

Effects of radiation exposures

- 147 Radiation Ulcer as a Late Effect of External Irradiation After Coronary Angiography
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Recently, techniques of IVR are remarkably progressing in many medical fields. However, reports about radiation ulcer as a late effect are comparatively unusual. We herewith present 2 cases of radiation ulcer more than six months after several times of coronary angiography (CAG) or percutaneous transluminal coronary angioplasty (PTCA). Case 1. 60-year-old woman with myocardial infarction. She received four times of CAG or PTCA (totally, the patient received 58.5 Gy), and finally radiation ulcer was made. Until ulcer appeared, dermatologist could not tell radiation ulcer from drug eruption or breast cancer. Case 2. 68-year-old woman with unstable angina pectoris. She also received five times of CAG or PTCA (totally, 45.5 Gy was irradiated). Radiation ulcer was made twenty-two months after final irradiation. To avoid the formation of radiation ulcer as a late effect of irradiation, radiologists must educate the doctors in other departments and should take care and participate in every examinations.

- 148 Cyclin D1 overexpression in Thyroid Tumors in the Radio-contaminated area after the Chernobyl accident, and its Relations with Aberrant beta-catenin and Pin1 expression
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A marked increase in the incidence of papillary thyroid cancer (PTC) has been documented in the radio-contaminated area since the Chernobyl accident. Cyclin D1 is a target molecule activated by beta-catenin in Wnt-signaling. Regardless of a high prevalence of cyclin D1 overexpression in PTC, beta-catenin mutations were restricted to familial or undifferentiated thyroid carcinomas. Recent reports suggest prolyl isomerase Pin1 promotes cyclin D1 overexpression directly or through accumulation of beta-catenin. This study aimed to clarify a role of Wnt-signaling during thyroid tumorigenesis in the radio-contaminated area after the accident. We examined 12 cases of follicular adenomas and 20 cases of PTC. All PTC displayed a strong cytosolic and/or a marked decrease in membrane beta-catenin and cyclin D1 overexpression. PCR-SSCP could not demonstrate any mutations of beta-catenin exon 3. Upregulation of cyclin D1 transcripts were observed in 40.0% of carcinomas and 36.4% of adenomas by real-time PCR. In contrast, only a case (11.1%) of 9 Japanese PTC showed overexpression of cyclin D1 transcripts. Pin1 overexpression was observed in carcinomas by immunohistochemistry and RT-PCR. This study demonstrated a higher prevalence of cyclin D1 overexpression during thyroid carcinogenesis in such area. Pin1 overexpression may play a role on cyclin D1 overexpression in PTC.

- 149 Epidemiological Study of Geographical Mortality Pattern as a Monitoring in the Vicinity of Point Sources of Pollution: Infant Mortality (age < 1 year) from Congenital Anomalies
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Geographical variation by calendar year and areas for infant mortality (age < 1 year) from congenital anomalies has been evaluated by epidemiological study to resolve the problems of public concerns about possible health effects near point sources of pollution. Gamma distribution (two-parameter form) was used for empirical Bayes estimates of the standard mortality ratio. Data are based on the six periods (1972, 1973–77, 1978–82, 1983–87, 1988–92, 1993–97) of 3,255 area units (cities, towns, and villages) in Japan. In these periods the moderate decrease was observed in contrast to the marked decrease of infant mortality from all causes. In 1995 the proportion of congenital anomalies was about 35%. With few exceptions the maximum likelihood estimators can be determined for each prefecture where the area units belong to although they often cannot be so if the same procedures are applied for cancers (all ages). One of the reasons may be because of uni-modal distribution reflecting that causal factors of congenital anomalies are limited prior to their births as well as because of small number of deaths. The other remaining issues are how to take into account of relative position of each area unit as well as geographical hierarchical structure.