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ALK overexpression in triple negative breast cancer using immunohistochemistry

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Breast cancer is the most common female malignancy worldwide. Studies have identified different molecular subtypes including luminal A, luminal B, Her2 positive and Triple Negative Breast Cancer (TNBC) on basis of Immunohistochemistry (IHC). They have different prognosis and response to adjuvant therapy. Anaplastic Lymphoma Kinase (ALK) is a tyrosine kinase receptor known to be expressed in many tumors and can be targeted by anti-tyrosine kinase inhibitors. Studies have shown subset of breast carcinomas to express ALK. The aim of our study is to determine ALK protein overexpression using IHC on TNBC patients, providing them with a targeted therapy option. A cross-sectional study was performed, on 43 cases of TNBC of all histologic subtypes retrieved from archives of Chughtai Lab, Lahore, from 1st January 2016 to 30th July 2017, using non-probability consecutive sampling technique. Mouse anti-human monoclonal antibody against ALK from DAKO was used. Membranous and/or nuclear staining of ALK in at least 1% of tumor cells was taken as positive. All data was analyzed through SPSS version 22.0. Our study showed 11 cases (25.6%) to overexpress ALK by immunohistochemistry. Only 1 case (2.3%) showed cytoplasmic granular positivity along with nuclear staining while 10 cases showed only nuclear pattern of staining (23.2%). This study concludes that a significant number of cases show ALK overexpression by IHC, predominantly nuclear. Further studies are required, using *In Situ* Hybridization (ISH), to confirm ALK gene rearrangement and validate the significance of nuclear staining of ALK as seen is our study. This subset of patient may benefit from anti-ALK therapy. However further studies are required to validate the results.

Biography

Zonaira Rathore has obtained her MBBS from King Edward Medical University. Currently she is working as Consultant Histopathologist at Chughtai Lab, Pakistan.

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