Contribution ID: **97** Type: **poster preferred**

Cytogenetic Assays For Assessment Of Ionizing Radiation-Induced DNA Damage

Tuesday, 16 October 2012 16:15 (1 minute)

During humans lifetime,they are exposed to physical, chemical, and biological agents. Ionizing radiation as a ubiquitous environmental physical agent induces DNA damage directly (as a result of deposition of energy in cells) or indirectly (as a result of free radical formation and oxidative damage . And because of Radiation usage in the treatment of a wide range of malignancies. Therefore, simple and informative techniques to measure cytogenetic and molecular damage would be greatly valuable in studying genetic risk during radiotherapy. When physical dosimetry is unreliable, biological dosimetry based on the level of induced DNA strand breaks, chromosomal damage and gene mutations could be used. Cytogenetic assays are classical methods to detect chromosome aberrations (CAs), which have been used as end points of exposure to genotoxic agents. Various methods of monitoring biological effects have been suggested that should be considered as internal dosimeters in the detection of increased genotoxic and presumably also carcinogenic risks. Among them, there are different cytogenetic techniques that provide information about damage in individual cells: detection of chromosomal aberrations, sister chromatid exchanges, and micronuclei in peripheral blood lymphocytes. methods, such as dicentrics, micronuclei, and PCC, eventually in combination with chromosome painting, are currently among the most informative and widely used methods for acute exposure situations. One of the advantages of cytogenetic dosimetry is that this biological dosimeter can be assessed at any moment, whereas physical dosimeters are not always present on the subject.

Primary authors: Ms ASSADI, najmeh (babol university of medical sciences); Ms TAHMTAN, raziyeh (babol university of medical sciences)

Presenter: Ms ASSADI, najmeh (babol university of medical sciences)

Session Classification: Poster Session 1

Track Classification: Biological and Physical Dosimetry