are used for the treatment of these tumors. These treatments are usually advocated because their safety profiles compared to conventional chemotherapy. No randomized trials comparing the two modalities in elderly patients.

We report the long-term objective response with the good tolerability of Erlotinib on the front line in an elderly patient followed for adenocarcinoma discovered mutated metastatic stage.

CASE REPORT

An 83 years old patient, non smoker diagnosed with metastatic lung adenocarcinoma, after pathologic fracture of the neck of the right femur. A biopsy was in favor of secondary locating a primitive lung adenocarcinoma TTF1 positive and EGFR mutated in exon 19.

The staging assessment has revealed diffuse bilateral pulmonary nodules, mediastinal lymphadenopathies and diffuse bone locations on CT;

she received Denosumab and Erlotinib 150 milligrams per day after femoral head prosthesis and palliative radiation. 36 months after the start of treatment with Erlotinib, the patient is still alive without progression disease (Fig. 1), clinical or laboratory signs of intolerance treatment; she complained mainly bone pain requiring occasionally morphine derivatives.

DISCUSSION

Approximately 85% of cases are non-small cell lung cancer (NSCLC), the majority of which present as an advanced disease (stage IIIB or IV) at the time of diagnosis [4]. The median survival of patients with advanced NSCLC with supportive care is approximately 3–6 months [5]. The standard of care by based -platinum chemotherapy enables median overall survival of 10 months. Epidermal growth factor receptor (EGFR) is important in advanced NSCLC and is involved in tumor growth, development, metastasis, and progression [6]. In multivariate analysis, adenocarcinoma and major mutations (deletions in exon 19 and L858R point mutation in exon 21) were significant predictors of longer PFS to EGFR tyrosine kinase inhibitors in patients with EGFR-mutant non-small cell lung cancer [7]. Erlotinib (Tarceva) is an EGFR tyrosine kinase inhibitor was approved since 2004 for locally advanced or metastatic NSCLC after failure of at least one prior chemotherapy then in first-line with a higher rate of PFS compared to platinum-based chemotherapy. Cases of long surviving after several lines of chemotherapy have been reported [8, 9], after first-line Erlotinib, the median PFS was ten months [10-14]. EGFR-TKI therapy Side-effects are

primarily rash, diarrhea, dry skin and asthenia (Table-1).

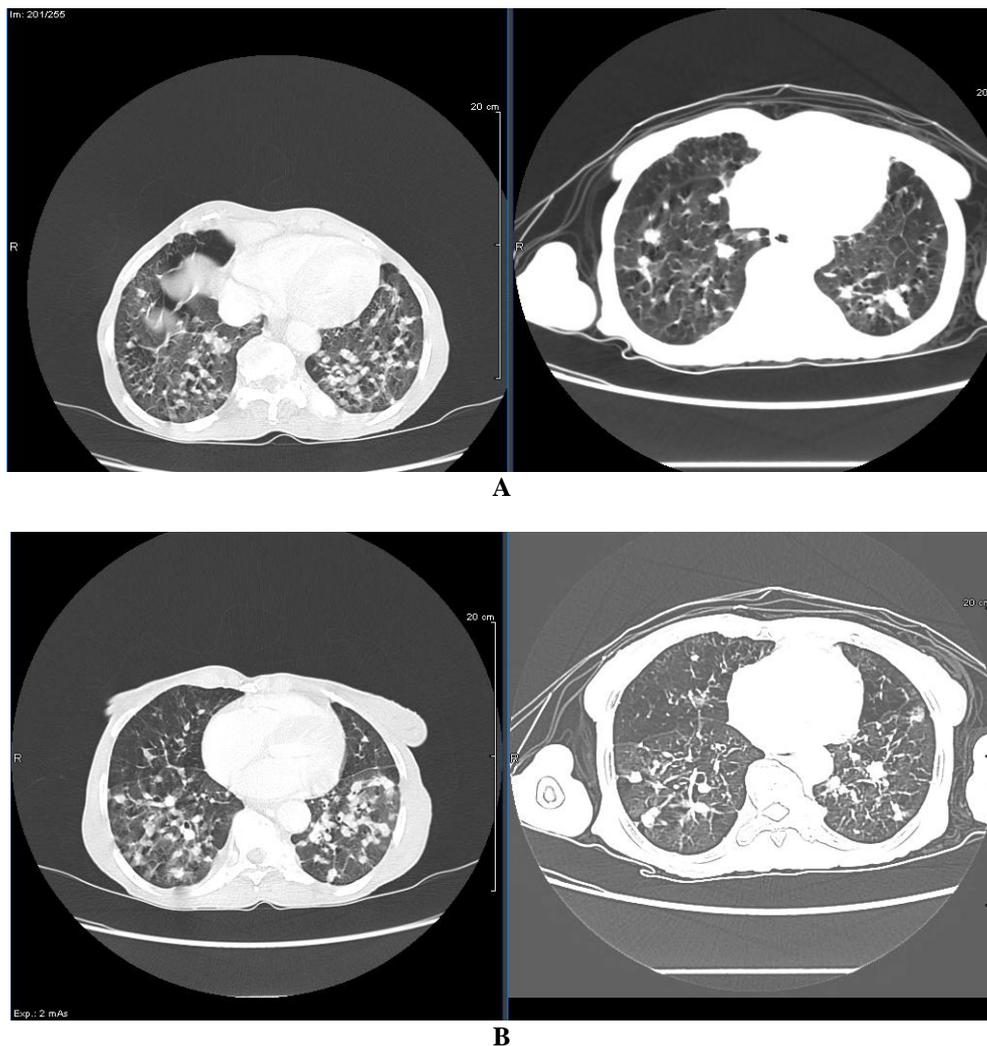


Fig. 1: Axial chest computed tomography (CT) scans. A. Prior to treatment with Erlotinib B. 34 months after treatment with Erlotinib

Table 1: Median progression-free survival for first-line Erlotinib in EGFR- mutation-positive NSLC and side-effects

Trail		Median age	PFS	Toxicity of Erlotinib (all grades)
OPTIMAL study [10]	Erlotinib vs Carboplatin plus Gemcitabine	57 years	13.1 months vs 4.6 months	Rash 73% Diarrhea 25% Asthenia 5%
EURTAC study [11]	Erlotinib vs Platin plus Gemcitabine or docetaxel	65 years	10.4 months vs 5.2 months	Rash 56% Diarrhea 62% Asthenia 58%
TOPICAL study [12]	Erlotinib vs Placebo	77 years	2.8 months vs 2.6 months	Rash 56% Diarrhea 24% (grade 3 and 4) Asthenia 73%
Weber B <i>et al.</i> [13]	Erlotinib	66 years	8 months	
Goto K <i>et al.</i> [14]	Erlotinib	65 years	11.8 months	Rash 83% Diarrhea 81%

CONCLUSION

In summary, Erlotinib seems effective with good tolerance in elderly patients. Future studies with larger sample size are required to investigate EGFR mutations.

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