

SISTER CHROMATID EXCHANGERS ANALYSIS AMONG UNDERGROUND WATER WELLS WORKERS IN SAUDI ARABIA

Keywords

Cytogenetics, Sister Chromatid Exchanges and Biological indicators of exposure

Summary

In the absence of permanent rivers or bodies of water Half of the Saudi Arabia domestic water consumption is provided through desalination. The other half is derived from groundwater. Groundwater from the Disi aquifer is already used for drinking water in parts of Jordan and, more extensively, in Saudi Arabia, where it is known as the Saq aquifer. Some of the geological analyses of the host sandstone aquifer rocks show ^{228}Ra and ^{226}Ra . The usefulness of chromosomal aberrations analysis as a bioindicator for ionizing radiation effect was tested in underground water well workers at Saudi Arabia in this industry producing technologically enhanced naturally occurring radioactive material (TENORM). The induction of sister chromatid exchanges (SCE) was studied to assess the potential genotoxic effects of occupational exposure to Radiation. Blood samples were obtained from 10 persons working in underground water well. The age range of the workers was 25-40 years and their duration of service ranged from 3-7 years. For comparison blood samples were also collected from 10 subjects (controls) who belonged to same age and socioeconomic status. Subjects in the both groups were nonsmokers and non alcoholics. The occupationally exposed workers showed higher SCE frequencies than the non-exposed group. The results of this study demonstrated that occupational exposure to radiation leads to a significant induction of cytogenetic damage in peripheral lymphocytes of workers engaged in underground water well.

Primary author: Prof. ENTISSAR S. ALSUHAIBANI (here)