Reviewer's report

Title: Modulation of macrophage cytokine profiles during solid tumor progression: susceptibility to Candida albicans infection

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Reviewer: Jos W.M. van der Meer

Reviewer's report:

The authors have investigated the effect of tumour growth on the course of candidal infection. They describe changes in cytokine profiles.

Although the research question is well defined, it should be realised that neoplastic disease per se clinically does not predispose to systemic fungal infection, rather does the use of chemotherapeutic agents, glucocorticosteroid treatment and indwelling catheters with parenteral nutrition.

Major compulsory revision with regard to the following series of weaknesses of the paper:

1. The investigations only show associations and no mechanisms. There are no experiments to explain the changes in cytokine patterns; neither is clear whether these changes have consequences for host defence against Candida albicans.

2. As is clear from table 1, the experiments were performed with groups of 4 mice. There is no mention of numbers of mice for the other experiments. I am worried that the results presented, represent only one big experiment. Given the inherent variation in this kind of experiments, this would not be acceptable. To establish whether the changes in Candida outgrowth over time (and the cytokine patterns) as presented are solid and reproducible, one would need triplicate experiments.

3. To try and explain the reasons for outgrowth of Candida, I would like to see data on influx of granulocytes (the key players in these acute candidal infections) and monocyte/exsudate macrophages. In addition, phagocyte function would be an important parameter.

4. The discussion is much too long and speculative.

Minor essential revisions

1. The table and the figures should be more self explanatory. It took me quite a while to understand what was presented. The legends are hard to digest, and the abbreviations are not very helpful.

2. The language needs correction

Discretionary revisions

1. As has been demonstrated in the literature, IL-18 is a key inducer of IFN gamma in candidiasis (see Netea’s work). This cytokine might also be more important than IL-12 in the experimental setting.
Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests