

- 184 Time variation analysis in breast cancer mortality of A-Bomb survivors by MVK two-stage models for carcinogenesis.

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This paper describes the validation of MVK model for radiation-induced cancer risk estimates based on the A-bomb survivor data in Hiroshima and Nagasaki. The two-stage clonal expansion models for carcinogenesis by Moolgavkar and Venzon (MVK model) provide biologically-based models for considering the variation of relative risk with time. The time-dependent excess hazard function for a single exposure was derived from the assumption that radiation contributes to carcinogenesis as an initiator. On this basis, we derived some formulas as deterministic models by approximation, and analyzed breast cancer mortality of the A-bomb survivors by model fitting.

- 185 Mortality analysis of leukemia based on the exposure dose among A-bomb survivors registered by Research Institute for Nuclear Medicine and Biology at Hiroshima University

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We investigated the relationship between exposure doses reported by Hoshi et.al. and mortality of leukemia from 1968 to 1989 among the fixed cohort of A-bomb survivors registered by Hiroshima University. Leukemia mortality increased significantly with the dose estimated here. For both shielded kerma and organ-absorbed dose, the relative risks were 2.01 (90%CI 1.24-2.78) and 2.37 (90%CI 1.65-3.39), respectively. The excess deaths per 10^4 PYGy was 0.98 and the attributable risk was 42.1(%) for shielded kerma. It was reported that the relative risk of leukemia had decreased with time after 1950. However, the relative risk was still significantly high for the years 1968-89 among survivors registered by Hiroshima University, and was similar as the result by time interval from RERF.

- 186 Mortality by Cause of Death of Survivors in Nagasaki at Early Time of A-bomb Explosion.

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The mortality by cause of death of survivors at early time after A-bomb explosion was analyzed with the A-bomb disaster survey in Nagasaki City. A number of 11,292 households was known existing before the A-bomb explosion, and 10,371 households were confirmed where 47,331 persons were known belonged to these households. We selected 14,971 survivors whose shielding condition was of wooden house. We used the Cox proportional hazards model to determine the effect of distance from the hypocenter on the mortality after adjusted for the confounding factors, i.e., age and sex. The mortality by infections, cancers, heart diseases and digestive system diseases was significantly related to distance from the hypocenter.