Reviewer's report

Title: Polymerase chain reaction ribotyping of Clostridium difficile isolates in Qatar: A hospital-based study

Version: 1
Date: 22 June 2014

Reviewer: Meredith Faires

Reviewer's report:

Major Compulsory Revisions

Abstract:
1) Line 41-43: In the Background, the authors specify that the aims of the study were to determine the prevalence of CDI and describe ribotypes. However, epidemiological information pertaining to the patient population was presented in the Results section but not addressed in the objectives. Objectives need to be re-written.

Introduction:
2) Line 61: “Individuals with impaired antibiotic resistance tend to be….”. Do you have a reference for this statement?
3) Line 68: “…despite over-prescription of antibiotics in this region”. Do you have a reference for this statement?
4) Line 81: On line 74 you mention Al-Khor Hospital but on line 81 you mention Al-Khor Hospital Laboratories. Please clarify.

Materials and Methods:
5) The authors should include information on each of the study hospitals [e.g., type of facility (academic, community), number of beds, services provided, population served (urban, rural), number of admissions on a yearly basis, etc.].
6) Line 83: Why did you include recent antibiotic exposure as part of the inclusion criteria for this study? How did the authors define “recent”? Please specify.
7) Could patients be included in the study more than once? This should be specified.
8) What about pediatric patients? The authors may want to provide exclusion criteria.
9) Line 94: Include ‘by’ between “B” and “Enzyme”.
10) What about the binary toxin gene – was this investigated?
11) Lines 95 – 97: Additional information on culturing of C. difficile should be included in the manuscript.
12) Did the authors look at patient outcomes (e.g., 30 days after a patient was diagnosed with a CDI)? This should be addressed in the manuscript.
13) Did the authors also look at categorizing cases as Hospital-associated,
community-onset? Why or why not?

14) Statistical analysis section: The type of data that were analyzed should be specified (e.g., ribotypes, information pertaining to patient characteristics). The authors should provide information on the specific variables collected in this study (e.g., information presented in Table 3), where this information was obtained (e.g., medical records), if information was gathered from all patients or only those identified with CDI, and what groups were being compared for the statistical analysis (e.g., CDI versus non-CDI). This information needs to be clear and match with the objectives of the study.

15) Could the incidence rate of CDI for the study period, by hospital, be determined? This information should be presented.

Results:

16) PCR Ribotyping paragraph (lines 133 – 140): This paragraph can be shortened as information is repeated several times. For example: “hence PCR-ribotyping was performed on these 79 samples”. Information on the 79 samples was mentioned in the first part of the sentence. Lines 138 – 139 = can be removed.

17) Correlating factors with CDI – this information is not presented prior to the Results section. I believe the authors are using “correlation” and “association”, interchangeably, which can cause confusion to the reader (especially as the authors have not provided a specific explanation pertaining to their data analysis). For example:

a. The investigation has not been designed to look at the association of specific risk factors (e.g., PPI) for CDI in a patient population. For the authors to determine if there was a statistical association between a variable and CDI, information would need to be collected on the non-CDI population.

b. The authors discuss (lines 154 – 155) specific ribotypes being correlated with certain variables. Therefore, information is only required on the CDI population.

18) Line 156: Information obtained from the patient’s medical history needs to move to the Materials and Methods section.

19) Did the authors categorize the results by individual hospital? If so, why were they not presented and discussed in the manuscript?

20) As all patients included in this study had recent antibiotic exposure, analysis regarding antibiotic exposure and its association with CDI cannot be conducted (presented in the Abstract under the Results section and in the Discussion lines 181 - 185).

21) Results of HA-CDI and CA-CDI should be presented.

Discussion:

22) The authors mention the difference in the prevalence of CDIs between Middle-Eastern countries and Europe (lines 162 – 164). Why – study design? Population investigated? Sample size? Different laboratory methods? The authors should elaborate.
23) Limitations of this study need to be presented (e.g., testing regimen used at the hospitals for C. difficile, sample size, missing data).

Minor Essential Revisions

Abstract:

24) Line 34: Remove “at”.

25) Lines 35 and 36: CDI was not identified. The bacterium was (Clostridium difficile).

26) Line 36: CDI samples were not cultured using PCR ribotyping. Clostridium difficile was analysed, at the molecular level, using ribotyping.

27) Lines 38 and 39: Percentages should also be presented.

28) Line 45: Change “commonest” to ‘The most common…’.

Introduction:

29) Line 57: Remove “(C. difficile) strains”.

30) Line 59: Need to re-word “…have resulted from C. difficile infection”.

31) Line 60: Can a patient have an infection if they are asymptomatically colonized? Need to re-word line 60.


33) In line 62 you discuss C. difficile but in line 63 you discuss CDI. These are two distinct and different terms. Please ensure you are using the correct terminology in the manuscript.

Materials and Methods:

34) Line 80: Should the “at” be replaced with “admitted”? 

35) Line 81: “A total of 1,532 patients with suspected CDI were recruited”. This information is part of the Results and should not be presented under the Materials and Methods.

36) Line 84: Please add ‘that’ between “those” and “were”.

37) Line 86: Remove the “watery or bloody diarrhoea” as it was already defined earlier in the manuscript

38) Line 92: Specify the type of sample (e.g., stool). Specify the laboratory – hospital? University?

39) Line 93: Remove the sentence with 1,532 – this is a result.

40) Line 95: CDI should be changed to C. difficile.

41) Lines 99 – 101: This can be removed or incorporated in the PCR Rbotyping paragraph.

42) Line 105: Is the “(2)” a reference?

43) Lines 106 – 112: This information can be removed and a reference provided.

Results:
44) Lines 124-125: Reorganize sentence. Start with the number of patients identified with diarrhea then move onto those with CDI.

45) Line 126: 122 samples? 122 patients? 122 episodes of CDI? This should be specified and standardized throughout the text.

46) Lines 145 – 146: The breakdown in age is presented in Table 1 so it can be removed from the main text.

47) Lines 147 – 150. As the information is presented in the text, I would suggest that Figure 1 be removed from the manuscript (as you also have age information presented in Table 1). Would reword this section so it flows better.

48) Line 162: “C. difficile” infections should be removed and replaced with CDI.

Acknowledgements:

49) Line 214: Change assistant to assistance.

References:

50) Please ensure the references are in the correct format.

a. #2: First names should not be spelled out.

b. #16: Title of article should be bolded.

c. Clostridium difficile should be italicized.

51) Table 2: C. diff should not be shortened in the column heading.

Discretionary Revisions

Abstract:

52) Line 45: Change “commonest” to ‘The most common…’.

Materials and Methods:

53) Further specifying the dates of the study (e.g., October 1, 2011 to August 31, 2012). However, I leave this decision to the authors.

Discussion:

54) Lines 172 – 179: Remove the years of the studies in parentheses.

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.