Radiation protection of workers living on the contaminated terrains

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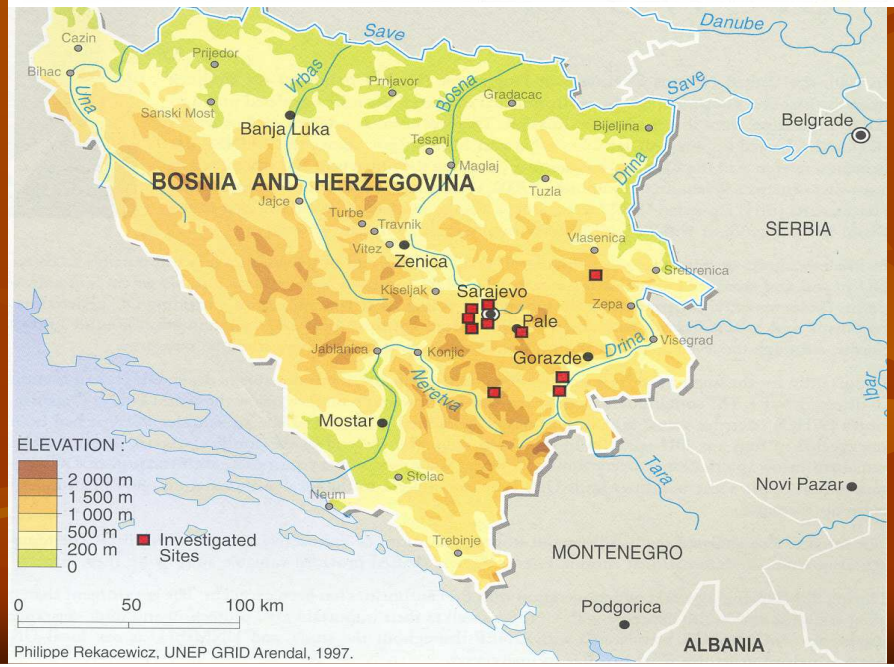
INTRODUCTION
Radiation protection Environmental

- **Have to show the position of each person present at the accident site**
- **all persons involved in a radiation accident should be carefully interviewed**
- **the assessment of the extent of contamination , for purposes of dose assessment**
- **to reduce internal contamination, (if there is suspected)**
- **haelth rissc assessment including number blood cells and ch.aberr.**
- **The following procedures are recommended for personnel monitoring and decontamination**



PURPOSE

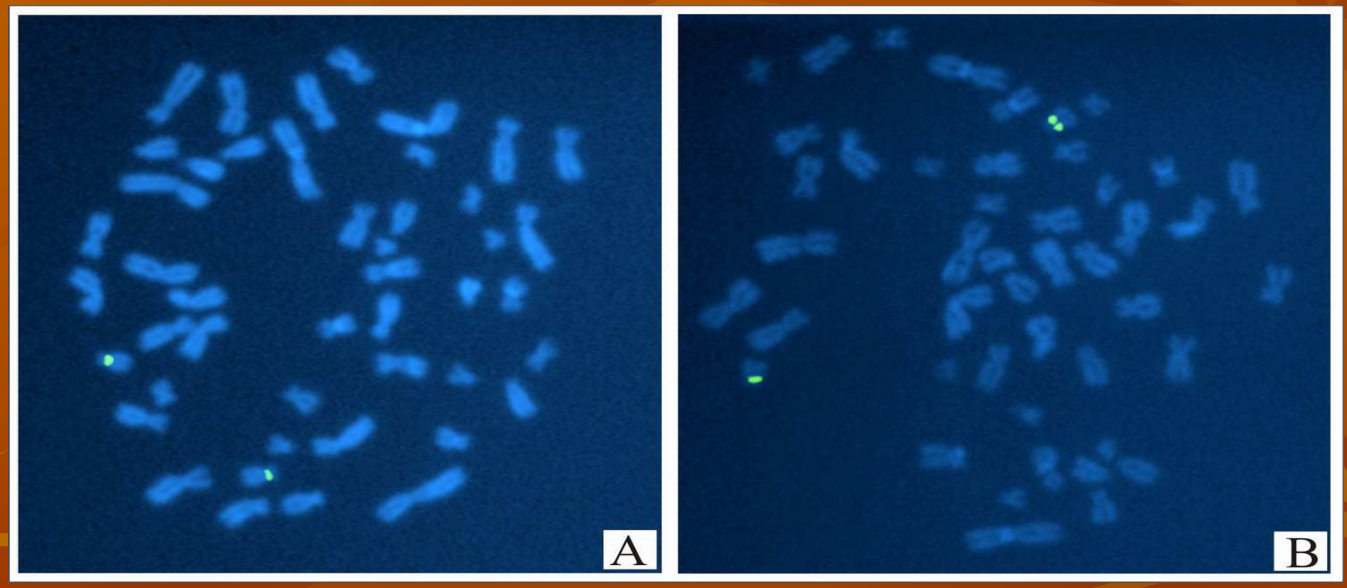
- This study investigated health risks in workers permanently or occasionally residing in the contaminated terrains by low ionizing radiation doses originated from ammunition containing depleted uranium (DU).

