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Mutations of the epidermal growth factor receptor tyrosine kinase domain and associations with clinicopathological features in non-small cell lung cancer patients.

Murray S, Timotheadou E, Linardou H, Vrettou AV, Kostopoulos I, Skrickova J, Papakostantinou C, Christodoulou C, Pectasides D, Samantas E, Papakostas P, Skarlos DV, Kosmidis P, Fountzilas G.

Source

Department of Molecular Biology and Genetics, Metropolitan Hospital, Athens 18547, Greece. smbhsam@hotmail.com

Abstract

Somatic tyrosine kinase (TK) domain mutations of the epidermal growth factor receptor (EGFR) gene are associated with sensitivity of non-small cell lung cancer (NSCLC) to tyrosine kinase inhibitors (TKI's), however their incidence in distinct populations is not clarified. We sequenced exons 18-21 of the EGFR TK domain from 60 Greek and Czech patients, enrolled in an adjuvant chemotherapy trial following total resection for stages I-IIIa disease. Somatic mutations were found in 9/60 patients (15.0%), several being novel. EGFR mutations were more common in Stage I tumors ($p = 0.023$), they were also more common in women and never smokers; however, no other significant association of clinicopathological features with mutations was found. Median TTP and OS of patients with and without mutations were 13.2 and 40 months compared to 22.9 and 43.2 months, respectively. These differences were not statistically significant. K-ras (5/60, 8%) and EGFR mutations were found to be mutually exclusive. We identified a wide spectrum of somatic EGFR TK mutations reporting a relatively high incidence (15%) in NSCLC patients of Greek and Czech origin. As ethnicity seems to be a factor for the origin of these mutations, further studies in distinct populations are warranted.