Reviewer's report

Title: Hepatitis B and C: Prevalence and social factors associated with seropositivity among children in Karachi, Pakistan

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Reviewer: Maria Chironna

Reviewer's report:

General
The paper deals with the prevalence of HBV carriers and of anti-HCV seropositivity and associated risk factors in a wide population of children from Karachi, Pakistan. This is a useful area of inquiry for directing appropriate prevention activities.

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

There are several important problems with this paper that should be overcome.
This is a cross sectional study aimed at the evaluation of seroprevalence of HBsAg+ and of anti-HCV in children from Karachi and of risk factors associated with seropositivity. Nevertheless, the authors have not assessed the prevalence of HBV infection but only the prevalence of chronic carriers. Were risk factors evaluated through a case-control study? It is not clearly indicated in any part of the paper! Please add information on this aspect in the Methods. In addition, if the cases were represented by HBsAg positives, who were the controls? If, as it appears, the controls were the seronegative subjects, then it should be taken into account that the seronegativity for HBsAg is not indicative of susceptibility to HBV infection. Some children could have been infected by HBV and recovered. This could affect the strength of association between a HBV infection and the potential risk factors. Please clearly indicate in the Methods section (Design study) who were cases and who were controls. Are data available on the prevalence of anti-HBc, which is indicative of exposure to HBV, in this population?
When was the study carried out? There is no indication on this.
Figures 1, 2 and 3 report incidence rates. It is not a prospective study! Are you sure that are incidence rates and not prevalence rates?
The Methods section is divided in too many headings. They could be reduced, as an example, as follows: Study design and setting, Data collection and serology, Cases and controls, Data management and analysis and Ethical issues. Some parts of the Methods section (comprising Multivariate analysis) should be shortened.
It is not clear to me why therapeutic injections with the use of new needles and syringes represent a risk for hepatitis B and C infections? How do you explain the finding of your study? You have to suggest some hypotheses and give possible explanations in the Discussion.
Why did you not consider dental procedures as risk factors for hepatitis B and C infections? And the presence of HBsAg carriers and/or HCV chronically infected subjects among family members? And the death of a family member due to liver disease? And hospitalization? Did you find a positive correlation with the number of injections? I mean an increased OR with increasing number of injections?
Did you verify that none of the study was vaccinated against hepatitis B?
I suggest the analyses to be substantially revised and reconsidered on the basis of these considerations.
What is the vaccination policy against hepatitis B in Pakistan? Is vaccination against hepatitis B in newborns recommended? Should it be implemented? These are issues that should be more extensively discussed in the paper (the last sentence of the paper in the discussion section is not clear; should only the newborn from carrier mothers be vaccinated or all newborns?). Also education is and important issue but the need to proceed to information campaigns in the general population should be separately discussed.

Other issues:

Title should be changed given that the paper deals with chronic HBV infection in children. In addition, it is better to refer to risk factors instead of social factors.

The abstract should be revised to better convey the findings of the paper.

The Background section should be re-written. What are the levels of endemicity of HBV and HCV infections in Pakistan? It is a paper on the hepatitis B and C infections in children. One would be expected an update
of data regarding the epidemiology of HBV and HCV infection in Pakistan. There are several studies that could be cited. For example:

In general more studies should be cited both in the Background and in the Discussion sections. There are also several papers on the risk factors for HBV and HCV infections. Discuss your findings taking into account the results of other authors who have already identified risk factors for blood-borne hepatitis in Pakistan.

It should be useful to insert a table describing the characteristics of the population studied according to ethnicity, age groups, gender etc.

Figure 1 should be deleted. It is not necessary and it is not clear (is the prevalence rate referred to both HBsAg and anti-HCV positives?). Report these data only in the text. Are differences between males and females statistically significant?

Figure 2 and 3 could be deleted and replaced by a single table reporting the prevalence of HBsAg+ and of anti-HCV+ in the different age groups (chi-square for linear tend?) and according to gender.

In the tables 1 and 2 all variables considered should be listed and cases and controls clearly indicated.

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

Many spelling mistakes.

Some terms used should be replaced with the appropriate ones. Examples: Abstract, last sentence, general population instead of masses and risks instead of dangers. Background: change mutability (lane 5), propensity (lane 6), vulnerable (methods, lane 4) and so on.

Discretionary Revisions (which the author can choose to ignore)

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

Declaration of competing interests:

I declare that I have no competing interests