Reviewer’s report

Title: The clinical characteristics and therapeutic outcomes of cryptococcal meningitis in elderly patients: a hospital-based study

Version: 0 Date: 04 Feb 2019

Reviewer: Josef G Heckmann

Reviewer’s report:

The authors present a retrospective observational study on the clinical characteristics and therapeutic outcomes of cryptococcal meningitis (CM) in elderly patients in a one center hospital in Taiwan. They identified ninety-nine patients with CM during a 15-year period (2002-2016), of whom 38 were elderly (65 years). Beside diabetes mellitus, adrenal insufficiency, malignancy, hematologic disorders, chronic obstructive pulmonary disease, autoimmune diseases, liver cirrhosis and acquired immunodeficiency syndrome were found as underlying disease. As marked clinical signs altered consciousness, fever, and headache predominated. Positive cerebrospinal fluid and blood cultures for Cryptococcus (C.) neoformans were found in 26 and 9 patients,

By comparing the two groups (elderly versus non-elderly) the authors found significant differences in gender, altered consciousness and recent cerebral infarction. In addition the elderly group had a high mortality rate (36.8%) and proofed cryptococcemia was the most significant prognostic factor.

The authors conclude that elderly patients (65 years) are more vulnerable to CM. In this group a female predominance, higher rates of altered consciousness and recent cerebral infarction were identified. Cryptococcemia was found to be a significant prognostic factor.

The retrospective observational study is well performed. The manuscript is well written. The findings are for the general geriatrist interesting and - taken all together - plausible.

Minor concern:

In the discussion part, the aspect of a foreseeable bias between the "non-elderly" and "the elderly" should be more discussed. What is the factor which causes the finding, the age itself or other factors?

What is the significance of indian ink and cryptococcalAg titer (≥1:1024). This should be described more in detail.

Regarding the neuroradiological findings a typical MRI would be interesting.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**

If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?
If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

'I declare that I have no competing interests'

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal