Reviewer's report

Title: Factors influencing microbial colonies in the air of operating rooms

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Reviewer: José Luís Alfonso Sánchez

Reviewer's report:

From the paper entitled "Factors influencing microbial colonies in the air of operating rooms" I have to emphasize the following aspects.

The paper focuses on "determine factors affecting air pollution in a tertiary referral medical center", and therefore, is an interesting work and still is a question that remain unanswered, however I kindly have to make the following comments about the paper:

1.- First, the sample number is low, since they use only 250 samples collected during surgical procedures, which, given the availability of 28 operating rooms, means about 10 samples per OR, which makes it even less representative.

2.-So, the time was extremely long from may through august 2015. It means 2 samples per month per OR.

3.-The information related to the type of interventions collected are very different, including from high-risk interventions, such as transplant surgery or orthopedics surgery, with an excessively small number of samples, mixed with other interventions with lower risk such as urology surgery and others.

4.-The mean bacterial count (cfu / m3) for transplant surgery are 2 or 3 times higher than those of urology or general surgery which is incomprehensible, and normally with those figures we need to close OR in order to clean them.

5.-The study did not distinguish between bacteria and fungi knowing the importance that the latter one have on the surgical infection.

6.-Table 3. When speaking of factors affecting bacterial counts in operating rooms using linear regression analysis it is assumed that is a multiple regression, not simple, according to what they say in the text. From this table, it can be assumed that, since the regression coefficients
is -1.72 in the case of surgery time (hour), as the time of surgery increases, microbial contamination decreases, something that is against all the scientific evidence that the duration of the intervention is directly related to the contamination and the increase of surgical infections. But this table contains more contradictory factors with such evidence, such as that wound classification (contaminated-dirty / clean and clean-contaminated) has no statistical significance (0.467) between them and others.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

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