Radiation Biodosimetry

Medical management of suspected radiation casualties requires multiple parameter biological dosimetry.

Useful parameters include the assessment of radioactive contamination, clinical signs and symptoms, physical dosimetry, and early-response changes in hematology, blood chemistry, and protein biomarkers.

In cases of mass casualties and radiological terrorism, military and civilian first-responders must be able to triage individuals in the field.

Recent Publications


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CURRENT RESEARCH

Efforts transitioning to operational biodosimetry practice

- Development of medical recording and software-based applications and worksheets to facilitate management of radiation dose and injury assessment
- Integration of multiple-parameter early-phase biodosimetry for clinical biodosimetry applications
- Characterization of prodromal clinical signs and symptoms for radiation exposure diagnostics
- Combined use of hematology biomarkers with clinical signs and symptoms for radiation dose assessment

Immunodiagnostics
Blood Protein Bioasay

- Validation of blood proteomic, metabolomic, and urinary biomarkers for early-phase and organ-specific radiation injury and dose assessment

Automation of cytogenetic assays for radiation dose assessment

- Identification of radiation bioassays, using nucleic-acid-based detection methodology, for early-expressed and persistent radiation late effects

RESOURCES

AFRRI Web site
www.usuhs.edu/afrr/

Medical data forms and software tools
www.usuhs.edu/afrr/outreach/biodostools.htm

Guidance
www.usuhs.edu/afrr/outreach/guidance.htm

Medical Effects of Ionizing Radiation Course
www.usuhs.edu/afrr/outreach/meir/meir.htm

Online dose estimator
http://www.remm.nlm.gov/ars_wbd.htm

BAT deployment
http://www.mc4.army.mil