Reviewer's report

Title: NDM-1 metallo-beta-lactamase and ArmA 16S rRNA methylase producing Providencia rettgeri clinical isolates in Nepal

Version: 1 Date: 28 May 2013

Reviewer: Alexandre Zavascki

Reviewer's report:

1. Is the question posed by the authors well defined? Partially
2. Are the methods appropriate and well described? Partially
3. Are the data sound? Yes
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes, but must be improved.
6. Are limitations of the work clearly stated? No.
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes
8. Do the title and abstract accurately convey what has been found? Title yes. Abstract no.
9. Is the writing acceptable? Yes.

This is a descriptive study reporting the presence of NDM-1 gene as well as OXA-72 in P. rettgeri isolates recovered in Nepal.

It is an interesting and relevant study for two reasons: the description of NDM-1 in Nepal from an epidemiological point of view, and the presence of OXA-72 in an Enterobacteriaceae isolate that to the best of my knowledge is the first description in an organism other than an Acinetobacter spp. Both are very important findings presented by the authors. However, none of these topics were properly explored by them in the discussion.

Major compulsory revision:

1. Re-write the abstract. The background presented does not justify the study. Results: 5 were carbapenem-resistant isolates, in 4 an enzyme was detected, what about the other? It is absolutely not clear (as in the results section in the text) if the 5th isolate which was not identical to the other four was that which had no enzyme detected, was a NDM one or the OXA-72. Conclusions: The detection of OXA-72 in a P. rettgeri must be highlighted.
2. Background:
   a. All this section should be re-written in a logical manner, highlighting the epidemiological importance of NDM and what was the objective of the authors
before the positive results for these enzymes (including OXA-72).

b. The last two paragraphs of the background section must be replaced. They should be placed before the sentence “We describe here 3 P. rettgeri isolates producing NDM-1 and ArmA and 1 isolate producing OXA-72 and ArmA from a hospital in Nepal.”

3. Methods:

a. The authors state that “Genomic sequences were examined to detect genes encoding #lactamases, 16S rRNA methylases and aminoglycoside-acetyl/adenyltransferases, as well as point mutations in the gyrA, parC and pmrCAB operons, and in the fos genes…” but no mention is done for the beta-lactamase genes. In the results, the authors mention a lot of bla genes, but there is no reference to the method used for detection. I suppose it was a PCR (or analysis of the genome sequencing). It must be shown, and if PCR, which primer was used to detect the enzymes, especially NDM-1 and OXA-72.

4. Discussion: The discussion is poor. There are just comments on obvious associations between phenotypic and genotypic findings. The importance of the paper relies on the epidemiological finding and the detection of OXA-72 in an Enterobacteriaceae. It must be more deeply discussed in this section.

Minor Essential revision

Background:

a. Third sentence is a repetition of the second one.

b. Why the following sentence? “There were case reports of P. rettgeri infections, such as an automatic implantable cardioverter defibrillator infection in the United States of America [7] and a case of xanthogranulomatous pyelonephritis in Korea [8].” There are many cases of P. rettgeri infections; there is no sense in referring to case reports.

c. “To date, there have been 4 reports of P. rettgeri isolates carrying drug-resistant genes, including IMP-type metallo-#lactamase (MBL) producers in Japan [9, 10]; VIM-type MBL, PER-1 extended-spectrum #lactamase (ESBL) and 16S rRNA methylase ArmA in Korea [11]; and NDM-type MBL in Israel [12].” Actually, there are other reports of P. rettgeri carrying “drug-resistant genes”. I suppose the authors are referring to carbapenemase-encoding genes.

Methods:

a. What is exactly the “pus samples”? From which site they were obtained?

b. Although the isolates were identified by sequencing, it would be appropriate how was the “phenotypic” method used for identification (line 95)

Results:

a. The results section starts with the description of the susceptibility profile of the isolates to piperacillin-tazobactam. Re-write the paragraph replacing the results of carbapenem MICs first.
Level of interest: An article of outstanding merit and interest 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