

Radiosensitivity of Peripheral Blood Lymphocytes in Patients with Genital CancerD. Savu^a, S. Cincea^b, R. Anghel^b and I. Petcu^a^a*National Institute for Physics and Nuclear Engineering, Atomistilor st. no. 407 Magurele Bucharest MG-6, 077125 Bucharest, Romania;* ^b*Oncologic Institute, Fundeni st. no. 252 Bucharest, 022338 Bucharest, Romania**savu_diana@yahoo.com*

Purpose: To evaluate the in vitro radiation sensitivity of the peripheral blood lymphocytes obtained from genital cancer patients (n = 20) in comparison to healthy individuals (n=15). Materials and Methods: Chromosomal radiosensitivity was measured by the cytokinesis-blocked micronucleus (MN) assay. Unstimulated whole blood cultures were exposed in vitro to 2,5 Gy ⁶⁰Co gamma rays delivered at a high dose-rate (HDR: 25 cGy / min) or low dose-rate (LDR: 0,25 cGy / min). Results: Spontaneous micronucleus frequencies (MNSP) in blood lymphocytes from patients and controls are not statistically different. Cancer patients group had a significantly higher mean baseline micronucleus frequency (p < 0,05) than normal healthy controls at LDR irradiation. After HDR irradiation, we observed no difference in radioinduced micronucleus frequency between the two studied groups of individuals. Conclusion: The results indicate that cancer patients were more radiosensitive than normal subjects at LDR irradiation. Enhanced radiosensitivity could be due to defects in DNA repair genes involved in genital cancer formation.