

Relationship between radiation exposure and incident atrial fibrillation¹ among atomic bomb survivors

RERF scientists employed sophisticated statistical methods in this study to analyze the association between radiation exposure and occurrence of atrial fibrillation (AF) among participants in the Adult Health Study (AHS)², made up of Hiroshima and Nagasaki atomic bomb survivors.

As a result, over more than 40 years of follow-up, 276 AF cases were identified, for an incidence rate of 1.56 per 1,000 person-years (roughly the same as the average AF rate in the Japanese population). After adjustment was made for gender and city, there was no evidence of increased risk of AF occurrence related to radiation exposure dose. The same result was obtained after adjustment was made for conventional AF risk factors, such as body mass index (BMI)³, heart disease, and so on.

In conclusion, no clear positive association was found between radiation dose and risk of AF occurrence.

Notes

¹ Atrial fibrillation (AF):

One kind of arrhythmia (a state in which the heart beats slowly, quickly, or irregularly) in which the upper chamber of the heart, called the atrium, moves erratically and does not function normally.

² Adult Health Study (AHS):

A clinical research program based on biennial health examinations. With the objective of investigating long term health effects such as disease incidence of A-bomb radiation, this study of about 20,000 participants has been conducted since 1958.

³ BMI:

A measure to understand whether a person's bodyweight is healthy based on a calculation of bodyweight and height (weight [kg] ÷ height [m]²).

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RERF's objective with this brief outline is to succinctly explain our research for the lay public. Much of the technical content of the original paper has been omitted. For further details about the study, please refer to the full paper published by the journal.