Reviewer's report

Title: Determinants of adherence to secondary prophylaxis of acute rheumatic fever recurrence on the island of Lifou (New Caledonia): a retrospective cohort study

Version: 1 Date: 16 October 2012

Reviewer: Andrew Steer

Reviewer's report:

Overall comments:

This study aims to address an important issue in the indigenous population of New Caledonia – what is the level of adherence to secondary prophylaxis for rheumatic heart disease (RHD), and what are the factors that influence adherence whether good or bad?

The authors look at this question through the lens of the WHO defined five dimensions of adherence. The study is based on a single island with a population of 8627 of whom 78 have RHD (all-ages prevalence 9 per 1000). The number of patients in the study does not make it possible for the authors to determine if poor adherence is associated with an increased risk of recurrence of acute rheumatic fever (ARF) or of worsening RHD (or at least it did not appear that the authors collected these data).

The study divides the patients into two groups: those that are “adherent” based upon a level of adherence over 1 year of 80% or above, and those that are non-adherent. The authors then compare 30 factors between the 2 groups to assess what factors are associated with poor adherence. The data for these factors are collected by way of a questionnaire and by checking the medical record.

In the multivariate model there are only three factors that are associated with good adherence: 1) households with 6 or more people, 2) a prior history of ARF, and 3) having full medical coverage.

The strength of the paper lies in the captive nature of the population and that nearly all patients on prophylaxis on Lifou are included in the study. In addition, these data are novel and research into adherence for RHD prophylaxis is lacking in the literature.

Major compulsory revisions:

1) There are major issues in this paper with English language. I don’t believe that this issue should influence the editorial decision, but if accepted for publication the manuscript will have to be edited heavily with this in mind.

2) The conclusions of the study are a series of recommendations for improving adherence. I am not sure that all of the recommendations follow on from the
results of the actual study – for example recommendation 1 is to establish an active recall system while the data in this study do not necessarily support that, and recommendation 2 is to raise the awareness of ARF despite the fact that it appeared that the knowledge of treatment objectives for secondary prophylaxis was very high in both groups. While it is not completely unreasonable to propose some recommendations, it would also be appropriate to propose further research to better answer the question as to what makes some patients adhere to their injection and others not so. This might include: expanding the sample size, or embarking upon a qualitative study to define new hypotheses to be tested, or developing an intervention that could be tested in a randomized fashion.

Minor essential revisions

1) The authors state that the questionnaire was “standardized”. How was this done? Did the questionnaire go through a pilot phase? Did the authors use any published data to decide upon the choice of variables in the questionnaire?

2) The first 2 sentences of the Discussion should be in the results section. It seemed to me that adherence was not normally distributed and that the data would be better expressed as median and IQR. Indeed a presentation of adherence in the whole sample in a graphical representation would be helpful to get a better idea of the spread of adherence.

3) The Discussion is too long

4) There is very limited discussion of the limitations of the study – this needs to be expanded.

Discretionary revisions:

1) It would be helpful to include the prevalence figure calculated above to indicate the high burden of disease in this community– that is, an all ages prevalence of RHD of 9 per 1000 s VERY high.

2) Did the authors consider comparing those with very good adherence to those with very poor adherence?

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.