Reviewer’s report

Title: Microorganisms involved in Deep Neck Infection (DNIs) in Greece: detection, identification and susceptibility to antimicrobials

Version: 1 Date: 29 Aug 2019

Reviewer: Anthony Chow

Reviewer's report:

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1. A much improved version. The authors have addressed most of the queries from my previous review. However, there are still some minor issues that require attention

2. Line 118: what is meant by "pural material"? Do you mean "purulent material?"

3. Line 124: change "being testing" to "being tested"

4. Line 173: the question whether prior antimicrobial therapy influenced the culture results is an important one. Please show the available data from your studies. You can probably combine the data for adults and children (to give you more numbers). I'm not sure if Pearson Chi Square is the appropriate statistic to use. You should consider a 2x2 contingency table (i.e. column headings prior antibiotics Yes or No; row headings culture positive and culture negative). What you wish to test is whether the distribution of culture results in your study was a random effect or not, using Chi-square statistics (null hypothesis). Use Yates' correction if any cell contains 5 or less. If p value is significant, then the difference in culture results is not a random event but rather is related to prior antibiotic therapy. Also, not finding a significant difference does not mean no difference, but rather a significant difference has not been demonstrated, possible due to insufficient power.

5. Line 178: how do you assess correlation between age and culture results using Pearson Chi-Square? The chi-square statistic utilize categorical data. By age difference, are you simply comparing those over the age of 18 with those under the age of 18? Please clarify. If you are asking is there a difference in culture positivity from adults vs. children, then, a 2x2 contingency table would again be appropriate, with column headings of no. of adults and no of children, and row headings of culture positive and culture negative.
6. Line 185: "All anaerobic bacteria were susceptible to .....metronidazole". Not true. Actinomyces spp. are almost universally resistant to metronidazole. You are probable referring to all anaerobes cultured were sensitive to metronidazole. Please clarify.

7. Line 211: What is your recommendation for empirical antimicrobial therapy for patients from central Greece based on your antimicrobial susceptibility data? Please make a clear recommendation. Is ampicillin-sulbactam plus metronidazole or clindamycin appropriate? Would you recommend the use of clarithromycin? The references you provided (17, 18, 19) were very old (2001-2008) and not current.

8. Line 215: "The DNI microbiology is characterized by generally being polymicrobial ....". Please provide data from your own studies: how many were polymicrobial, unimicrobial, and culture negative?

9. Line 223: The statement that "the most frequent pathogens in bacterial cultures were Gram-negative ..." is misleading. The reference cited (22) is atypical in that only 12.5% of intra-operative cultures were positive. The authors of this paper also explained that the predominance of gram-negative bacteria was likely due to hospital-acquired infection in their ICU patients. I would leave out this reference altogether.

10. Line 232: For reference 27 cited, please clarify that the authors of this paper were comparing the bacteriology between those less than 1 years of age and those above 1 year old.

11. Table 1: Ludwig's angina does not occupy a single space, but in fact involves 2 spaces, the submental space and the sublingual space.

12. Table 2: please show totals for the column "Culture+16SrRNA and row headings of "Gram-positive", "Gram-negative" and "Gram-negative" under Anaerobic bacteria.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

Does the work include the necessary controls?
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Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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