Reviewer's report

Title: Male gonadal dose of ionizing radiation delivered during X-ray examinations and monthly probability of pregnancy: a cross-sectional study.

Version: 1 Date: 25 November 2005

Reviewer: Jens Peter Bonde

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General
The paper reports couple fecundability according to an estimate of cumulative male gonadal ionizing radiation dose conferred by X-ray examinations.

The study is population based, cross-sectional and uses telephone interviews to obtain reproductive histories from the women (response 70%) and postal questionnaires to obtain data on X-ray examinations among the men (response 78%). The findings provide no evidence of a detrimental effect of male gonadal dose of ionizing radiation delivered during radio diagnostic on fecundability.

The hypothesis is well defined and are considered original and interesting. The paper reads well, methods are adequately described and comply with state of the art recommendations for TTP-analysis. Several sensitivity analyses have been performed. The discussion is balanced and conclusions are in good agreement with the data.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The main limitation of this study are probably the retrospective recall of the reproductive history and covariates 50 years back – as well as recall of X-ray examinations many years back in time. While the latter is discussed in detail, little is mentioned about recall of reproductive history except that there is some data to indicate that women can recall TTP in pregnancies leading to live births. But how is recall of infertile periods? – probably far less reliable. Poor recall of infertile periods is indicated by the small number of such periods (<<10%). Recall of frequency of sexual intercourse during specific time periods back in time must also be very questionable. These issues might be discussed and commented upon in more detail.

2. A table explaining important variables as pregnancy in spite of contraception, type of contraception etc. would be helpful.

3. A more clear description of the creation of the cohort, including response rates, would also be helpful (p. 11-line 5-18). It is not clear what happens with pregnancies that end in spontaneous abortions or stillbirths.

4. The effect of X-ray radiation on testis function is expected to be transient, unless severe effects on stem cells and/or Sertoli cells occur. The latter is unlikely at medical X-ray examinations. Therefore it can be questioned whether the approach using the cumulative doses is the most relevant? Should be discussed. If at all possible with the retrospective data, the fecundability during 1-2 years after exposure would be more interesting to examine. If not, possible it should be stressed that the transient effect would not be detectable by the chosen design.

5. Truncations bias may be a concern because data were collected in spring 2000 and couples that
discontinued contraception in June 1999 were included thus only leaving 6-12 months of follow-up for couples included during late Spring 1999.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Table 1: N=1057 does not correspond to the number mentioned in the legend and in the text (n=1109).

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests,

Jens Peter Bonde