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## Frequency of epidermal growth factor receptor and T790M mutations among patients with non-small cell lung carcinoma, 2009-2017

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**Objectives:** To estimate the proportion of positive EGFR mutation cases among patients with Non-small-cell lung carcinoma (NSCLC) at King Khaled University Hospital and to estimate the proportion of positive T790M mutation cases among patients with NSCLC who are positive for EGFR mutation at KKUH.

**Methods:** A retrospective cohort study which included all patients that were diagnosed with NSCLC from 2009 to 2017 at KKUH. Data obtained from both electronic and paper medical records and the following information were studied: (Age, gender, smoking, region, subtype of NSCLC, EGFR mutation test result, treatment, T790M mutation test (if required), comorbidities, and metastasis. Statistical analysis was performed using SPSS.

**Results:** Among 71 patients with NSCLC 18 cases were identified for EGFR positive mutation and only one case for T790M. Deletion mutation in exon 19 represented 55.6% of total cases. Moreover, it showed that it's more frequent in males and non-smokers with 61.1% (11) and 66.7% (12), respectively. Majority of the cases were above the age of Sixty years by 61.1% (11). The mutations reported highest in those living in Najd with a 44.4% (8) and all the mutated cases were adenocarcinoma. There was no statistical significance in the association between EGFR mutation and the following variables: age, gender, smoking, region, subtype, metastasis, Diabetes Mellitus, Hypertension, Dyslipidemia, Ischemic Heart Disease and Benign Prostatic Hyperplasia.

**Conclusion:** Ultimately, we found that the frequency of EGFR and T790M mutations among NSCLC patients at KKUH from 2009 to 2017 was 25.4% and 1.4%, respectively. Moreover, this result was conspicuous among non smokers.

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