

Comparative Study Of Morphological Features Of Chromosomal Instability And Dna Ploidy Using Flow Cytometry In Breast Carcinoma

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Background : The aim of the present study was to evaluate morphological markers of chromosomal instability (CI) in cytological smears of breast cancer and to correlate these features with the DNA ploidy based on flow cytometric analysis.

Methods: Total 50 cases of breast carcinoma diagnosed on FNAC were selected. Representative May Grunwald Giemsa (MGG), haematoxylin and eosin (H&E) stained smears were chosen to count micronuclei, nuclear bud and chromatin bridges per 1000 epithelial cells on oil immersion magnification (100x objective). The CI markers were correlated with the cytological grade of breast carcinomas and further compared with the the ploidy status by flow cytometry.

Results: Out of 50 carcinomas, eight were grade I, 32 grade II and 10 grade III. There was a significant increase in the mean numbers of micronuclei, nuclear buds and chromatin bridges, in grade I, II and III carcinomas (P value < 0.05). Also on DNA flow cytometry, twenty four cases (48%) of breast carcinoma were aneuploid and 26 cases (52%) were diploid. The correlation between the presence of morphological features of CI including MN, CB & NB score with the ploidy status of breast cancer was found to be significant (P value < 0.05).

Conclusion: This is the first study of three morphological markers of CI in FNAC smears of breast cancer which was compared with ploidy status by flow cytometry. The present study reveals a positive correlation between cytomorphological features of chromosomal instability with increasing cytological grading and DNA ploidy in cases of breast carcinoma.

Biography

Harmeet Kaur has completed MBBS at the age of 22 years (08/2007- 12/2012) from BFUHS University (INDIA) and completed her residency in Pathology (MD) from Government Medical College and Hospital, Sector 32 Chandigarh (06/2015-11/18). She has also presented poster on title Adenoid Cystic Carcinoma Lung: Diagnosis by Fine Needle Aspiration Biopsy Cytology at the International CME in Pathology, Histopathology and Cytopathology organized in Goa (INDIA) on 4th – 6th February 2016. She has also attended 18th Indo US Flow Cytometry Workshop which was held on 17th- 20th February , 2017 organized by Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow.

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