

Sensitivity of Lymphocytes of Patients with Fibroadenoma and Breast Cancer to Gamma-Rays as Evaluated by Chromosomal Aberrations

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ABSTRACT Radiosensitivity as determined by chromosomal aberrations in lymphocytes of patients suffering from fibroadenoma (n=31) and breast cancer (n=41) and was compared with the data from those of healthy individuals (n=10). Lymphocytes from healthy control set of individuals were exposed at G₀ stage to different doses (0.5 Gy, 1.0 Gy, 2.0 Gy and 4.0 Gy) of γ -rays. As over 60% cells remained viable at a dose of 2 Gy, this dose was selected for further experimentation. Lymphocytes were cultured for 48 hours to obtain data from first mitotic metaphases. Frequencies of chromosomal aberrations namely acentric fragments, double minutes, dicentrics and rings were recorded. Lymphocytes of patients with fibroadenoma or breast cancer exhibited higher radiation sensitivity compared to lymphocytes from healthy individuals. Lymphocytes of patients with different stages of breast cancer showed an increase in the frequency of chromosomal aberrations from stage I to IV.