

عنوان مقاله:

Inherent Radiation Sensitivity of Lymphocytes of Triple Negative (TN) and Luminal A: A Comparison Between Patients with Breast Cancer and Normal Individuals as Assayed by the Micronucleus Test

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خلاصه مقاله:

Background: About ۸۳% of patients with breast cancer (BC) undergo radiation therapy. These patients show various degrees of mild to acute reactions during and after the completion of treatment. The aim of this study was to compare inherent radiosensitivity of gamma-irradiated G₀-lymphocytes between BC patients and normal individuals using cytokinesis blocked micronucleous assay. Methods: Three to ۴ mL blood was drawn in heparinized syringes from patients and normal individuals. A portion of the sample was irradiated with gamma rays at a dose of ۳۰۰ cGy. Irradiated and non-irradiated samples were cultured in complete RPMI-۱۶۴۰ culture medium. A standard cytokinesis-blocked micronucleus assay protocol was followed for the preparation of binucleate lymphocytes. Slides were prepared and stained in Giemsa. Thousand binucleate cells were scored for the presence of micronucleus (MN). Data were statistically analyzed using SPSS software. Results: The results showed that the background frequency of micronuclei in both groups of control and Luminal A (LA) patients was nearly similar and relatively low but was significantly higher in triple negative BC (TNBC) patients. Significantly different ($P < 0.01$). The irradiation of lymphocytes led to a high frequency of MN in control and LA patients, relatively higher in LA patients ($P < 0.001$); but the frequency of MN was considerably lower in TNBC patients after irradiation. Conclusions: The results indicated radio-sensitivity of LA patients but radioresistance in TNBC patients. This different reaction of lymphocytes of patients with BC might be due to different status of genome instability in these patients.

