Reviewer's report

Title: Selection of Two Emerging Pathogens, Brevundimonas diminuta and Ochrobactrum anthropi, in a Cystic Fibrosis Patient Treated with Colistin: a Case Report

Version: 4 Date: 25 May 2008

Reviewer: Gilbert Greub

I am familiar with the literature and believe that this case meets one of the 9 criteria for evaluation in the journal: Findings that shed new light on the possible pathogenesis of a disease or an adverse effect

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

The paper by Menuet et al reports a case of lower respiratory tract infection in cystic fibrosis patients, which was likely due to two bacteria unusually documented in this setting. This case-report is very interesting since it exemplified that:
- 16S PCR and sequencing is an ideal tool to accurately identify bacteria isolated from clinical samples (i.e. B. diminuta could not be identified using API20NE)
- cystic fibrosis patients may be colonized and/or infected with colistin-resistant strains selected through wide use of nebulized colistin in during cystic fibrosis patients
- such isolates will only be documented if selective media are used and if molecular identification of recovered strains will be performed

To determine whether a bacteria isolated from lower respiratory tract is the cause of the infection or is only a colonizer is a difficult task for both clinicians and
clinical microbiologists. Here, the fact that the patient did not improved initially with an antibiotic effective on S. aureus (ceftazidime) and improved once an antibiotic effective on the two colistin/ceftazidime resistant strains was introduced is the main hint suggesting a role of one or both colistin-resistant strains as an agent of lower respiratory tract infection in the present case. It suggests that cystic fibrosis patients may be colonized by several different bacteria and that the predominant species (i.e here S. aureus) may not be the only/main one participating to the pathogenic process. Although, I fully agree with the general conclusions, I would suggest that the authors tune down their conclusions regarding the role of S. aureus. Indeed, I think that it is possible that S. aureus also partially participated initially to the pathogenic process. Similarly, since both B. diminuta and O anthropi were present, it is impossible to be sure that one of them was only a colonizer.

Minor comments:

page 4: In order to make clear that the 100% homology is with a well documented strain present in a culture collection, I would propose to replace “...as B. diminuta (genbank accession number X87274, 100%)” by “...as B. diminuta (100% homology with B. diminuta strain DSM 1635, genbank accession number X87274)”; and to modify similarly for O. anthropi.

a few typing errors need to be corrected:
page 4 : “O. antrop” should read “O. anthropi”
page 5: “cellulites” should read “cellulitis”

Quality of written English: Acceptable