METHOD

- The studied population had been composed of two test groups (T-I, T-II) occasionally exposed to DU, and two referent (R-I, R-II) groups not exposed at any time to DU. All of them had been evaluated for the following: complete clinical examination and blood count, presence of immature forms and blasts, leukocyte alkaline phosphatase activity and cytogenetic tests (lymphocyte karyotype and chromosomal aberrations). The probability of onset of the characteristic complete biomarkers – chromosomal aberrations, had been specially analyzed using logarithmic function of the Poisson regression.

Methodology

Chromosomes



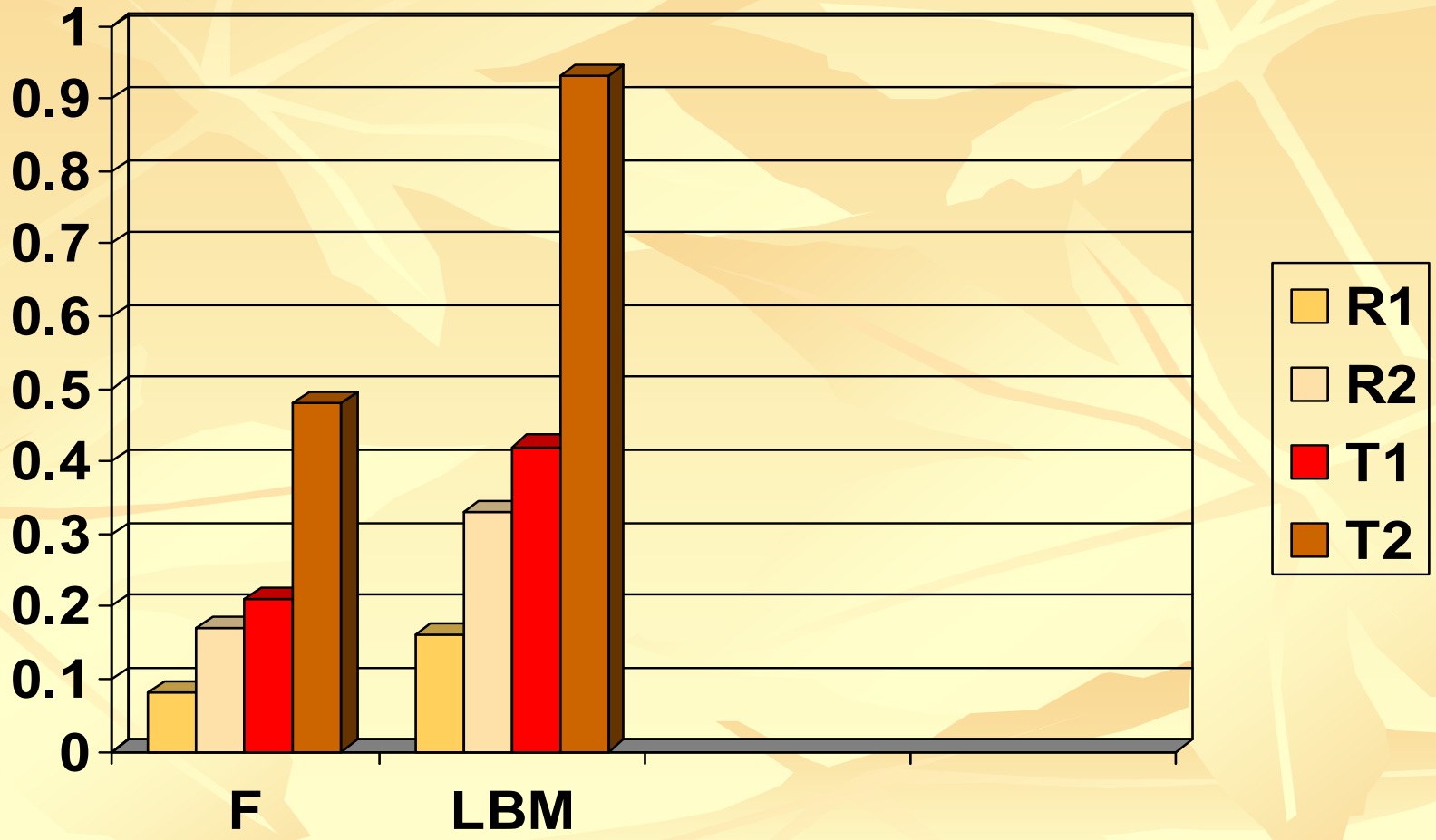
Fluorescence in situ hybridisation

Results and conclusion

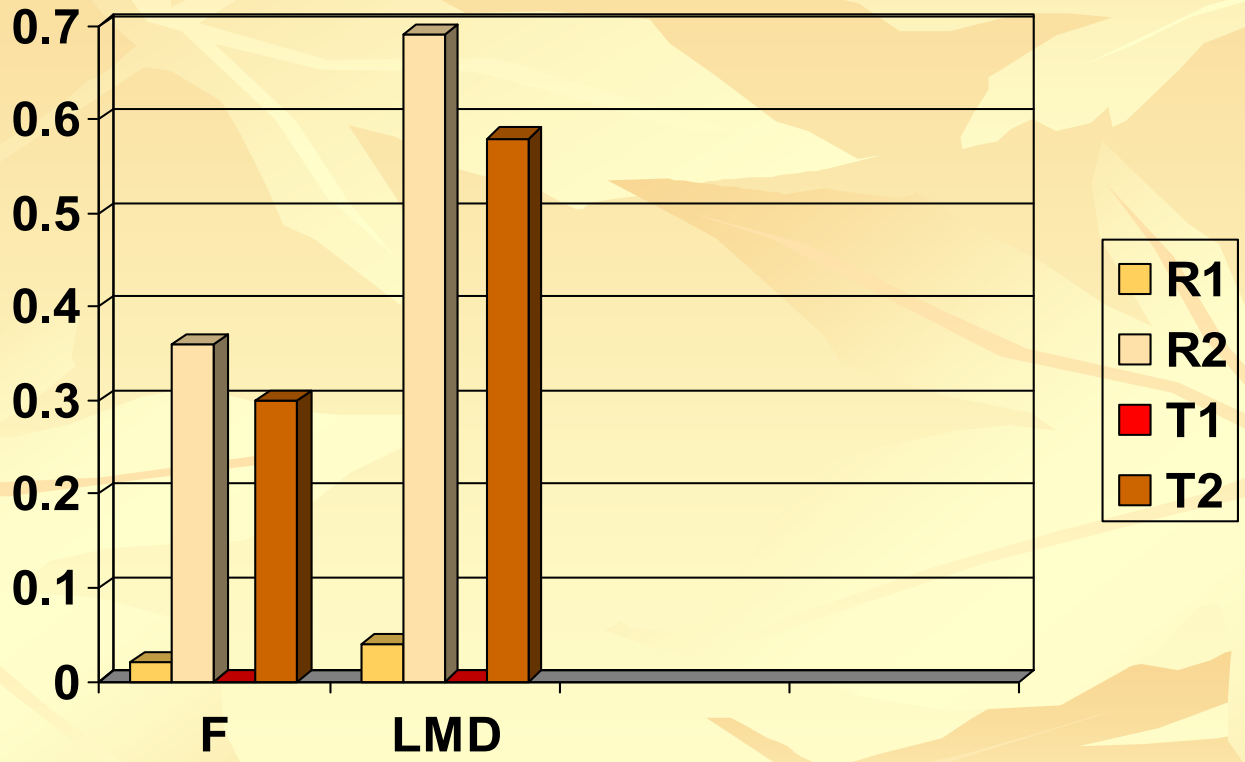
The difference between the groups was found in potential exposure to DU, which was not found in the reference group R-I and R-II being probable in the test group T-I and T-II. Estimated function of density of probabilities of Poisson distribution of the chromosomal aberrations in the test group T-II was drastically different from the corresponding distribution of the referent group R-I and to the somewhat lesser extent from the group R-II; Wilcoxon test exactly confirms presence of significant difference between the reference group R-II and test group T-II, $p<0.05$.

Damages of chromosomes and cells, had been used for the relative radiation risk assessment, were highest in the test group T-II of workers additionally occupationally exposed to DU. Group of workers T-I, had been exposed to DU working on contaminated terrain, have had certain risks of cell and chromosome damages, and that risk was not greater than the risk to the referent group R-II of workers occupationally exposed to ionizing radiation.

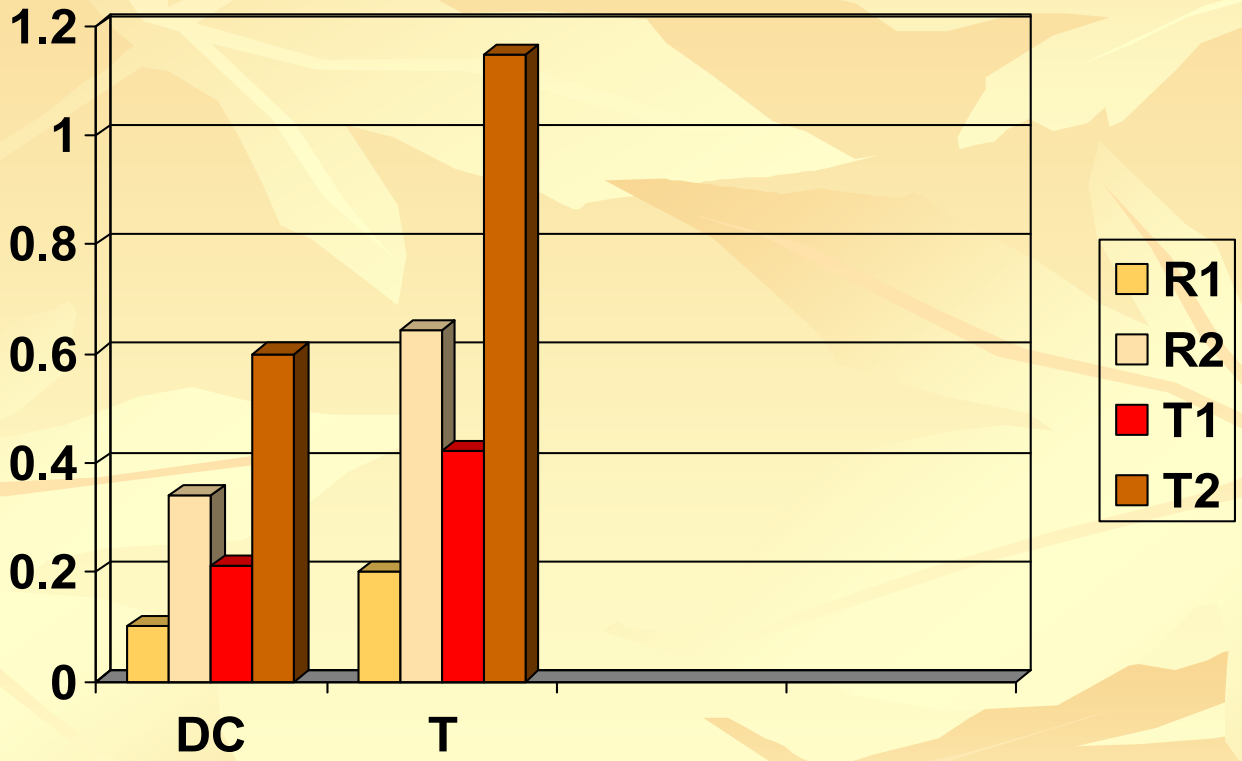
Poison distribution of chromosomal aberrations in the reference and test groups



