Reviewer’s report

Title: Fertility in four regions spanning large contrasts in serum levels of widespread persistent organochlorines

Version: 1 Date: 12 September 2005

Reviewer: Tina Kold K Jensen

Reviewer’s report:

Fertility in four regions spanning large contrasts in serum levels of widespread persistent organochlorines

General comments
This is a very interesting manuscript dealing with problems of general public interest. The authors have collected fertility data and semen quality among couples from four polluted areas. This must have been a demanding task and the results are interesting. The authors try to relate geographical and inter-country differences in POP exposures to fertility and semen quality. This is building on an assumption of a relationship between TTP, semen quality and POP exposure even though no data showing any relation between POP and TTP and semen quality are presented. If no association is found other factors may explain the observed differences in TTP.

The manuscript is long and the TTP data are hardly comparable. Differences in unplanned pregnancies, participation rate and contraceptive practices make it difficult to compare TTP across countries. Especially the Swedish data differs and they are collected with another purpose dealing with TTP retrospectively collected data from fishermens’ wives. I am therefore not sure that the Swedish data are comparable to the others and suggest that they are excluded even though the authors adequately discuss these biases.

Introduction
The introduction is long and it is not necessary to start the introduction with the DBCP story as these were occupationally exposed. Likewise, the exposure assessment difficulties in epidemiology do not need to be addressed in the introduction.

In the second paragraph the authors conclude that no association between maternal estrogen levels and congenital malformations in male reproductive tract and semen quality. The reference (5) is however only to POP not estrogens in general.

Materials and methods
This is also a long and very detailed section but adequately describes differences in data collection. It may be shortened for example the section on semen quality may refer to a previous paper.

Results
As mentioned in the general comments, I suggest excluding the Swedish data.

There are 8 tables which is too many. I suggest combining table 1, 2 and 3 since they deal with differences between countries. In table 2 female smoking and alcohol consumption is shown, is that during pregnancy or TTP? The differences in parity between countries makes it almost impossible to adjust for, it would therefore be interesting to see the TTP results for primiparous women across countries especially since POPs are strongly related to parity. Likewise for women using similar contraception, since there are large differences in contraceptive use and diseases in diseases in reproductive organs across countries (Table 2 and 4). Why were FR differences not adjusted for differences in contraceptive practices (table 5)?
Table 4 deals with a central problem in the TTP data. Sensitivity analysis including accidental pregnancies may be interesting to perform.
Table 6 may be excluded and the text may just mention that FR was lower among couples providing semen quality.
Figure 1 a shows male serum DDE levels in the four countries and could just be added to a table. What were the levels of PCBs across countries? Figure 1 b shows FR across countries and is seen in table 5 and may therefore be omitted.

Discussion
The discussion adequately deals with the possible biases mentioned above but it is long and after reading it, the reader is confused and left with the question off the added value of combining these data.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests