Reviewer's report

Title: Socio-demographic determinants of coinfections by HIV, hepatitis B and hepatitis C viruses in central Italian prisoners

Version: 2 Date: 15 June 2007

Reviewer: Arijit Nandi

Reviewer's report:

General

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

None

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

Review of: Socio-demographic determinants of coinfections by HIV, hepatitis B and hepatitis C viruses in central Italian prisoners

This study evaluated the prevalence and correlates of HIV/HCV/HBV coinfections using retrospective data collected from three Italian prisons in the period 1995-2000. The study has several strengths; there are also minor areas for further improvement. I summarize both areas under General Comments according to the study rational, study design and analysis. This is followed by point-by-point Specific comments regarding the manuscript preparation. Most suggestions/comments I provide are fairly superficial (Discretionary revisions and minor essential revisions).

General comments

There have been few international reports on the prevalence and correlates of coinfection of HIV and hepatitis viruses among prisoners. This is an important area for research because, as the authors (among others) note, prisons may serve as a “reservoir for the amplification of the transmission of infectious diseases in the wider community” and should be considered an opportunity for intervention. Therefore, I believe there was a good rationale for conducting the study. With respect to study design, sample, and analysis, there are a few issues to consider. First, with respect to the study design and sample, most extant studies on HIV and hepatitis coinfection are limited by relatively small sample sizes that often preclude multivariable regression analyses and identification of the determinants of infection. This study utilizes a retrospective study design. Although one of the limitations of this design is, as the authors acknowledge, the potential for information bias, this limitation is likely outweighed by the larger sample size that was obtained from abstracting data from medical charts. Second, another potential issue relates to the use of data from a sample of the total prison population (i.e., only inmates for which HIV/HCV, HBV/HCV, HIV/HBV testing were simultaneously present) and whether the selection of this sample produced biased prevalence estimates. I believe that the authors acknowledge the potential for this bias and also provide a simple sensitivity analysis to show how selection may have influenced prevalence estimates. That said, these estimates could have been compared with those from other studies. Third, with respect to the analysis, the authors used a backward selection method. Although these methods have been widely criticized, the primary inferential goal of this analysis was to identify the multiple independent predictors of coinfection. As such, the method seems reasonable.

Specific comments

The primary area for improvement of the manuscript is in the writing and organization of the paper. I provide several point-by-point examples below:

? Throughout; “coinfection” vs. “co-infection”: Should try to be consistent.
? Results/Tables: Inconsistent throughout with number of significant digits. Should fix this.
Discussion: After the limitations on page 12, the flow of the discussion become somewhat convoluted. I would consider restructuring.

Page 5 (Data collection); “…so a retrospective collection was realized The medical charts”: Missing period between realized and The.

Page 6 (Statistical analysis); change “HIV/HB/HCV” to “HIV/HBV/HCV”.

Page 6 (Statistical analysis); may want to include a sentence on what the tine test is measuring, not all readers will be familiar with this.

Page 7 (Results); “for 682 prisoners (78.7%) it was the first episode, while the other 20 persons (21.3%) had at least one….”: the percentages seem incorrect (20/702=2.8%) in the text and in the table. Should double check these.

Page 8 (Results); methadone was also significantly associated with HIV/HCV coinfection. Should double check these.

Page 7 (Results); “for 682 prisoners (78.7%) it was the first episode, while the other 20 persons (21.3%) had at least one….”: the percentages seem incorrect (20/702=2.8%) in the text and in the table. Should double check these.

Page 8 (Results); In section on HBV/HCV coinfection, prevalence of coinfection should stated before discussing characteristics of coinfected.

Page 10 (Discussion); “gaols”: Should probably be consistent and just refer to jails.

Page 11 (Discussion); “HBV, HCV, and HIV sero-positivities in jails appears worrisome, even if paradoxically, HIV positive individuals find the opportunity to receive good treatment inside the prison environment”: Confusing, please rephrase.

Page 12 (Discussion); change “hypotesise” to “hypothesize”

In summary, I believe this study addresses an important research questions using an adequate design and analysis. However, the paper would certainly benefit from some more thorough editing and restructuring of the Discussion.

Best Wishes!

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

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.