Chromatide brackes

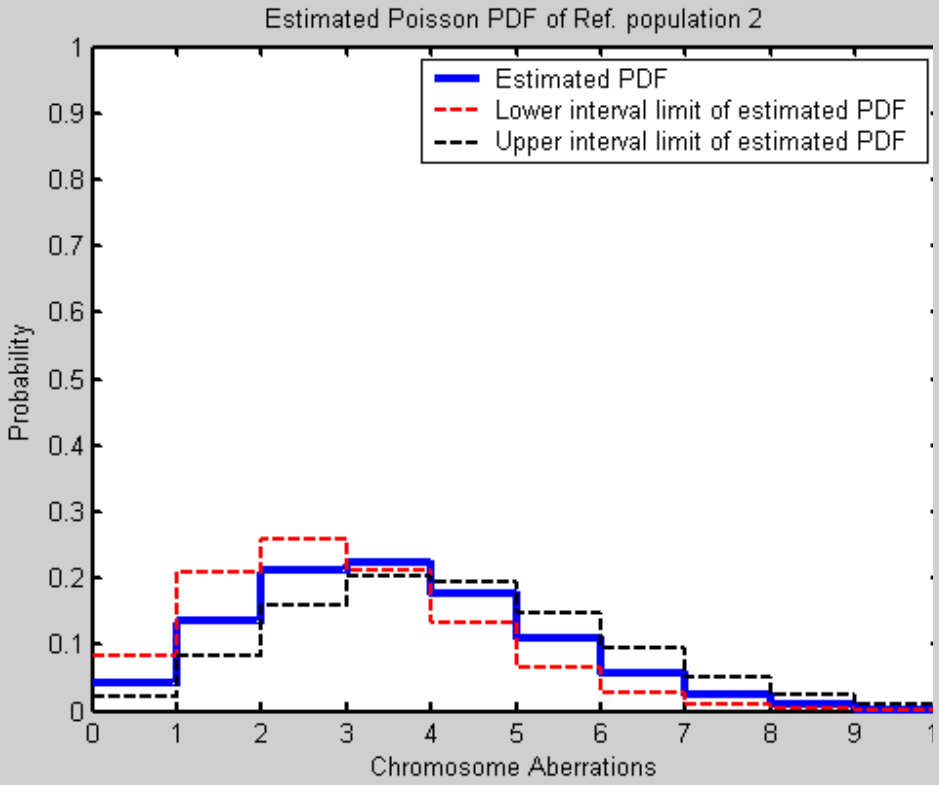


DAMAGED CELLS - Ly



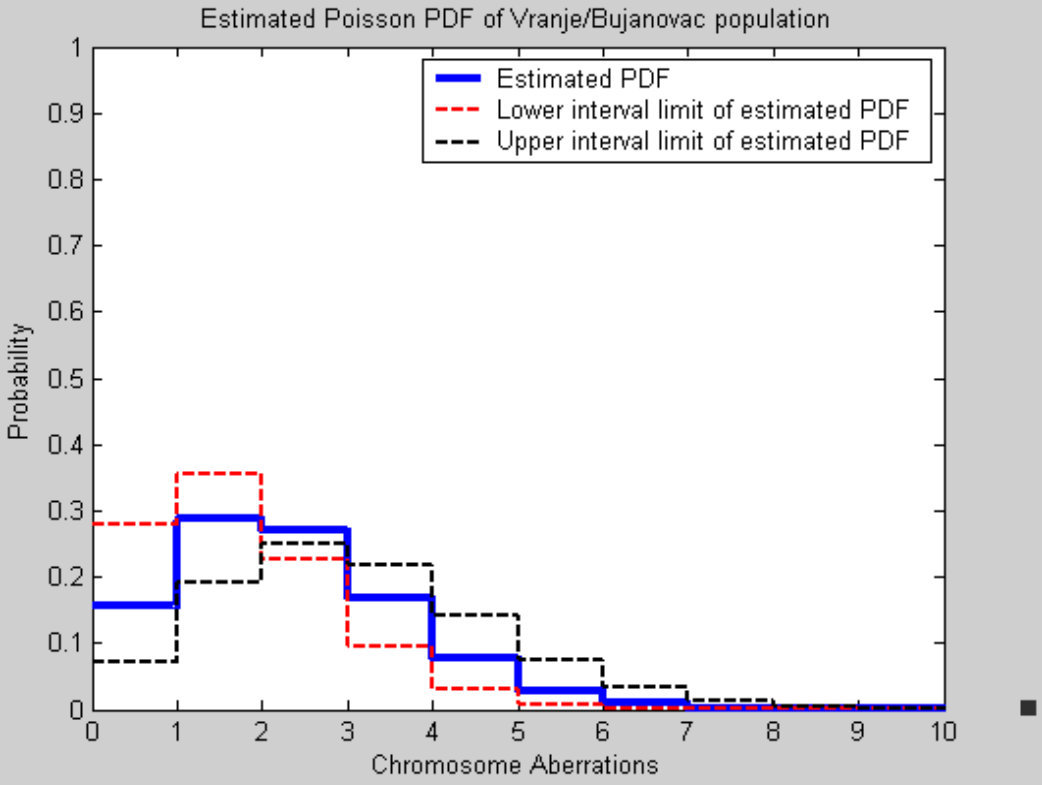
RISK ASSESSMENTS

Population exposed to occupational risk for radiation



Relatively Risk RR >3%

Population on contaminated terrene



Relatively Risk RR>2%

***In control RR ≤1%**