

THE NECESSITY OF REVISING OF A-BOMB SURVIVORS DATA
IN RESPECT OF INDIVIDUAL SENSITIVITY TO RADIATION

T.M. Domanski
Institute of Occupational Medicine
0-950 Lodz; P.O. Box 199, Poland

ABSTRACT

Nowadays reconsideration of 'dose-response' relation in A-bomb survivors data is mainly concerned with the re-evaluation of doses. However, new findings on the individual sensitivity of organism to ionising radiation imposes the real necessity of reconsidering the data on A-bomb survivors.

These findings are described briefly in the paper. They are as follows:

- the endogenous content radioprotective enzyme - Superoxide Dismutase (SOD)- that naturally exists in the body, in healthy, non-exposed, human white population varies in the interval of three ranges of magnitude,
- the endogenous content fluctuates during the human life but generally remains of the same level,
- the experiments with animals (with similar to human distribution of SOD enzyme in organism) reveal that the survival of acute dose of low-LET radiation is the simple, proportional function of endogenous SOD content in the body, moreover,
- the frequency of chromosomal aberrations strongly depend on the SOD endogenous level in lymphocytes. The subgroups with different levels of SOD reveal 3-fold difference in chromosomal aberration at the same level of exposure.

Therefore, these observations impose the absolute necessity of reconsidering the A-bomb survivors data in respect of possible individual and ethnic differences in natural endogenous content of SOD.

Paper to present the above mentioned findings and briefly discuss, giving proposals of possible research projects regarding A-bomb survivors and other naturally or occupationally exposed populations. It seems to be reasonable that these ideas would be considered by interested researchers and relevant scientific organisations (ICRP, IAEA, WHO) for possible initiation of scientific study or modifying present studies.