Reviewers report

Title: Immune markers characteristic for asymptomatically infected and diseased Entamoeba histolytica individuals and their relation to sex

Version: 2
Date: 15 July 2014
Reviewer: William Petri

Reviewers report:

The authors are to be congratulated for making a substantial advance in our understanding of the difference in immunological markers between Entamoeba histolytica asymptomatic intestinal carriers (AC) and amebic liver abscess (ALA) patients. They have found that Entamoeba histolytica-specific IgG and IgG2 is higher in ALA than AC patients. ALA patients also had higher IL-4, IL-6 and IL-10, and male patients with AC had higher levels of CCL2, which is potentially of interest for its role in recruiting tissue-damaging inflammatory monocytes to the liver in a murine model system. The findings of this study of immunological marker differences between ALA and AC should help to identify the host immune mechanisms responsible for the development or control of symptomatic ALA disease.

Critiques:

1) The last sentence of the abstract overstates the conclusions, and should be modified.

2) In this study an important limitation is the lack of amebic colitis patients. It is therefore not possible to know the degree to which the differences seen are due to intestinal vs. extra-intestinal disease or due to invasive vs. non-invasive infection.

3) Line 49-50: Total IgG and IgG2 are higher in ALA, however the level of these antibodies in symptomatic diarrheal disease is not known, therefore it is not clear if these are markers specifically for ALA or for symptomatic Entamoeba histolytica infection.

4) Female AC had higher total IgG and IgG1 than male AC, while male AC had higher CCL2 levels. They concluded that these observations could indicate the mechanism behind male susceptibility to ALA. Since we do not know the level of these markers in symptomatic diarrheal disease, it is not clear that these marker are responsible for sex dependent ALA.

5) In figure 5, there is no data presented for E. dispar, but it’s mentioned in the figure legends.

6) The antibody levels showed in figure 1, figure 3 and figure 5 are expressed as titers, however in figure-2 antibody levels showed as OD.
7) Line 71: ALA occurs mainly in men, but they did not find any gender related difference of antibody level or cytokine level in ALA patient, while they did find a difference in asymptomatic carriers of different genders. The authors should address why gender differences would not exist in both infection states.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

none