CÁNCER DE PULMÓN

Genotyping non-small cell lung cancer (NSCLC) in Latin America.

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Abstract

INTRODUCTION: Frequency of mutations in EGFR and KRAS in non-small cell lung cancer (NSCLC) is different between ethnic groups; however, there is no information in Latin-American population. METHODS: A total of 1150 biopsies of NSCLC patients from Latin America (Argentina, Colombia, Peru, and Mexico) were used extracting genomic DNA to perform direct sequencing of EGFR gene (exons 18 and 21) and KRAS gene in 650 samples. In Mexico, Scorpions ARMS was also used to obtain a genetic profile. RESULTS: We report the frequency of mutations in EGFR and KRAS genes in four LatinAmerican countries (n = 1150). Frequency of EGFR mutations in NSCLC was 33.2% (95% confidence interval [CI] 30.5-35.9) (Argentina 19.3%, Colombia 24.8%, Mexico 31.2%, and Peru 67%). The frequency of KRAS mutations was 16.6% (95% CI 13.8-19.4). EGFR mutations were independently associated with adenocarcinoma histology, older age, nonsmokers, and absence of KRAS mutations. Overall response rate to tyrosine kinase inhibitors in EGFR-mutated patients (n = 56) was 62.5% (95% CI 50-75) with a median overall survival of 16.5 months (95% CI 12.4-20.6). CONCLUSIONS: Our findings suggest that the frequency of EGFR mutations in Latin America lies between that of Asian and Caucasian populations and therefore support the genetic heterogeneity of NSCLC around the world.