Reviewer’s report

Title: Serum (1-3)-β-D-Glucan and Galactomannan Levels in Patients with Cystic Fibrosis: a Retrospective Cohort Study

Version: 0 Date: 15 Jan 2018

Reviewer: Jean-Philippe Bouchara

Reviewer’s report:

Discrimination between colonization and infection is still a matter of debate in CF patients with Aspergillus fumigatus-positive cultures from sputum samples. In this paper, the authors report the results from a retrospective study conducted on a large number of CF patients and including the determination of serum beta-D-glucan and galactomannan levels searching for a correlation with lung function decline and mycological findings by cultivation of a sputum sample collected at time of serum sampling. This paper is well written and clear and concise. The results are novel since a unique study has been published as yet on beta-D-glucans in sera from CF patients. Here the authors show that the serum beta-D-glucan level is a better predictor of a FEV1 decline compared to the galactomannan level and to results from mycological examination.

I have only very minor comments regarding this paper:

- Taxonomy of Pseudallescheria / Scedosporium species:

Since the Amsterdam declaration of nomenclature in fungi in 2010, it was decided to stop the dual nomenclature anamorph (asexual state) / teleomorph (sexual state). Members of the ECMM/ISHAM working group on Pseudallescheria / Scedosporium infections published a joint paper in 2014 (Lackner et al. Fungal bIology), in which it was decided that the genus name Pseudallescheria should no longer been used, and also it was showed that Scedosporium prolificans should be called Lomentospora prolificans since it is phylogenetically distinct from the other Scedosporium species, justifying it was reassigned to another genus.

In addition, on the basis of microscopic examination of a lactophenol cotton blue wet mount preparation, it is not possible to differentiate the distinct Scedosporium species (this requires MALDI-TOF/MS analysis of the isolates, or better sequencing the gene encoding beta-tubulin). So please change Pseudallescheria boydii for Scedosporium species on line 69 and for Scedosporium sp. on line 220, and Scedosporium prolificans for Lomentospora prolificans on line 220.

- Microbiological analyses.

Please indicate if cultures were performed on agar slants or on agar plates.
Also, it was shown that Scedosporium species are usually associated with the more rapidly and extensively growing fungus Aspergillus fumigatus and that without the use of a Scedosporium-selective culture medium, the presence of Scedosporium species in sputum samples may be masked by the aspergilli. The use of a selective culture medium greatly facilitates the detection of Scedosporium species form respiratory secretions in CF (see Cimon et al., Horre et al., Blyth et al., Sedlcek et al.). This should be cited in the limitations of the study since Scedosporium species also have beta-D-glucan in the cell wall. For the same reason, please delete "associated with A. fumigatus" in the last sentence of the abstract.


- Relationship between Aspergillus colonization and decreased lung function (lines 72-75):

Fillaux et al. (2012) also demonstrated a correlation between persistent carriage of Aspergillus fumigatus and a decreased lung function.


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.

Yes

**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 recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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