Reviewer’s report

Title: Giardiasis in children living in post-earthquake camps from Armenia (Colombia)

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Reviewer: Mrs Judy Greig

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Unable to decide on acceptance or rejection until the authors have responded to the compulsory revisions

The title: The title is brief, appropriate and indicative of the material contained in the paper.

Abstract: The abstract is concise and adequately describes the study.

I. (discretionary revisions) Object or hypothesis

a) The objective of the study was stated in the abstract. Perhaps shorten the "background" and expand the second paragraph on page 4 to form an introduction, restating the objective of the study.

b) The authors appear to want to infer results of the study to those in the earthquake area in Colombia and perhaps to other populations in similar situations. A study of children may not be the most representative sample for this population and for the characteristics of this organism. Giardiasis is very common among children in developing countries as well as children in developed countries in day-care situations.

II. (compulsory revisions) Design of the investigation

a) The study was a planned experiment with sample and survey collection.

b) Sample selection:
   - states 217 households and therefore 217 children were sampled (p4)
   - samples with water or urine were discarded (p5). States that the samples were collected the day after questionnaire completed. How many stool samples were actually examined and were only those questionnaires used in the study?
- Did the children attend school? If so what was their water source there?
- Stools were only collected once per child? Two or three specimens per person should be collected on different days for analysis. Need to include statement re intermittent shedding of Giardia.
- Any studies done for other parasites and bacterial infections on the stools? What about co-infections?
- In the questionnaire, was it noted if animals were in the living quarters or if the children had frequent contact with animals?
- Were animals drinking from the common municipal water before it went to homes?
- Need more detail on municipal water. Was it treated or not and if so how? Was it quantitatively tested for Giardia before and after the earthquake?
- How was individual water treated? Describe the tanks.

c) Nature of standard of comparison:
- Studies cited in 1965 and 1980 give a low prevalence. What was the population studied?
  Was there a statement re the rate for children? Really need prevalence studies to show that these findings are different from the normal state. Was the method the same or did it have a different sensitivity and specificity?

III. (compulsory revisions) Observations:
- The word "giardiasis" does not need a capital.

b) Clear definitions of the terms used:
- What is meant by "community services rooms" and "individual sanitary services?"
- What are "municipal ducts?" Are they trenches or closed water delivery systems?

b) Method of classification or measurement; possible biases and provisions to deal with them:
- Sensitivity and specificity of test need to be included. "The sensitivity of routine examination of a single stool specimen for cysts is approximately 50-70%, so two or three specimens collected on different days should be analysed (Heymans, H.S.A. et al. 1987. Giardiasis in childhood: an unnecessarily expensive diagnosis. Eur. J. Pediatr. 146:401-403.
- Any estimate of rate of asymptomatic infection?
- Were specific symptoms recorded? Would be interesting to see the breakdown (perhaps a table).
- Need definitions, as applied by the interviewer, for the symptoms (i.e. flu symptoms).
- Who did the interviews and measurements on the children?

c) The observations are reproducible. Need more information to determine if reliable.

IV (compulsory revisions) Presentation of findings:
a) Findings need to be presented more clearly:
- See little reason to include lipid drops, leukocytes, yeasts and mucus in table 3. These are normal, expected findings during giardiasis. Vitamin B12, lactose, fat and protein absorption is decreased (R.D. Adam. The biology of Giardia spp. Microbiology Reviews, Dec. 1991, p. 706-732). Attachment of the trophozoites to the brush boarders of the mucosa would stimulate production of mucus and leukocytes in the stool.
- Table 4 showing weight and years of school is irrelevant. Weight would be important if children were chronically ill and there were several measurements made on the individuals or comparisons with other children not chronically infected. What is the relationship with years of school? Mean age is what we would expect given the age range of the children.
b) Are findings internally consistent?
- Table 1 states a %. A percentage of what population?
- Tables 2 & 3 just show OR. Need to see tables with data to judge quality of statistical evaluation.

V. (compulsory revisions) Analysis:
- Need to see more of the data to determine if the stats are valid.
- Where was the Mantel-Haenszel type estimator used?

VI. (discretionary revisions) Conclusions:
- Very brief.
- Is giardiasis an emerging infection or one that we might expect when water quality is poor and living conditions are crowded? In "Emerging Infections: Microbial Threats to Health in the United States," published by the Institute of Medicine (IOM) in 1992, emerging infections are defined as new, reemerging, or drug-resistant infections whose occurrence in humans has increased within the past two decades, or whose incidence will likely increase in the near future.
- Need to suggest steps to prevent occurrence in similar situations.
- Need to state conclusions relevant to purpose of the study.
- Any further follow up studies to see if any long term effects?

VII. (discretionary revisions) Suggestions:
- Background could be more concise.
- What were the conditions re sewage handling?

VIII. (compulsory revisions) Is the writing acceptable? (nb. If you tell us that the writing is not acceptable for publication, we will ask the authors to find someone, or an editing service, to help them rewrite it.) Not acceptable for publication.

**Competing interests:**

None declared.