Reviewer's report

Title: Aspergillus-PCR in bronchoalveolar lavage for detection of invasive pulmonary aspergillosis in immunocompromised patients

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Reviewer: Frank Reichenberger

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Review

“Aspergillus-PCR in bronchoalveolar lavage for detection of invasive pulmonary aspergillosis in immunocompromised patients” by M. Buess et al.

Comments

Thank you for the opportunity to review the paper.

The authors present the results of a large monocentric study on the clinical use of Aspergillus PCR in the BAL for diagnosis of invasive Aspergillus infection. They included patients with different types of immunosuppression who present with respiratory symptoms and different clinical certainty of invasive fungal infection.

General

The diagnosis of invasive fungal infections is a persistent challenge and an issue of current debate in the care of patients with immunosuppression and infectious complications / respiratory symptoms.

This well written manuscript is focussed on an interesting and up to date topic, especially for pneumologists / bronchoscopists as well as specialists for infectious diseases /microbiology, haematological malignancies and transplant medicine etc.

Therefore the paper provides useful clinical information with impact on the diagnostic strategy in these patients. Furthermore it presents real life data as many of these patients are already on antifungal therapy.

Major comments

The authors mention technical problems with the PCR procedure. This is a major issue that might jeopardize the whole data collection. Therefore these technical problems should be further addressed and potentially affected samples removed from the analysis.

The risk of invasive fungal infection is depending on the type and severity of immunosuppression. The authors might provide information about the type of immunosuppression, e.g. steroids, solid organ transplantation, stem cell
transplantation, neutropenia) and the incidence of IFD and results of aspergillus PCR resp.

There is a high rate of false positive and false negative aspergillus PCR. What were the final diagnoses in the cases with an incorrect PCR result? Was there any association between PCR results and non aspergillus lung disease?

Did you perform a follow up on patients with a positive Aspergillus PCR result without signs of invasive Aspergillus infection? How many of them developed Aspergillus infection in the follow up?

The authors discuss the vascular spread of invasive aspergillosis. Did you use Aspergillus PCR also in blood samples?

How many of the patients received a histological confirmation of the diagnosis e.g. by transbronchial biopsy or open lung biopsy / resection and what was the clinical criteria to perform histological examinations?

Minor comments

Parts of the introduction belong to discussion.

It should be noted that the study was performed at one center = monocentric study

Why the authors did mentioned the diagnostic criteria for BOS, DAH, but also NSIP and

Please cite the literature on the consensus of IFD (page 9).

Several typing errors are noted.

**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:**

I declare that I have no competing interests.