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General Comment

We all know that the nuclear industry is in deep trouble, the industry is spending hundreds of millions to change law and rules to try to keep itself alive.

This absurd attempt at using the NRC to massively increase the amount of radiation we are exposed to is foolish and dangerous given the strong evidence that even low cumulative doses as low as 4mSV can show statistically significant proof that low dose radiation is harmful.

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Discussion

Our most striking finding was the statistically significant positive trend in the risk of childhood leukaemia with increasing dose of naturally-occurring gamma-radiation, of a magnitude comparable to that predicted by previous calculations based on standard risk and dose models. Excess risks were largely insensitive to adjustment for different measures of SES, to different estimates of radon exposure or to different assumed minimum latent periods.

The 95% confidence interval on our leukaemia risk estimate is wide, but it is, nonetheless, instructive to compare the leukaemia risk that we observed with estimates derived from the Japanese atomic-bomb survivors, who were exposed to higher acutely-delivered doses. Table S23 shows that the cumulative leukaemia incidence risk at age 15 years predicted by the relative risk model derived here (and assuming 1 mSv/y to the RBM) is somewhat higher, at about 0.019%, than that predicted by the UNSCEAR 2006 models 1, 0.010%, and by the BEIR VII models 37, 0.007%. At attained ages greater than 4 years derived risks were higher than those predicted by

both the UNSCEAR 1 and BEIR VII models 37; at younger ages our derived risks were below those of UNSCEAR but higher than those of BEIR VII. However, given the substantial uncertainties in all estimates there is reasonable agreement between the risk predictions. These risks should be compared with the cumulative background risk of leukaemia incidence to age 15 years, which is around 0.06%.17

The results of the analysis using radon exposure-rate or gamma-ray dose-rate (Table S18) throw light on effects of exposures in utero, since the dose received during any antenatal period will be proportional to the radon concentration or gamma-ray dose-rate. The dose received in utero will generally be smaller than the dose accumulated to diagnosis because the latter is usually incurred over a longer period. The results suggest that for leukaemia cumulative exposure (including the postnatal period) is the more important measure of exposure. The risk we derive in terms of cumulative RBM dose, 12% ERR mSv1 (95% CI 3, 22), is similar to that obtained from the largest obstetric X-ray exposure study, 5.1% ERR mGy1 (95% CI 2.8, 7.6) 38.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3998763/#SD25