Author's response to reviews

Title: Toxoplasma seroprevalence in a rural population in France: detection of a household effect

Authors:

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Author's response to reviews:

Answers to Reviewer 1 comments
(Cosme Alvarado-Esquivel)

Major Compulsory Revisions

Authors stress the higher prevalence of infection in men than in women. This interpretation is mistaken. The statistical analysis showed that there is not any significant difference among these groups. Therefore, this information should be deleted from the Abstract and the Discussion section.

We agree that neither the effect of sex nor the effect of raw vegetable consumption reached statistical significance. In the new version of the manuscript, we have made all the necessary changes to clearly distinguish significant from non-significant results. However, we still mention the effects of these two factors because they were close to statistical significance (lower limits of the credibility intervals equal to 0.92 and 0.93, respectively) and are in favour of an important increase of the probability of seropositivity in men versus women and in subjects eating raw vegetables at least once a week versus subjects eating raw vegetables less often.

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We have changed the formulation of the results in the Abstract and in the text (Results and Discussion) to highlight the fact that the effects of these two factors did not reach statistical significance but were close to statistical significance.

We have restructured the Discussion to clearly separate the various potential sources of contamination and we have developed the discussion about the factors that measure contact with cats, adding references against an effect of direct contact with cats.

Minor Essential Revisions

Authors should correct the closing square brackets in Table 1 and legend of Figure 1.

The direction of the closing square brackets indicates that the upper limit of the
age class is not included. For example, the age class [20-30] included subjects whose age is 20 years or more but strictly inferior to 30 years.

In the Results section, the word “Table” should be written with a capital T letter instead of “table”.

All occurrences of "Table" throughout the text are now capitalized.

Answers to Reviewer 2 comments
(Chia-Kwung Fan)

Major Compulsory Revisions

This paper although provides interesting information regarding a supposed factor for acquisition of T. gondii infection among people, some issues still are required to be elucidated more clearly before its acceptable publication in this journal.

1. From the results the authors indicated, it seems that age was a significant factor contributing to this parasite infection, the others were not (significant) although some had high odds ratios; most values of the 95% CI were between 0.7 and 72.1 which did not reach statistical significance. Interestingly, eating raw vegetables seemed a possible risk factor in this population; this factor should be further investigated. Clearly, to answer the question, they can isolate oocysts from the vegetables or detect whether T. gondii DNA exists in sampled vegetables.

In the present study, the analysis was focused on the links between the answers to a detailed questionnaire and the serological status.

We agree that the factor “eating raw vegetables” should be further investigated. Establishing the link between contamination of raw vegetables and soil contamination will involve isolation of T. gondii oocysts from the soil and from locally available raw vegetables. However, these investigations are outside the field of our study and require specific protocol, budget, laboratory equipment, and analytical methods.

The idea was added to the Discussion, paragraph 4. We have also cited an article showing that high concentrations of oocysts can be detected in soil samples using real-time PCR.

2. Since most factors analyzed were insignificant, to my curiosity, (what) if you merely analyze the questionnaire and serological data from households with >= 2 members? What would happen or you just analyze the questionnaire from the seropositive persons? Would any striking finding appear?

Analysing the data from households with >= 2 members would lead to select a particular population and will decrease the sample size; thus, the power of the study. However, to answer that question, we carried out the analysis and found similar effects but with larger credibility intervals.

Analysing only seropositive persons does not seem appropriate. The absence of
a control group with negative serology does not allow to measure the effect of potential risk factors.

Answers to Reviewer 3 comments
(Jaroslav Flegr)

Reviewer 3 was satisfied with the revised version. We have paid all attention to write in italics all "Toxoplasma gondii" occurrences throughout the manuscript.