

Dear reviewers,

Thank you for the comments on our manuscript entitled " Artificial Intelligence in Diagnosis of Pulmonary Diseases". We appreciate the suggested modifications and have revised the manuscript accordingly. The revised sections are added. The detailed responses to the reviewers' comments are presented as follows:

Reviewer #1:

Scientific Quality: Grade D (Fair)

Language Quality: Grade B (Minor language polishing)

Conclusion: Major revision

Specific Comments to Authors: 1. In my opinion, the potential discussion scope of the title of this paper does not seem to match the specific lung diseases discussed, so I suggest the author revise the title to supplement the ai-related lung research hotspots. 2. In this paper, the introduction of specific AI technologies applied to lung research is relatively limited and vague to some extent. It is suggested that the author reorganize and elaborate this part to improve the accuracy. 3. It is suggested to supplement the discussion on the limitations and challenges of further integration of ARTIFICIAL intelligence into clinical lung practice.

Response #1:

1.1 We revised the title from "Artificial Intelligence in Diagnosis of Pulmonary Diseases" to "Artificial Intelligence Applications in Common Pulmonary Diseases"

1.2 We added detail of AI technology in the introduction part

1.3 We added a paragraph for the limitation/challenges of further integration of artificial intelligence into clinical practice before the conclusion.

Reviewer #2:

Scientific Quality: Grade B (Very good)

Language Quality: Grade A (Priority publishing)

Conclusion: Accept (General priority)

Specific Comments to Authors: In this work, Choudhury et al. present a nice compendium of the most common applications of artificial intelligence (AI) in pulmonary diseases. They briefly expose the pros and cons of applying AI to an assorted list of major pulmonary complications/diseases such as obstructive lung disease, pulmonary infections, fibrotic lung disease, and malignancy. In opinion of this reviewer, this mini-review accomplished the task assigned to it. Complementary, it is easy to read and wellpresented manuscript that would be of very interest to the potential reader of the journal and community in general.

Response #2: We really appreciate the reviewer's comment.

Reviewer #3:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Major revision

Specific Comments to Authors: Choudhury et al have proposed an interesting mini review of Artificial Intelligence methods used for pulmonary diseases diagnosis. However, the introduction is very general. The authors must state why such a review is needed and what their contributions? Also, at the end of the abstract, the authors should state what the current implementation of AI for pulmonary diseases diagnosis, AI method limitations or their findings based on the review conducted. Stating the goal or the purpose of the review not sufficient enough. In the obstructive lung diseases section, please correct the spelling error > 1430 historical patient cases. Historical should be historical. Please add a table before the conclusion to summarize or list down few methods or approaches of AI that has been implemented for pulmonary diseases diagnosis and prove to provide an excellent result. This will help you to put previous research and findings in context and present current developments in a critical and focused manner. The conclusion is very short. Please consider extending the conclusion Mini review should contain about 30 references at least. 21 references is not sufficient for the current study.

Response #3: We added more details to the introduction part and added the current implementation of AI for pulmonary disease as in Table 1. We add the limitation of AI paragraph before the conclusion part. Spelling error was corrected. We added the table to summarize the example of AI that has been implemented in pulmonary disease diagnosis. We added more details in the context and extended our references to 31 references.

Reviewer #4:

Scientific Quality: Grade C (Good)

Language Quality: Grade A (Priority publishing)

Conclusion: Major revision

Specific Comments to Authors: The topic is very hot. However, given that the type is a mini review, the discussion in the paper is not enough. I recommend reconsidering after major revisions. And the following suggestions may help improve the quality of the paper. 1. The relationship between machine learning and AI needs to be discussed in detail as a section in the paper. These two concepts seem to be vague in the submitted article. Recommended to re-write it before the discussions about the application of AI. 2. A section to summarize the process of AI used in this diagnosis of pulmonary diseases in detail is required. Related schematic diagrams are also needed 3. Comparing the significance and importance between AI and doctors in prognostication, as well as treatment of pulmonary diseases is required to be written in detail as a section. Recommended to write it after the discussions about the all applications of AI. 4. Are there some reviews in this field published by other researchers? How is your review different from their review? This question needs to be stated in the introduction section 5. An overall framework

diagram to show several aspects of the application of AI in this field is required. Also, a table to list these applications and the corresponding advantages is recommended. 6. The cited literature and related discussions seem to be insufficient. If possible, add these parts. 7. Adding the term COVID-19 to the keyword section is recommended to improve the impact of the article.

Response #4:

4.1 We discussed more details about AI and machine learning before the application.

4.2 We added figure 1 to summarize the application of AI in pulmonary disease and table 1 to summarize the description of AI use in pulmonary diseases.

4.3 We added more details about the comparison of AI and physician prognostication.

4.4 We mentioned our aim of “minireview” in the introduction part

4.5 We added the table to summarize the example of AI that has been implemented in pulmonary disease diagnosis

4.6. We added more details in the context and extended our references to 31 references.

4.7 We added COVID-19 to the keyword section.

Reviewer #5:

Scientific Quality: Grade D (Fair)

Language Quality: Grade B (Minor language polishing)

Conclusion: Major revision

Specific Comments to Authors: This manuscript is a "mini" review of the application of AI in Diagnosis of Pulmonary diseases. If this manuscript is to be considered a "review" (even though it is a "mini" review), the authors should include information such as which databases were searched, for what time period, and with what keywords. Also, the purpose of the article is to introduce "common applications of AI," but if there is a criterion for the authors' definition of "common," please provide it. There is nothing wrong with the contents of the article, but the description is insufficient for a "review". Although several papers are introduced for each disease, it is difficult to compare the contents of each paper because they are narrative. If the authors have an intended audience for this manuscript, it should be mentioned. The titles of chapters and sections are distinguished by whether they are underlined or not, but if "chapter titles are underlined," then the introductions and conclusions should also be underlined.

Response #5: we added a paragraph for keywords that we used to search for articles for our minireview.

As we changed the title according to reviewer#1 to AI applications in common pulmonary diseases, we focused on obstructive lung diseases, pulmonary infection, interstitial lung disease, lung nodules and lung cancer. We added “narrative review” word in our introduction. We now underlined the introduction.

Reviewer #6:

Scientific Quality: Grade D (Fair)

Language Quality: Grade A (Priority publishing)

Conclusion: Major revision

Specific Comments to Authors: The manuscript entitled “Artificial Intelligence in Diagnosis of Pulmonary Diseases” reports a mini-review of AI applications in diagnosis of pulmonary diseases, including chronic obstructive pulmonary disease, asthma, interstitial lung disease, tuberculosis, covid-19, and pulmonary nodules and lung malignancy. The language is good and the manuscript covers most of pulmonary diseases. However, I feel that the AI algorithms regarding diagnosis of pulmonary diseases have not been deeply discussed in the manuscript. The algorithm details and data unique to each type of pulmonary diseases are not clearly presented in the manuscript. In addition, comparison of advances in relevant algorithms is lacking. I suggest that the authors may consider to discuss the topic in more details and provide current advances in the field.

Response #6: We added more details regarding the AI algorithms/devices that have been applied in pulmonary diseases to provide the current advance in the field.