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Acquired Resistance to Erlotinib in EGFR Mutation-Positive Lung Adenocarcinoma among Hispanics (CLICaP)

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Abstract

Background

Lung cancer harboring epidermal growth factor receptor (EGFR) mutations and treated with EGFR tyrosine kinase inhibitors (TKIs) all eventually develop acquired resistance to the treatment, with half of the patients developing EGFR T790M resistance mutations.

Objective

The purpose of this study was to assess histological and clinical characteristics and survival outcomes in Hispanic EGFR mutated lung cancer patients after disease progression.

Patients and Methods

EGFR mutation-positive lung cancer patients (n = 34) with acquired resistance to the EGFR-TKI erlotinib were identified from 2011 to 2015. Post-progression tumor specimens were collected for molecular analysis. Post-progression interventions, response to treatment, and survival were assessed and compared among all patients and those with and without T790M mutations.

Results

Mean age was 59.4 ± 13.9 years, 65% were never-smokers, and 53% had a performance status 0–1. All patients received erlotinib as first-line treatment. Identified mutations included: 60% DelE19 (Del746–750) and 40% L858R. First-line erlotinib overall response rate (ORR) was 61.8% and progression free survival (PFS) was 16.8 months (95% CI: 13.7–19.9). Acquired resistance mutations identified were T790M mutation (47.1%); *PI3K* mutations (14.7%); *EGFR* amplification (14.7%); *KRAS* mutation (5.9%); *MET* amplification (8.8%); *HER2* alterations (5.9%, deletions/insertions in e20); and SCLC transformation (2.9%). Of patients, 79.4% received treatment after progression. ORR for post-erlotinib treatment was 47.1% (CR 2/PR 14) and median PFS was 8.3 months (95% CI: 2.2–36.6). Median overall survival (OS) from treatment initiation was 32.9 months (95% CI: 30.4–35.3), and only the use of post-progression therapy affected OS in a multivariate analysis (p = 0.05).

Conclusions

Hispanic patients with acquired resistance to erlotinib continued to be sensitive to other treatments after progression. The proportion of T790M+ patients appears to be similar to that previously reported in Caucasians.

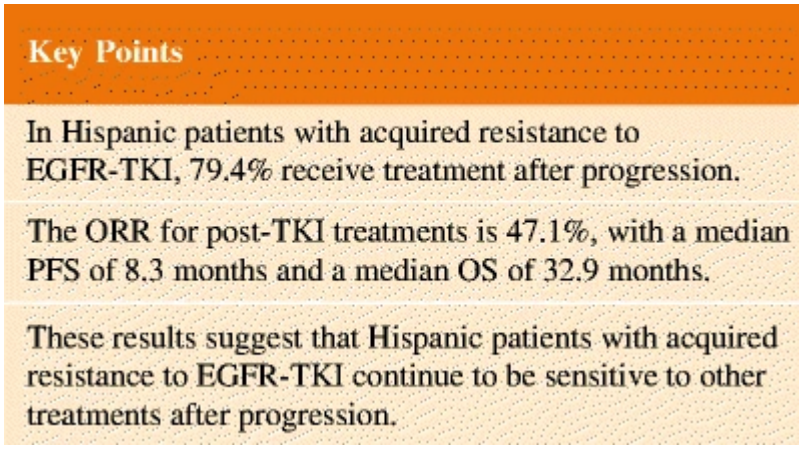

Fig. 1

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Ethics declarations

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Conflict of Interest

Andrés F. Cardona has received consulting fees or honorarium, support for travel to meetings for the study, manuscript preparation or other purposes, and payment for lectures including service on speakers bureau Roche, Pfizer, Bristol-Meyers Squibb, Merck, MSD, and AstraZeneca. Noemí Reguart has received cons fees or honorarium for advisory roles, payment for lectures including service on speaker bureaus, and has given

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All other authors declare no conflict of interest.

Disclaimer

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