Reviewer's report

Title: Invasive fungal infection among hematopoietic stem cell transplantation patients with mechanical ventilation in the intensive care unit

Version: 2 Date: 25 September 2011

Reviewer: NIKOLAOS MARKOU

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General comment: it would be very interesting to have data on IFI for all HSCT patients admitted to the ICU regardless of mechanical ventilation. The conclusion of the study is simply that HSCT patients who are mechanically ventilated have a uniformly dismal prognosis, regardless of the presence or absence of IFI. What is the impact of IFI in ICU patients who are not in need of mechanical ventilation? Major compulsory revision.

Abstract - results section: instead of ‘longer duration of ICU admission’ I suggest ‘late ICU admission’. Minor essential revision

Abstract - Conclusion: ‘Early intervention ... therapeutic direction’. This is more a wishful thought than a conclusion firmly based in data presented in the paper. I would suggest deleting it. Minor essential revision

Introduction

3rd Paragraph: the statement that ‘more than 60% of HSCT recipients require mechanical ventilation ... very poor prognosis’ should be re-examined. Possibly the authors refer only to patients admitted to the ICU? Minor essential revision

3rd paragraph: I would suggest updating the references on the impact of mechanical ventilation in HSCT patients. Minor essential revision

In the 1st paragraph the authors start discussing about critical illness in HSCT patients. They return to the same subject in paragraph 3. I believe that paragraph 2 (on IFI in HSCT patients) should follow paragraph 3. Minor essential revision

Patient information and data collection

1st paragraph: Data about number of patients enrolled in the study, should be removed in the results section. Minor essential revision

3rd paragraph: recorded the diagnostic criteria (?). perhaps clinical characteristics? Minor essential revision

Definitions

Paragraph 2: Clarify ‘Acute GVHD... occuring before day 100’. Minor essential revision

Results
Paragraph 1: Replicates data already presented in table 1. Minor essential revision

Some of the data in paragraph 2, such as the non-significant difference in CMV infection or neutropenia, may also be omitted (they are included in table 2). Also data on ORs from multiple logistic regression (they are also presented in table 3). Minor essential revision

Paragraph 2: instead of ‘duration of ICU admission’, late ICU admission. The same correction should be applied in the abstract, discussion section and in table 3. Also rephrase ‘Table 3 reveals ... corticosteroid use’ Minor essential revision

Paragraph 5: ‘Aspergillus was the most infection fungal’? Rephrase. Minor essential revision

Table 2
Duration to ICU after HSCT: the authors probably refer to early vs late ICU admission and not ‘duration’ Minor essential revision

Table 2 can be made more concise. Simply state the presence of factors such as GVHD, CMV infection, mortality (or survival) etc and not both presence and absence of these entities. Minor essential revision

Tables 4 and 5 are probably redundant.

Discussion
The major finding of the study is high prevalence of IFI in mechanically ventilated HSCT patients, whereas the dismal prognosis of mechanicaly ventilated HSCT patients has long been known. Given the already very high mortality in this subgroup, presence of IFI does not seem to affect outcome. It would be interesting to have data on the prevalence and influence on outcome of IFI in non-ventilated critically ill patients. Major compulsory revision

7th paragraph: in fact the finding of the paper is not that prognosis of IFI in HSCT patients is poor, but that IFI has no further impact on the already dismal prognosis of mechanically ventilated HSCT patients. The rest of the paragraph (discussion Candida score, Candida infection as predictor in the general ICU patients), is irrelevant. Minor essential revision

Discussion should be more concise. Major compulsory revision

Level of interest: An article of importance in its field

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

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.