Analysis of chromosome lesions in women with gynecological disorders, residing in territories contaminated as a result of the Chernobyl accident.

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Abstract

Spontaneous levels of chromosome aberrations in peripheral lymphocytes of 95 women were analyzed in the course of medical examination of residents of Bryansk region territories (Klintsy district, and the town of Klintsy) contaminated after the Chernobyl NPP accident. All recognizable chromosome lesion types were scored in the first in vitro division metaphases stained with azure-eosin. The mean total aberration frequency in the sample studied was 5.1±0.4 per 100 metaphases, the main contribution being made by chromatid deletions, which is typical for a normal spontaneous aberration pattern. Abnormal patterns, including significantly elevated aberration frequencies and/or presence of chromosome type exchange aberrations, were found in 13 women. The aim of the study was to evaluate a possible correlation between cytogenetic anomalies and reproductive system disorders and/or the level of radiation contamination of the territory. As a result of our estimation, it was shown that cytogenetic anomalies were in fact higher in subjects residing in territories with a higher radiation contamination; however, the difference was statistically insignificant. The frequency of cytogenetic anomalies was higher in women with gynecological disorders including hormone-dependent and inflammatory (17%) than in healthy women (7%). This difference was statistically significant for subjects with hormone-dependent diseases of the female reproductive system, but not in patients with inflammatory disorders.