Peer Review File

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Reviewer A

It is not clear to me if the patients were intubated or not.
Thank you for your suggestion. None of the patients had tracheal intubation
Changes in the text: None.
Conclusions are difficult to draw as the study is observational and patients with a gastric tube may have a gastric tube because of dysphagia.
Thank you for your suggestion. It is true that some patients with gastric tube insertion have dysphagia, but this does not conflict with the conclusion that dysphagia is a risk factor for aspiration in patients fed through the tube.
Changes in the text: None.
Please remove decimals in the percentage results.
Thank you for your suggestion. We have removed decimals in the percentage results.
Changes in the text: We have modified our text as advised (see Table1-5)

Reviewer B

Elderly intensive care unit (ICU) patients represent a high-risk group of aspiration. Different feeding patterns will lead to different incidences of aspiration. In the manuscript “Risk factors of aspiration occurence with different feeding patterns in elderly intensive care unit (ICU) patients: a cross-sectional study”, authors analyzed the effects of different eating styles on the occurrence of overt and silent aspiration in elderly ICU patients and to compare the independent risk factors, in order to provide a basis for targeted aspiration prevention.
Couple questions are required to be answered before it will be accepted.
(1) In the title of the paper, “occurence” should be changed to “occurrence”.
Thank you for your suggestion. We have revised.
Changes in the text: We have modified our text as advised (see Page1, line2)

(2) In the whole text, I was confused with “aspiration” and “misaspiration”. Whether the “aspiration” was the similar to “misaspiration”? please state clearly.
Thank you for your suggestion. Misaspiration is the similar to aspiration, and we have unified it as aspiration in this article

Changes in the text: We have modified our text as advised (see Page1, line31)

(3) It was better to add related reference (DOI: 10.21037/apm-21-1192) about the risk factors of ICU nursing.

Thank you for your suggestion. We have revised.

Changes in the text: We have modified our text as advised (see PageX, lineX)

(4) There were patient-specific factors and treatment-related factors for aspiration. Why to focus on the feeding patterns in the study? Please state in the introduction.

Thank you for your suggestion. We believe that there are many reasons for aspiration in elderly patients, but more often it is caused by feeding methods, and at present, there are few relevant studies on different feeding methods leading to aspiration. Therefore, this study focuses on discussing the comparison of aspiration in elderly patients under different feeding methods.

Changes in the text: None.

(5) How about the incidence of aspiration of young patients in ICU? Whether the incidence was similar to that of elder patients? Or why to focus on elder patients in ICU in the study? Please state in the introduction.

Thank you for your suggestion. We know that aspiration rates are significantly higher in older adults than in younger adults. The reason may lie in the degeneration of physiology, the decrease of immunity and many other reasons. We have introduced it in the introduction, but we think it is not the main focus of this study, and due to space constraints, we do not elaborate.

Changes in the text: None.

(6) In the table 1, it was comparison of clinical data between aspiration group and non-aspiration group. But, in the table, it was showed that absorption group and non-absorption group. Why?

Thank you for your suggestion. This is our mistake and has been corrected in the table.

Changes in the text: We have modified our text as advised (see Table1)

(7) In the part of statistical analysis, the measurement data were expressed as mean ± standard deviation (SD). But, in the table 7, 8 and 9, the standard error (SE) was showed. The SE was different with SD. So, please check again.

Thank you for your suggestion. We confirm that there are no errors. The measurement data were expressed as mean ± SD, and the SE in Tables 7-9 appear in the regression analysis, and there is no contradiction between them.

Changes in the text: None.

(8) What were your good suggestions for preventing the aspiration induced by feeding patterns? Please state in the discussion.

Thank you for your suggestion. We have stated in the discussion.

Changes in the text: We have modified our text as advised (see Page15, line19-24).

Reviewer C

Thank you for giving me the possibility to review the manuscript JTD-23-430, entitled "Risk factors of aspiration occurrence with different feeding patterns in elderly intensive care unit (ICU) patients: a cross-sectional study".

In this study the authors sought to construct prediction models of aspiration in the elderly ICU patients.

While the description of this frequent and complex clinical issue in the ICU, there is a number of rational, English style, definition criteria, methodological issues and results presentation that severely impact the quality of the manuscript.

