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EGFR unusual mutation status in lung adenocarcinomas

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Lung cancer is the most common cause of cancer deaths in both men and women. Adenocarcinoma represents about 28% of the NSCLC cases in men and 42% in women. EGFR is a member of the ERBB family of tyrosine kinases (TK). *EGFR* mutations are more frequently observed in female, non-smokers, East-Asian and in patients with adenocarcinomas, and predict response to TK Inhibitors (TKIs).

Sections of adenocarcinomas of the lung, formalin-fixed paraffin-embedded tissues (FFPE), were selected to analyze mutations in *EGFR* exons 19 and 21 by DNA extraction for polymerase chain reaction (PCR). Exon 19 was studied by fragment analysis and exon 21 was studied by direct sequencing. The analysis of FISH results was done by Cappuzzo's score to *EGFR* gene. Determination of EGFR protein expression was done by immunohistochemistry (IHC) (*Zymed Laboratories*).

The author's present two cases of lung adenocarcinoma that harbours coexisting *EGFR* exon 19 and 21 mutations and one case of *EGFR* multiple in frame-deletions. The patients were female (n = 3), with mixed type adenocarcinoma overexpressing EGFR by IHC.

Most reports demonstrate one *EGFR* mutation per adenocarcinoma. We demonstrated that a single adenocarcinoma can harbour more than one *EGFR* activating mutations.

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