Author’s response to reviews

Title: Cerebrospinal fluid pleocytosis level as a diagnostic predictor? A cross-sectional study.

Authors:

Anne Marie Ahrens (Anne.Marie.Ahrens2@rsyd.dk)
Thomas Sydenham (Thomas.Sydenham@dadlnet.dk)
Mads Nybo (Mads.Nybo@rsyd.dk)
Aase Bengaard Andersen (Aase.Bengaard.Andersen@regionh.dk)

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Author’s response to reviews:

To the editor, BMC Pathology

Re: Manuscript # CPAT-D-16-00026R1

Cerebrospinal fluid pleocytosis level as a diagnostic predictor? A cross-sectional study. By

Anne Ahrens Østergaard; Thomas Vognbjerg Sydenham; Mads Nybo, and Aase Bengaard Andersen

Dear Sir,

Thank you very much for the useful comments. We have addressed all comments and revised the manuscript as stated below. We hope our improved manuscript will be worth considering for publication. We have written our point-by-point replies following each point:

Reviewer 1: no comments

Reviewer 2: This paper has the potential to be really useful. It offers a wealth of information about pleocytosis changes in non-infectious entities (e.g. stroke, headache, malignancy). It could offer insights into LP parameters in CNS infection but they lump a number of entities into CNS infection, and like Reviewer #1- I don't think "suspicion for CNS infection" or antibiotic treatment for CNS infection without a verified diagnosis are legitimate reasons to now define a patient as "CNS infection". Which is why I suggested using definite, probably, and possible to
categorize the CNS infections (see prior review). Unfortunately, the authors refuse to address this criticism made by both reviewers. I recognize this will lower your numbers in each group, but splitting up the groups in these ways would actually be the most efficacious way to actually help people who see patients. You could simply include another table or appendix that looks like table 2 (or table 3) but simply now splits up your "CNS infections" into definite, probable, and possible (which would include criteria 4 & 5). Ideally, you should also include the CSF glucose and protein in this table.

We have followed this suggestion and re-organised table III with subdivision of the CNS infection category into “verified” and “probable” cases and CSF glucose ratio and protein has been included as suggested.

One other issue, I had raised was the "Cancer foci, elsewhere" with a mean for 500 cells, which is accounted for neutropenic fever. I believe this patient is now listed as "agranulocytosis secondary to cancer chemotherapy." As neutropenic fever is generally presumed to be secondary to an infection somewhere, and patients have antimicrobial agents dumped on them, I would argue that this patient should be in the category of "infection outside CNS" (though I would highly argue that a CSF pleocytosis of ~2000 cells/ul likely meant this patient had a CNS infection, but the physicians didn't get an organism.)

We agree it is likely that this patient suffered from CNS infection or infection outside CNS. However, we reviewed the patient file and the criteria for changing the diagnosis as mentioned under method was not met. Therefore we do not think that it is reasonable to change category of this outlier, but we have made a comment on this in the discussion part.

Sincerely,

Anne Ahrens Østergaard; Thomas Vognbjerg Sydenham; Mads Nybo, and Åse Bengård Andersen