Author's response to reviews

Title: Early-onset ventilator-associated pneumonia incidence in intensive care units within the first 48 hours after hospital admission: a surveillance-based study

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Author's response to reviews: see over
Dear Sir/Madam,

Please find enclosed the revised version of our manuscript entitled “Ventilator-associated pneumonia incidence in intensive care units within the first 48 hours after hospital admission: a surveillance-based study” for submission as research article.

We detailed below the point-by-point response to the reviewers’ comments which are italicized in the text.

Referee 1
Minor essential revisions
- Regarding the microbiological criteria, some points need to be detailed by the authors:
  * If the authors did not use a plugged catheter to perform BAL, this is not a protected specimen. It is rather a directed BAL.

As suggested, we changed it in the Methods section.

* What is a « protected tracheal aspirate »? This needs some more details and at least one reference.


* What is a « non-protected bronchoscopic specimen » Is it an aspirate obtained by fiberoptic bronchoscopy?

Yes it is. We changed the appellation.

Finally the authors must give the reference for this definition of VAP.

Discretionary revision
- The reviewer suggests to change VAP for early-onset pneumonia regarding pneumonia diagnosed within the first 48-h period following intubation.
We changed VAP to early-onset VAP all along the manuscript.

Referee 2
Major Compulsory Revisions:

1. In method section, authors stated that patients were eligible if they were intubated or tracheostomized during the first 24h after ICU admission. How many patients were tracheostomized during the first 24h of ICU admission?
We were not able to differentiate intubated and tracheostomized patients because this data was not prospectively collected in our surveillance system.

Further, in page 9, line 6 they stated that VAP incidence was expressed as the number of events per 1000 patient-days of exposure to ETT. I would suggest replacing exposure to ETT by exposure to invasive mechanical ventilation since some patients were tracheostomized. In addition, throughout the manuscript patient-days should be replaced by invasive mechanical ventilation days.
As suggested by the reviewer, we replaced exposure to ETT by exposure to invasive mechanical ventilation. We replaced patient-days by invasive mechanical ventilation days.

2. In discussion section, authors suggested that prevention of very early pneumonia might be different from that of early-onset or late VAP. Please clarify. Do you suggest using prophylactic antibiotics? Improving intubation procedure?...
For early-onset VAP, the bacteria involved and the risk-factors for pneumonia might be mostly related to the reason of admission. On the other hand, late-onset VAP might be more related to duration of exposure to invasive mechanical ventilation, quality of care or environmental ecology of the unit. These different risk-factors might lead to specific preventive measures. We added this precision in the Discussion section.

3. The percentage of trauma patients should be given.
Overall, 914 (27.0%) were trauma patients. Patients who had VAP within 9 days after admission had more frequently trauma than other patients (43.6% vs. 25.0%, $P<10^{-3}$). We added this result in the Results section and in Table 1.

4. In Table 1, it seems that VAP incidence increased during the study period.
Please comment.
Yes, there was an increase attack rate of VAP during the study period which was most probably related to the increase SAPSII across year.

5. There is a discrepancy in inclusion criteria between abstract and methods. In abstract, authors stated that ICU length of stay $>48$ was an inclusion criterion. This criterion is not stated in Methods.
This information was already noted in the Setting section of the Method section. However, we precised it in the Inclusion criteria section for clarity.
Specific comments
Abstract:
-line 12: please replace patient-days by mechanical ventilation-days.
-page 4, line 2: occurring after 48h
Methods:
-Page 8, line 6: please define increased oxygen need.
Discussion
-page 12, line 7: “Gram-negative”
-page 12, line 7: what means which did not favour aspiration pneumonia?
We corrected these points in the manuscripts.

Thank you for your interest in our work. Do not hesitate to contact us if necessary.
Sincerely yours,

Philippe Vanhems, MD, PhD