Re: Solid Cancer Incidence in Atomic Bomb Survivors Exposed In Utero or as Young Children

In a recent issue of the Journal, Preston et al. (1) wrote that their study provides “direct evidence that radiation exposure is associated with increased risks of adult-onset solid cancers in atomic bomb survivors.
exposed in utero or in early childhood. For those exposed in early childhood, the ERRs may decrease with time. The absolute risks among those exposed in utero are therefore likely to be considerably lower than simple projections based on studies of childhood cancers in other in utero-exposed populations [which have been estimated to be approximately 6% per Sv by age 15 (19)] and may be lower than absolute risks among those exposed early in life.”

The authors’ interpretation of the evidence from this important study is unclear without the specification of the meaning of “absolute risks” in the quoted passage. To be clear, their findings do not imply that the lifetime excess absolute risk of cancer among those exposed to radiation in utero is less than 6% per Sv, an estimate by Doll and Wakeford of the excess absolute risk of cancer under age 15 years (2). To the contrary, the lifetime excess risk of cancer from in utero exposure may be defined as the excess risk of childhood cancer plus the excess risk of cancer after childhood. The study by Preston et al. of cancer incidence commenced approximately 13 years after the atomic bombings in Japan; it provides evidence regarding excess risk of adult-onset cancers that complements evidence from studies of the excess risk of childhood cancers following in utero exposure to ionizing radiation (2–5).

Although their analyses suggest that the excess relative rate of adult-onset cancer following in utero exposure diminishes in magnitude with increasing time since exposure, their findings provide important epidemiological evidence regarding the risk of adult-onset cancer due to in utero exposure to ionizing radiation. Their study suggests that the lifetime excess risk of cancer following in utero exposure is greater than simply the excess risk of childhood cancer, the period of life that has been the focus of most prior epidemiological work on the carcinogenic effects of in utero irradiation (2–6).

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References

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Editor’s note: Dr Preston declined our invitation to respond to this correspondence.
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