Abstract

EGFR and KRAS mutation profile in non-small cell lung cancers (NSCLCs) shows wide variations due to geographic and ethnic background. We aimed to determine the frequency and types of EGFR and KRAS mutations in a sample group of Turkish NSCLC cases. The study included 14 adenocarcinomas (ACs), 11 squamous cell carcinoma (SCC) patients selected from archival material including small biopsy or surgical specimens. Their formalin fixed paraffin-embedded tumor tissues were used for genomic DNA extraction for EGFR exon 19 and 21, and KRAS exon 2 mutations. Eleven NSCLCs (44 %) had EGFR mutations. Exon 19 and 21 mutations were found in 8 (32 %) and 5 (20 %) cases. Two cases showed double EGFR mutations. In ACs, 5 (35.7 %) patients had EGFR gene mutation, 3 in exon 19 and 3 in exon 21. In SCCs, 6 (54.5 %) cases had EGFR mutation, 5 in exon 19 and 2 in exon 21. All exon 19 mutations were deletion-type mutations. For exon 21, 3 cases had L858R point mutation (CTG>CGG) and two cases showed deletion-type mutations. Six (24 %) NSCLCs showed KRAS mutations (three ACC, three SCC), 5 codon 12 mutations (G>T, T>C, G>A) and one codon 13 mutation (G>T). Three NSCLC cases showed both EGFR and KRAS mutations together. The profile of KRAS mutation in our AC cases was quite similar to those seen in the Western countries; however, frequency and clustering of EGFR mutations were similar to those seen in the Eastern countries.