Some of my comments are listed below:

Introduction

Introduction P3L6: "the incidence of silent 6 aspiration is as high as 88.00% in ICU patients (5)". The abbreviation ICU is not defined earlier.
Thank you for the suggestion, we have revised it.
Change in the text: We have modified our text as advised (see Page 3 Line 6)

Introduction P4L6: "explicit aspiration and implicit aspiration" please used the same terms as used before: overt and silent.
Thank you for the suggestion, we have revised it.
Change in the text: We have modified our text as advised (see Page 4 Line 8-9)

Introduction Page 4: it is not clear if the rational and studies presented in this page refers to ICU patients. Please specify the population.
Thank you for the suggestion, we have revised it.
Change in the text: We have modified our text as advised (see Page 4 Line 8)

P4L13-15: "In addition, some studies (21,22) have reported that overt aspiration accounts for only 10% of aspiration pneumonia, whereas silent aspiration accounts for more than 70%". Epidemiological data regarding aspiration pneumonia have already been discussed earlier in the introduction.

Thank you for the suggestion. Indeed, here again we emphasize the high incidence of overt aspiration, which is easily overlooked and requires our focused attention.
Change in the text: None.

Introduction P4: “Therefore, we need to further clarify the risk factors and their interrelationships as well as the degree of influence on aspiration”. This sentence is hard to understand since “risk factors” for aspiration is synonym of “degree of influence” on aspiration.
Thank you for the suggestion, we have revised it.
Change in the text: We have modified our text as advised (see Page 4 Line 23-27)

Introduction is particularly long with repeated information and should be profoundly reorganized, to improve the successive steps of the rational.
Thank you for the suggestion. We believe that our introduction section is relatively logical. Firstly, we briefly introduced the overt and silent aspiration, secondly, we introduced the causes and current situation of the elderly patients in ICU who are more prone to aspiration, and finally, we briefly described the existing findings on the risk factors of aspiration and the purpose of this paper.
Change in the text: None.

The aims of the study are not clearly presented in the introduction.
Thank you for the suggestion, we have revised it.
Change in the text: We have modified our text as advised (see Page 4 Line 21)

The hypotheses of the study are not clearly presented in the introduction.
Thank you for the suggestion, we have revised it.
Change in the text: We have modified our text as advised (see Page 4 Line 19-21)

The rational on why an ICU stay may increase the risk of aspiration is not mentioned whereas it should have been a corner stone of the rational (“swallowing neuromyopathy”).
Thank you for the suggestion. As we mentioned in the second paragraph of the introduction, elderly patients admitted to the ICU are often in poor health and often require tube feeding for nutrition, and the incidence of aspiration due to reflux of gastric contents is greatly increased.
Change in the text: None.

Methods

Primary endpoint: “The diagnosis of aspiration was developed by the investigators through consultation 9 with expert neurologists and geriatricians on a self-made basis.” How consultation with experts could be performed with the retrospective design. How the investigators defined their primary endpoint (aspiration pneumonia) is not clear. The diagnostic of aspiration pneumonia is unfortunately very challenging in daily practice and authors should have described precisely their diagnostic algorithm that led to aspiration pneumonia diagnostic. For instance, investigators based their definition of overt aspiration by the following elements: “cyanosis, dyspnea, shortness of breath, sudden drop in oxygen saturation”. All these elements are not necessarily related to overt aspiration especially in the critically ill patient.

Thank you for the suggestion. We revised the diagnosis of aspiration. The specific judgment is completed by the joint participation of the subject group.

Change in the text: We have modified our text as advised (see Page 6 Line 11-24)

Secondary endpoint: How the tracheobronchial aspirate of the patients was collected since not all the patient were intubated. “In this study, the content of pepsin in airway secretions was determined by 23 enzyme-linked immunosorbent assay (ELISA) as a basis for determining occult24 aspiration (25). In non-intubated patient the presence of pepsin in sputum is normal (even > 3,6ng/mL). This questioned the relevance of the definition criteria for silent aspiration.

Thank you for the suggestion. As mentioned in the diagnostic criteria of silent aspiration in the methods, for patients without an artificial airway, we mainly measured the pepsin content in the patient's saliva. In addition, the determination of pepsin thresholds in the diagnosis was based mainly on references 27 and 28.

Change in the text: None.

Results

Mean age should not be presented with two decimals for example.

Thank you for the suggestion, we have revised it.

Change in the text: We have modified our text as advised (see Table1, Page 7 Line 22-24)

Predictions models include 10 variables whereas only few events are reported. For instance, Multiple logistic regression of the oral feeding group to predict overt aspiration includes 10 variables whereas only 16 events are recorded. Theoretically only 2 variables could have been entered in the model. I am not sure about the validity of the prediction models used.

Thank you for the suggestion, we have revised it. We are including the factors with

differences in the one-way test in the regression analysis, which is consistent with multiple regression. Besides, for the discussion of independent risk factors of aspiration in each group, control variables were carried out, and multiple Logistics regression was selected for analysis.

Change in the text: None.