Author’s response to reviews

Title: Radiation Exposure and Cancer Risks from CT Examinations in Japan

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Version: 2 Date: 28 August 2010

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Reply to Reviewers’ comments

Reviewer 1: Dr. Amy Berrington de Gonzalez
Major 1-3 As stated by the reviewer, the cancer risk estimates in our study may not be appropriate. According to the reviewer’s suggestion, we have decided to focus on the basic survey data. Also, to find the factors which may contribute the estimated effective doses, these were correlated with hospital size (number of in-patient beds), the number of patients undergoing CT in a month, and the row number of the CT detector by using a linear regression analyses. However, we were not able to find correlating factors. These results were added in the manuscript.
Minor 1 The numbers of paediatric CT examinations have been added.
Minor 3 Table 1 has been changed to make it easier to understand. We believe it is a little better than the previous one.

Reviewer 2: Dr. Cecile M. Ronckers
A1 We still think that radiation dose estimation in paediatric patients is problematic. We provided only the number of paediatric patients undergoing CT examinations.
A2 Only about half of the hospitals and clinics responded to the request for information. Therefore, the mean numbers (for hospitals and clinics separately) were calculated, and were multiplied by the number of CT scanners to estimate the total numbers of patients, examinations, and scans. This method is of course one of the limitations of this study, and passages were added in the Material and Methods and Discussion.
A3 Discussion concerning LAR has been eliminated.
A4 Discussion concerning LAR has been eliminated. But comparison between the estimated effective doses obtained in this study and those from previous reports in Japan, Germany, UK and Netherland have been added in the Results and Discussion.
B1 Table 1 has been changed to make it easier to understand. We believe it is a little better than the previous one.
B2 Tables 3 have been removed.
B3 Discussion concerning LAR has been eliminated.
B4 Table 1 has been changed according to the reviewer’s suggestion.
B5 The number of patients undergoing CT in Gunma prefecture may be underestimated. This has been clarified.
B6 This sentence has been changed: “throughout the calendar year” has been added.

B7 Tables 3 have been removed.
B8 The title has been changed to simply “Radiation Exposure from CT Examinations in Japan”.
C1 This sentence has been changed to “…and CT examinations of the chest and upper abdomen contributed to approximately 73.2% of the collective dose from all CT examinations”.
C2 In Results section of the Abstract, it is mentioned that “There was a large variation in effective dose among hospitals surveyed, particularly with lower abdominal CT (range, 2.6-19.0 mSv)”.