Reviewer's report

Title: Clinical characteristics of Pneumocystis pneumonia in non-HIV patients and prognostic factors including microbiological genotypes

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Reviewer: Sebastiaan van Hal

Reviewer's report:

The authors examine the Clinical characteristics of PCP in non-HIV patients and prognostic factors including microbiological genotypes. This article is of interest as it represents one of the larger non-HIV PCP series examining genotypes. The authors focus on risk factors and clinical presentations which have all been well documented previously rather than those components which provide new insights (i.e. B-D glucan monitoring and genotypes).

Major compulsory revisions:

Background:
1) the authors state that microscopy is the standard method for PCP detection. However, this is not the case with greater reliance on PCR testing due to problems with sensitivity. A discussion of PCR especially issues surrounding colonisation vs. infection would be more appropriate in the introduction and strengthen the authors’ case selection criteria. Alternatively, authors need to differentiate between silver staining and DFA testing.

Methods:
2) Case finding occurred by way of PCR positivity; radiological changes & presumptive treatment - thus figure 1 is inconsistent with the methods. It is unclear why only patients with “presumptive therapy” are included as opposed to all patients receiving treatment (i.e. those starting treatment after the PCR result result).

3) When mixed genotypes were suspected – criteria for these need to explained as they may represent in vitro recombinant events see Beser et al JCM 2007; 45: 881-886.

Results:
4) It is unclear whether the 5 (probable hematology) patients developed IFI during, after or before PCP diagnosis. As the B-D glucan is probably used as the diagnostic criteria – these patients should be excluded from the B-D glucan analysis. In addition, as the radiology changes may overlap between IFI and PCP this distinction is important and needs to be explained in the manuscript.

5) Table 5 can be omitted

6) The discussion is difficult to follow at times and needs to be revised (e.g. page 9; line 18-20; 23-24; page 10 line 11; line 22)
7) Treatment of choice remains TMP-SMX despite the presence of DHPS mutants – see Navin et al Lancet 2000; 358;545-549 and thus comments on page 11 line 19-20 are misleading. In addition, as “resistance” was detected in only 1 in 53 this section in the discussion could be omitted.

Minor Essential Revisions:
1) DHPS gene is not used as a typing system as suggested in paragraph 3 page 4.
2) Serum B-D-glucan should not appear in the data collection section (page 5).
3) "Cutoff" is used multiple times throughout the manuscript. However, this has been confusing as meanings have differed (i.e. upper limit of normal and limit of detection or reporting threshold) – standard terms should be employed and standardised throughout.
4) Table 4: DHPS could be omitted. ITS genotypes should be shown as patients with single vs. mixed infections.
5) Discussion: "IFA and PCP have common risk factors" – this assertion requires a reference. However, as PCP may reflect reactivation this may not be the case.
6) Risk factors for PCP are well described with the current data confirming these previous risk factors and thus this section could be substantially shortened
7) Suggest that the utility of B-D-glucan monitoring is discussed further
8) Genotypes should be discussed further.

Level of interest: An article whose findings are important to those with closely related research interests

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