Reviewer's report

Title: Endemic cryptosporidiosis and exposure to municipal tap water in persons with acquired immunodeficiency syndrome (AIDS): A case-control study

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Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Accept after discretionary revisions

In this manuscript, Aragon and co-workers present the results of a case-control study of risk factors for Cryptosporidium infection in persons with AIDS. The results indicate that consumption of tap water is a risk factor for persons with AIDS and that drinking bottled water was protective. These findings are extremely important from the public health perspective and should lead to stronger recommendations on water consumption for immunocompromised persons. The manuscript is clearly and carefully written and I have only a few comments.

1. The Materials and Methods state that the San Francisco water system distributes filtered and unfiltered water and well as a mixture of the two. Does this vary geographically or temporally or both? It would be useful to include a fuller description of the distribution pattern in the text, particularly in light of the observation that this did not seem to influence disease risk. If the distribution patterns are fixed, why wouldn't filtration (which may lead to log10 reductions in oocyst loads) reduce risk?

2. It would useful to know more about the CD4 count at the time of diagnosis. This information could be added to the text in a sentence or two.

3. From the discussion and their presentation of their data, it is clear that the authors are very aware of potential limitations in the interpretation of their data. For example, Cryptosporidium infection may be acquired months before disease become manifest; nonetheless, I agree that water consumption patterns in the 4 week period before diagnosis are likely to reflect water consumption patterns at the time of infection. On the other hand, I'm not sure I agree with the statement that "prior sexual practices are unlikely to be associated with current water consumption patterns." Persons practicing risk avoidance behaviors with respect to water consumption (e.g. drinking bottled water) may have been more likely to practice safe sexual behaviors in the recent past. Were respondents questioned about specific sexual practices (e.g. anal-oral sex)? If so, and there was no relationship to risk of cryptosporidiosis, a statement to this effect should be added to the text. If not, I think this statement should be softened.

4. The authors suggest that recall bias is not likely to explain their results, since respondents would have been likely to differentially recall sexual and fecal exposures. Given the emphasis on drinking
water in the AIDS community, is it possible that respondents were aware of the hypothesis and answered questions based on this bias?

Minor editorial points:

1. The background mentions that "conventional" water filters do not remove oocysts. It would be better to use a more specific term.

2. The Materials and Methods should include a comment about IRB review and approval of the study.

3. Why were 5 patients ineligible for the study?

**Competing interests:**

None declared.