Reviewer's report

Title: Seroepidemiology of Toxoplasma gondii infection in women of child-bearing age in Central Ethiopia

Version: 5 Date: 5 July 2012

Reviewer: Titia Kortbeek

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Major Compulsory Revisions
Please explain why the ELISA IgG and IgM from Demeditec Diagnostics was chosen. And was this method compared to the method used by the National Health and Nutrition Research Center (ref 19)?

As there were many IgM positive women detected, of which 8 % were only IgM positive it should be considered that this test is too sensitive and/or not specific. Were the IgG negative and IgM positive cases confirmed with another method? If not, how can one be sure this is true positivity?

Please add references about the performance of this method.

The conclusion of the authors:p.12 "26.8% of the women had detectable IgM antibodies during pregnancy with potentially high risk of congenital toxoplasmosis warranting attention to design preventive measures." is based on this IgM positivity and is probably too strong. On the same page is also the phrase: IgM antibodies can"persist for a long time with no risk of congenital infections."

It is very unlikely that in a community with such very high seropositivity ( >90% in Debre-Zeit and 90% in Metehara) 15-35 (!) % of the women will have true IgM antibodies.

The same applies for p.14:p.14

...our findings indicated that a considerable number of pregnant women had recent infections (26.8%, 57/213 IgM positives). The high recent infection rate in pregnant women is alarming and emphasizes the need of developing antenatal care programs for toxoplasmosis in Ethiopia.

"The Toxoplasma IgG positive and IgM negative results (69.4%, 295/425) suggest past exposure to the parasite or old infection, while positive results for IgM (20.5%, 87/425) are indicators of acute or recent exposures."

It is now well known that IgM can stay positive for a very long time, depending on the method used. Please indicate how long this method will be positive compared to other methods. How many IgM positive cases had high responsiveness - or were most around the cutoff level?

Minor Essential Revisions
Page 5: Information on climate temperature and rainfall and altitude: please be consistent: use mean annual rainfall, altitude and average monthly minimum and maximum temperature for all or use mean annual rainfall, altitude and average temperature for all or put this information in a table.

Add a map – so the information on longitude and latitude is not needed.

In the discussion there is no comment using this information thus it can be formulated shorter- with the exception of the arid area.

Page 6: A total of 425 women sera (212 non-pregnant and 213 pregnant) was collected.

A total of 425 sera form 212 non-pregnant and 213 pregnant women was collected.

p.13
The seroepidemiological studies conducted in sheep (45.3%) and goats (40.2%) of these same areas were consistent with seroprevalence results in women of Adea district.

please explain what you mean: Adea district is Debre-Zeit? and is it higher or lower than expected and why?

Although we did not perform CD4+ lymphocyte count of HIV positive pregnant women, there is a chance of reactivation of latent infection with a possibility of congenital transmission. Thus, a prophylactic treatment to prevent maternal reactivation and vertical transmission of toxoplasmosis may be useful [37].

The reference is from 1995; has this not changed with HAART therapy. Is prophylactic treatment not replaced by HAART?

please add the information about the consumption of meat: it is now only in brackets and it deserves more attention

p.15 (as consumption of raw meat for this age group is uncommon).

(46% of pregnant women and 41.6% of all studied women consume raw / undercooked meat.

?is meat not propagated as being healthy for pregnant women in Ethiopia? What kind of raw meat is consumed and is it the same in different regions?

Is there a reason why so many women have cats ? table 4:Cat at home: 258/425 = 60 %

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests