Reviewer’s report

Title: Incidence, Risk Factors, and Outcomes of Fusobacterium species Bacteremia.

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Reviewer: Ming-Hsun Lee

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Major Compulsory Revisions:

1. Methods, second paragraph
The authors said that further clinical details were obtained from all patients admitted to any of the 4 major acute care hospitals....
But in the first paragraph of “Results”, we can find that actually there were 10 patients without further clinical data. Please explain it!

2. Methods, third paragraph - The authors had better state the definition of the incident cases in the same paragraph.
The authors described their case definition mainly in the third paragraph of “Methods”. However, we can also find the exclusion criteria in the fourth paragraph of “Methods”, which described children being excluded from the data on dialysis. Furthermore, in the first paragraph of “Discussion”, the authors stated another exclusion criteria – non-resident of the region were excluded from the data set.

3. Methods, third paragraph – The authors have to state their case definition more clearly.
The authors stated that all isolates were considered to be clinically significant. Does that mean each "case" is an "episode" of one or more positive cultures even without correlated clinical features? I wonder if a case had no associated clinical features continuing during the period of microbial isolation, can it be defined as an infection? Could it be transient bacteremia?
Besides, why a repeated isolation within 365 days after the first isolation was considered to be the same incident infection? What if a single patient has the 2nd episode of Fusobacterium bacteremia 2 years after the first episode, is it included in your analysis? How about 2 or more episodes in one patient during the 11-year study period? How do you include them for analysis?

4. Methods, fourth paragraph – The definition of nosocomial bacteremia?
Why use the definition – “within 48 hours of hospital discharge”? You had better take a look at the Centers for Disease Control and Prevention (CDC) guidelines.

5. Methods, fifth paragraph – Statistical methods
1) What is “the defined Calgary Zone population at risk”?
2) In the data analysis, patients with Fusobacterium bacteremia are considered as “cases”, but what are the controls?

3) The methods analyzing the risk factors for developing Fusobacterium bacteremia were not described clearly. What kinds of models were developed to assess the association between Fusobacterium bacteremia and each of the risk factors?

6. Results, first paragraph
There were 72 cases identified during the 11-year study period, but only 62 patients in the study had further clinical data available, how did you know the exact numbers of community-acquired, healthcare-associated and nosocomial bacteremias?

7. Table 1
This table is not well designed and is hard to understand. The authors had better label cases with or without a given risk factor, compared to the controls with or without a given risk factor. I give you an example as below.

8. Figure 3 - Label error
Does “total” incidence mean the sum of the incidences of male and female? If yes, why the total incidence is much less than that of male or female?

Minor Essential Revisions
1. Title
Incidence, ……Outcomes of Fusobacterium species bacteremia”. – You put a period [.] at the end of the title. That is not necessary, please delete it!

2. Abstract, Background
Fusobacterium species (spp).” bacteremias are uncommon…..
# Please delete that redundant period [.] before the word - bacteremias.
Actually I don’t think you have to use “spp.” to replace species. You can use “species” throughout the text because you just used “spp.” in “Abstract”.

3. Key words
Too many keywords! You may delete sepsis, Fusobacterium necrophorum, and Fusobacterium nucleatum.

4. Background
Fusobacterium are anaerobic gram-negative rods…..
# Fusobacteria (NOT Fusobacterium) are anaerobic ……

5. Methods, first paragraph
This study included all Calgary Zone residents who developed bacteremia with Fusobacterium between January 1, 2000…. # It should be written as Fusobacterium species, NOT Fusobacterium.
6. Methods, 4th paragraph

It should be written as “nosocomial”, not “nosocomial-acquired”. “Nosocomial” means hospital-acquired.

7. Results, 5th paragraph

A reference number is wrong: “24” should be changed to “22”.

8. The format of References

The authors did not check the format of references carefully before submission. Here I just give you some examples, and you should check the other references by yourselves.


--> The abbreviation of the Journal of Neurology should be “J Neurol”.


--> Delete those redundant periods [.].

Discretionary Revisions

None

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.