

Peer Review File

Article Information: <https://dx.doi.org/10.21037/apm-22-1427>

Review comments

Reviewer A

Authors provide a literature review connecting the chronic respiratory disorders with clinical outcomes in covid-19 patients

Comment 1: Overall, the manuscript adds no new information that what is currently available in the literature

Reply 1: This manuscript is structured as a narrative review of current and most recent literature and not intended to add new information to current literature; instead, the focus was to summarize the effect of covid-19 on the respiratory via pathophysiologic mechanisms. A comprehensive review of pathophysiologic effects of covid-19, including effects on gas exchange and mechanistic properties, is currently not available in the literature.

Comment 2: Review strategy: lacking robust methodology, PRISMA guidelines/checklist missing,

Reply 2: PRISMA guidelines/checklists are for systematic reviews, however this manuscript was requested as a narrative review as per invitation. The narrative review checklist for Annals of Palliative Medicine was followed as per submission guidelines.

Comment 3: Databases included: google scholar and PubMed only, no clear reason provided. Why not the other databases? Followed by this, the authors also included additional references from other review manuscripts.

Reply 3: Given the novelty of Covid-19, PubMed and google scholar databases encompassed the most relevant literature and were used to conduct the literature search.

Comment 4: Search strategy: authors have looked for chronic illnesses, gas exchange abnormalities and mechanical aspects of respiration.

Reply 4: The aim of our narrative review was to summarize the effect of covid-19 on pre-existing/chronic respiratory illnesses with focus on its effect on gas exchange and mechanical aspects of respiration, as this information is not currently available in the literature.

Comment 5: Manuscript lacks a clear message in the review, lack of tables to succinctly present the high value information makes it difficult to read a dense manuscript.

Reply 5: line 59-63 in the introduction summarizes the aims of our review. Given that one of the main aims of the manuscript is a summary of pathophysiologic mechanisms, it is challenging to summarize this information in table form. In addition, the format of this manuscript is a narrative review, making it more difficult to summarize conclusions in table form. Figure 1 was included in the manuscript to emphasize pathophysiology.

Reviewer B

A well written short narrative review which will very help for people looking for a refresher on the pulmonary pathophysiology as related to COVID.

Reply: The authors thank the reviewer for their comments.

Reviewer C

In the current study by Dr. Venkat and Dr. Badr, the authors have conducted a systematic review to look at association of respiratory disorder with clinical outcomes in COVID-19. It is a well written manuscript and I have the following comments to the authors-

Comment 1: The authors have included obesity in their study. When selecting studies for the review article, did the authors look at general term obesity or specifically include studies which defined morbid obesity or BMI to classify obesity.

Reply 1: We did not specify articles which defined morbid obesity or use BMI to classify obesity as impairment of lung function is more closely related to waist circumference than BMI itself. The authors aimed to review the general effects of obesity on respiration as it relates to covid-19 given lack of currently available literature on the topic.

Comment 2: Lines 143-145 missing reference

Reply 2: This was added

Comment 3: The authors have concluded that Asthma does not appear to present a significant risk for severe outcomes to COVID-19. However, the CDC concludes (moderate to severe) Asthma is a risk factor to get very sick from COVID-19. Can the authors look into the CDC guidelines and add more information about Asthma to conclude in accordance with CDC guidelines?

Reply 3: Line 202-208: added statement to clarify GINA guidelines as well as include CDC guidance.

Line 331-332: statement added to clarify mild-moderate, well-controlled asthma.

Comment 4: A number of other respiratory disorders such as pulmonary hypertension and cystic fibrosis also have been identified as risk factors for COVID-19. Given a systematic review on respiratory disorders, can the authors try to incorporate these also in the study.

Reply 4: There is minimal literature available regarding covid-19 and cystic fibrosis/bronchiectasis and therefore was not included in the review. There is literature available regarding pulmonary hypertension and COVID-19, however there is significant overlap with COVID-19 and effects on both the cardiovascular system as well as vascular pathology. Given this significant overlap and word limit of 6,000 for this manuscript, the authors did not include pulmonary hypertension in the list of respiratory disorders reviewed.

Reviewer D

Respiratory disorders and their association with outcomes in COVID-19 patients may be clinically important, since several respiratory diseases including chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea syndrome (OSAS) are considered to be considerable risk factors for the severity of COVID-19. In this review paper, the authors have summarized the data concerning the most commonly encountered respiratory diseases in clinical practice, namely COPD, asthma, interstitial lung disease (ILD), OSAS, as well as obesity.

Comment 1: Although obesity has a negative effect on both gas exchange and mechanistic aspects of respiration, the obesity itself is not a respiratory disorder. Thus, obesity part should be rewritten by the authors.

Reply: We feel strongly that although not traditionally thought of as a respiratory disorder, obesity is a very important and underappreciated disease modifier for all respiratory disorders. Obesity affects both functional aspects of respiration as well as gas-exchange, making it an important consideration when taking into account the effects of COVID-19 on underlying respiratory disease.

Comment 2: Because the obesity may have a serious effect on coagulopathy and cardiovascular disorders irrespective to pulmonary condition, the obesity associated COVID-19 severity may be differentiated from the pulmonary diseases associated COVID-19 severity.

Reply 2: lines 300-322 include the effects of obesity on non-respiratory systems. Although there are systemic effects of obesity as it relates to COVID-19, these effects become additive when factoring in how obesity alters respiration. The authors felt this combined effect is underrecognized in the clinical settings and has not been well-described in current literature.

It has been reported that four common coronaviruses prior to MERS and SRAS are associated with exacerbation of bronchial asthma. However, the SARS-Cov2 does not have a risk of exacerbation of bronchial asthma. It is not surprising that the ACE2 receptors studies have revealed that the COPD and asthma are differently susceptible to COVID-19.

Comment 3: Therefore, “Surprisingly, and in contrast to previously studied viral epidemics, asthma does not carry increased associated risk of contracting the virus or worse clinical outcomes” in the abstract should be rewritten

Reply 3: lines 331-332 were updated to clarify the statement in question.

Reviewer E

In this study, Venkat & Badr review the main publications related to the outcome of patients with the most prevalent respiratory diseases who have been infected with covid-19. Given the large amount of information available in Pubmed related to covid-19, these types of reviews are difficult to write. Nevertheless, the authors achieve a smooth and easy read. The article is well written.

I have only minor concerns.

Comment 1: In table 1, exclusion criteria: The term of "new articles" is confusing. Please be more precise.

Reply 1: The term “news articles,” relates to those articles published by “news” sources such as CNN, Fox news, CNBC, etc.

This was reworded as “articles from news media” to avoid confusion.

Comment 2: Line 148, Include article doi.org/10.3390/life12060887

Reply 2: This was added

Comment 3: Line 224, Other studies reveal that the percentage of patients with persistent ILD would be lower than expected (Include references doi.org/10.1148/radiol.2021211746; doi.org/10.3390/tomography8030097).

Reply 3: lines 226-228 were added with literature referenced by reviewer.