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Genetic Studies of Breast Cancer Patients in Goa, India

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ABSTRACT Chromosomal Aberrations (CA) may play a key role in tumor initiation, promotion and progression stages of carcinogenesis. Presence of such CA in the normal Peripheral Blood Culture (PBC) could be used to identify individuals in high-risk groups. Therefore, early diagnosis, cure and in some cases, prevention of such tumors can be achieved. Molecular analysis at population level is a tedious and very costly technique. Hence, a primary screening of Breast Cancer (BC) patients with highly sensitive marker(s) using a less expensive methodology namely PBC, was carried out in the present study. Our earlier studies indicated that there is a high frequency of BC compared to other types of cancers in females reported in Goa Medical College (GMC). Hence, present work was undertaken to analyze the chromosomal instability in BC patients using PBC. Altogether, 79 subjects were studied involving BC patients (47 subjects) [comprising two groups, (i) Radiotherapy treated (RT) group (19 subjects) and (ii) Surgery (S) group (28 subjects)] and control (C) group (32 subjects). We found that there is a high frequency of dicentrics (27.65 %) in BC patients compared to that of controls (3.13%) and a high frequency of dicentrics in RT group (36.84%) compared to the S group (21.43%). The observation of dicentrics in S group indicates that there may be inherent chromosomal instability in these patients, which may be inducing tumorogenecity.