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Asian Pacific Journal of Cancer Prevention
Volume 15, Issue 1, 2014, Pages 321-326

Epidermal growth factor receptor mutations in non-small cell lung cancers in a multiethnic Malaysian patient population (Article)

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Abstract

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Background: Mutations in the tyrosine kinase domain of the epidermal growth factor receptor (EGFR) in non-small cell lung cancer (NSCLC) are predictive of response to EGFR-targeted therapy in advanced stages of disease. This study aimed to determine the frequency of EGFR mutations in NSCLCs and to correlate their presence with clinical characteristics in multiethnic Malaysian patients. Materials and Methods: In this prospective study, EGFR mutations in exons 18, 19, 20 and 21 in formalin-fixed paraffin-embedded biopsy specimens of consecutive NSCLC patients were asessed by real-time polymerase chain reaction. Results: EGFR mutations were detected in NSCLCs from 55 (36.4%) of a total of 151 patients, being significantly more common in females (62.5%) than in males (17.2%) [odds ratio (OR), 8.00; 95% confidence interval (CI), 3.77-16.98; p<0.001] and in never smokers (62.5%) than in ever smokers (12.7%) (OR, 11.50; 95%CI, 5.08-26.03; p<0.001). Mutations were more common in adenocarcinoma (39.4%) compared to non-adenocarcinoma NSCLCs (15.8%) (p=0.072). The mutation rates in patients of different ethnicities were not significantly different (p=0.08). Never smoking status was the only clinical feature that independently predicted the presence of EGFR mutations (adjusted OR, 5.94; 95%CI, 1.94-18.17; p=0.002). Conclusions: In Malaysian patients with NSCLC, the EGFR mutation rate was similar to that in other Asian populations. EGFR mutations were significantly more common in female patients and in never smokers. Never smoking status was the only independent predictor for the presence of EGFR mutations.

Author keywords

EGFR mutation Malaysian Multiethnic Non-small cell lung cancer Smoking

Indexed keywords

EMTREE drug terms: epidermal growth factor receptor

EMTREE medical terms: adenocarcinoma adult aged article Asian ethnology exon female genetics human lung non small cell cancer lung tumor Malaysia male middle aged mutation mutation rate prospective study sex difference smoking very elderly