Reviewer's report

Title: Antimicrobial susceptibilities of Proteus mirabilis: a longitudinal nationwide study from the Taiwan Surveillance of Antimicrobial Resistance (TSAR) Program

Version: 2  Date: 20 June 2014

Reviewer: Carolyne S Horner

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Overall impression

The manuscript is original in content and adds to the scientific knowledge about susceptibility of P. mirabilis in one geographical area. The manuscript is very well-written. The questions posed by the authors are well defined and the manuscript is well-structured. The methods are largely well-described and ethical approval for the study has been given.

I have five points to make, with other minor suggestions for improvement.

Specific Comments

Point 1. The authors use the terms resistance and susceptibility interchangeably, which is confusing for the reader. For example, in the summary (paragraph 1) mentions resistance in P. mirabilis, whereas paragraph 2 describes the results in terms of susceptibility. Another example occurs in the background section, paragraph 3. In the results section entitled ‘Susceptibilities of isolates carrying ESBL and AmpC #lactamase genes’ the text is presented in terms of resistance, whereas in the Tables isolates are described as % susceptible.

Point 2. I would like to see the threat of carbapenemases in P. mirabilis mentioned in the background section (Background, paragraph 2).

Point 3. In the Data Analysis section of the methods there is no mention of the data that will be analysed; however, in the results section ‘Factors associated with ESBL and AmPC carriage’, age and patient location are mentioned with no definitions of the age groups (i.e. what constitutes paediatric, adult and elderly, ICU, non-ICU and outpatients?).

Point 4. I would like to see a clearer statement in the results/discussion that there was only 1 isolate with non-susceptibility to ertapenem and that carbapenemases do not currently appear prevalent in P. mirabilis in this location.

Point 5. Relating to Point 4, one limitation of the study for discussion is that the isolates were collected biennially during a three month period; therefore, the results presented here are a representation of the total number of P. mirabilis circulating in Taiwan.

Suggestions for improvement – Minor issues not for publication

Section Page Paragraph Suggestion
Abstract 2 37 Replace ‘largest impact’ with significant impact and add the p value.
2 43 Add the p value to indicate significance for the values 0%-7%.
2 44 The word gene should be plural.
3 46 The sentence should begin ‘A significant increase’.
Background 5 64 ‘P. mirabilis had alkaline pH urine. Would the present tense improve this sentence?
5 65 Spelling of magnesium.
5 67 Use of the term ‘used to be’.
5 72,75,141,204,216,221 #-lactamases producing isolates, should read #-lactamase-producing isolates.
6 91 P. mirabilis remained. Would the present tense improve this sentence?
Methods 7 103, 104 Numerical values 1 and 4 should be written in full.
7 107 Specifying species. What is meant by this?
8 118 GN cards were used.
9 128 Spacing ATCC 35218.
10 162 Add type after the word specimen.
Results 11 171 Change ‘these 1157 isolates’ to ‘the 1157 isolates’.
13 214 Change ‘while only 6.4%....did’ to ‘compared with 6.4% of the AmpC-positive isolates’.
Discussion 14 226 Tab beginning of paragraph.
14/16 229,231,233,262 Non-susceptibility.
15 245-248 Repetitive.
15 251 Change ‘huge drop’ to ‘marked decrease’.
17 281 Punctuation missing at the end of the sentence.