 Int J Hum Genet, 4(1): 65-69 (2004)
PRINT: ISSN 0972-3757 ONLINE: 2456-6360

Cytogenetic Analysis of Radiotherapeutic and Diagnostic Workers Occupationally Exposed to Radiations

P. K. Gadhia, Nehal Shah, Sweta Nahata, Swati Patel, Krupa Patel, Meonis Pithawala and Dipesh Tamakuwala

Department of Biosciences, South Gujarat University, Surat 395 007, Gujarat, India

KEYWORDS Radiation workers; human chromosomes; CAs; SCE; micronuclei

ABSTRACT The study group comprised of 12 occupationally exposed "radiotherapeutic and diagnostic workers", working since last 12 years on an average (service duration 3 to 20 years), with 12 age and sex-matched controls not exposed to any kind of radiation and belonging to same socio-economic status as the radiation workers. Cytogenetic end points studied were CAs (Chromosomal aberrations), SCE (Sister chromatid exchange) and MN (Micronuclei). Hematological parameters were also studied. In addition, co-mutagenic/synergistic *in vitro* effects of known mutagen Mitomycin-C (MMC) on lymphocytes of these workers were evaluated. Results revealed a significant increase in dicentric ($P < 0.05$) as well as MN ($P< 0.01$) among radiation exposed workers when compared to controls. By contrast, no change in SCE frequencies and hematological parameters were observed. After in vitro MMC treatment CA (mainly dicentric and ring) increased significantly in lymphocytes of radiation exposed workers. Based on these observations, a preliminary indication of the study could be that long term low level radiation exposure may probably damage the genetic constitution of an individual.

Home Back