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A retrospective analysis of frequency of *ALK* gene rearrangement in Saudi lung patients

Fouad Hassan Al-Dayel, Hamad Al Husaini, Shamayel Mohammed, Asma Tulbah and Khawla Al Kuraya
King Faisal Specialist Hospital and Research Centre, Saudi Arabia

Background: Lung carcinoma represents 2.6% of cancer seen at King Faisal Specialist Hospital and Research Centre (KFSH & RC) and 4.5% of cancers in Saudi Arabia as per Saudi Cancer Registry. *EML4-ALK* re-arrangements are found to play an oncogenic driver role in lung adenocarcinoma tumor genesis in 3-6% of cases. *ALK* gene rearrangement testing can identify patients with adenocarcinoma who are sensitive to *ALK* kinase inhibitors. However, no data are available on the prevalence of *ALK* rearrangements changes in Middle Eastern population. Therefore, we carried out this study to evaluate the prevalence of *ALK* gene rearrangements in lung adenocarcinoma of Saudi patients.

Methods: *ALK* gene rearrangements were studied using fluorescence *in situ* hybridization (FISH) on 198 adeno-carcinoma samples utilizing tissue microarray format. *ALK* gene rearrangements tested using break-apart probes from Vysis.

Results: One hundred ninety eight (198) lung adenocarcinoma cases were evaluated. Eleven (11) cases exhibited *ALK* gene rearrangement (5.5%). Seven (7) of these cases were metastatic lung adenocarcinoma (stage IV). Mean age of the patient is 51 years (21-79 years). History of smoking was available on only four (4) cases (2 smokers and 2 non-smokers). All cases were moderately to poorly differentiated adenocarcinoma. None of our cases showed signet cells or abundant intracellular mucin.

Conclusion: The findings of this retrospective study show that the incidence of *ALK* gene rearrangements positive adenocarcinoma in Saudi patients is 5.5%. This is similar to the published data.

Biography

Fouad Hassan Al-Dayel is currently working as Chairman of Department of Pathology and Laboratory Medicine, King Faisal Specialist Hospital and Research Centre, Saudi Arabia. He is also a Professor of Pathology, College of Medicine, Al Faisal University, Saudi Arabia. His most of the research interest is Lung Pathology, Bone Pathology, Diagnostic Molecular Oncology of solid tumors, Stem Cell Applications in Clinical and Research (Cell Therapy). He has 128 publications in many reputed international journals.

dayelf@kfshrc.edu.sa

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