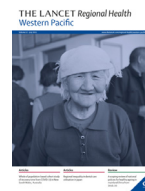




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News

A combined scientific and public health approach is needed to evaluate the health impacts of internal exposure to radiation

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Immediately after the atomic bomb was dropped on Hiroshima on August 6, 1945, a “black rain” fell. The term ‘black rain’ refers to the rain containing soot that was stirred up by the blast and the fire that consumed the city, resulting in literally black-colored rain that also contained radioactive material [1]. A certain area where ‘black rain’ fell was covered by government relief programs, but many residents outside of that area and their families were also affected by the black rain and suffered health problems. Individuals whose health was damaged by the black rain demanded to be recognized as atomic bomb survivors by the government, as described [1]. The government soon designated as “area with heavy rain” whose residents could receive government relief as atomic bomb survivors. The area is also known as the “area covered by government relief programs (a special area where residents are eligible for medical checkups)” [1,2]. Only people who were residents of the area covered by government relief programs were eligible to receive free medical checkups, and if residents developed 1 of 11 illnesses specified by the government, they received a Health Handbook for Atomic Bomb Survivors, and their medical expenses were covered by the government [1,2]. However, personal testi-

mony and studies by Hiroshima City have indicated that the black rain also fell outside of the area covered by government relief programs, and that in fact the black rain fell over an area that is six times the size of the area covered by the government relief programs [2].

Residents of the larger area took their case to court in Japan to seek redress for their illnesses caused by the black rain. Decisions by the first and subsequent courts were handed down, and on July 26, 2021 the government decided not to appeal further, resulting in a victory for the plaintiffs. The residents of the larger area were deemed to be eligible for the same government relief programs as the residents in the original area. This was an important component of the court’s decisions, but the court’s suggestion that “the potential for internal exposure needs to be considered” is also a vital part of the opinion.

There are numerous aspects of the health impacts of internal radiation exposure that are still unknown. One study indicated that internal exposure to radioactive material poses a greater health risk than that posed by external exposure [3]. The physical and mental health impacts of internal exposure as a result of the dropping of atomic bombs on Hiroshima and Nagasaki, the Chernobyl accident, the Semipalatinsk Nuclear Test Site, the Fukushima Daiichi Nuclear Power Plant accident, and other incidents involving radiation must be accurately ascertained scientifically. Many people are still suffering from the effects of radiation caused by the above-cited disasters. What is most important is keeping those people physically and mentally healthy and helping them to lead full lives. An approach combining scientific and public health determinations of the health impacts of internal exposure is needed. The concept behind this approach must be coordinated

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at national and local levels. Personnel in every field and related agency or organization should collaborate in this approach when necessary.

Declaration of Competing Interest

The authors declare no conflict of interest.

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