

Peer Review File

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Reviewer A

The authors have expressed AECOPD rate as a ratio of its number of hospitalizations over total hospitalizations. Thus the decline in AECOPD "rate" in 2020 could simply reflect an increase in total hospitalization which was likely due to COVID in that year. In addition, it is not clear whether the hospitals were stressed by COVID admissions in 2020 and were forced to use more stringent criteria for AECOPD admissions at that time. A better metric might be total number of patents presenting for care for AECOPD, per se, or per unit population.

Comment 1: Thus the decline in AECOPD "rate" in 2020 could simply reflect an increase in total hospitalization which was likely due to COVID in that year.

Reply 1: Thank you very much. In China, there were some COVID-designated hospitals to treat COVID-19 patients. In our study, all hospitals were not the designated center. The admission for all patients to our hospitals was not affected. We added this explanation in the manuscript (see Page 3 Line 51-56 and Page 4 Line 69-70).

Changes in the text: We added this explanation in the manuscript (see Page 3 Line 51-56 and Page 4 Line 69-70).

Comment 2: In addition, it is not clear whether the hospitals were stressed by COVID admissions in 2020 and were forced to use more stringent criteria for AECOPD admissions at that time.

Reply 2: We are sorry for this unclear expression. The admission for all patients to our studied hospitals was not affected. All kinds of patients with a negative result of COVID-19 were admitted in hospitals without any restriction. There were some COVID-designated hospitals to treat the COVID-19 patients.

Changes in the text: We added this explanation in the manuscript (see Page 3 Line 51-56).

Comment 3: A better metric might be total number of patients presenting for care for AECOPD, per se, or per unit population.

Reply 3: Thank you very much. We strongly agree with the Reviewer's suggestion. Regrettably, the Universal Health care system in China is not sound enough. It is nearly impossible to collect information of all patients with AECOPD from different regions. However, in this letter we used an alternative method that collecting numbers of patients with AECOPD and total of all kinds of patients from 11 hospitals during the outbreak of COVID-19 and the corresponding time periods from 2017 to 2020. The decrease of hospitalization AECOPD patients indirectly reflected some measures such as wearing a mask outdoor might be helpful for patients with COPD from acute exacerbation. Perhaps more studies should be conducted to explain this phenomenon in the future.

Reviewer B

The authors present a letter to the editor addressing the policy during the COVID-19 pandemic and suggesting that this could be a protector for acute exacerbation in COPD patients.

Although the manuscript type is short by definition, in my opinion, this could serve to add to the field of AECOPD research, particularly in the current confinement/lockdown situation. A brief paragraph/line regarding intrinsic factors affecting AECOPD could improve (e. g. PMID: 31964947, 32093672, 31993068, 30810540) even more the letter.

Comment 1: A brief paragraph/line regarding intrinsic factors affecting AECOPD could improve (e. g. PMID: 31964947, 32093672, 31993068, 30810540) even more the letter.

Reply 1: Considering the Reviewer's comments. We added the risk factors of COPD in the manuscript (Page 2 Line 35-36) and cited one article published which was associated with our study.

Changes in the text: We added the risk factors of COPD in the manuscript (Page 2 Line 35-36) and cited one paper as the 4th reference.

Reviewer C

Air pollution and respiratory viral infections are important risk factors of acute exacerbation of COPD (AECOPD) associated hospitalization in the winter. This review suggests the policy during the outbreak of COVID-19 in China including home quarantine and face mask wearing may contribute to the reduced hospitalization rate of virus or air pollution triggered AECOPD hospitalization between January and March 2020.

The study investigated patient data of AECOPD winter hospitalization rate from 11 hospitals in four consecutive years from 2017 to 2020 in south China. The authors highlight a range of factors linked to the reduced hospitalization rate of AECOPD during the outbreak of COVID-19 in 2020, and COVID19 restrictions as potential measures in decreasing not only respiratory viral infection (COVID19 and influenza) but also air pollution associated with AECOPD hospitalization.

Given COVID19 restriction is the only difference associated with AECOPD hospitalization in the same hospital from the past 4 consecutive years, the authors should note firstly, how many AECOPD hospitalizations in the studied populations in the past few years were triggered by air pollution or respiratory viral infections including seasonal flu, human rhinovirus or RSV infection etc.

Secondly, it is not clear whether or not the COVID19 induced AECOPD hospitalization numbers were included in year 2020 hospitalization rate. These patients may have been hospitalized in different hospitals during the pandemic.

Comment 1: Given COVID19 restriction is the only difference associated with AECOPD hospitalization in the same hospital from the past 4 consecutive years, the authors should note firstly, how many AECOPD hospitalizations in the studied populations in the past few years were triggered by air pollution or respiratory viral infections including seasonal flu, human rhinovirus or RSV infection etc.

Reply 1: Thanks to the Reviewer for your time and feedback. The air pollution and respiratory viral infections are the main reasons for patients with COPD to be hospitalized. Regrettably, it is

hard to investigate how many patients with AECOPD were caused by air pollution or respiratory viral infections in the past few years in our studies hospitals. In order to avoid bias of environment and seasons, we just collected hospitalization AECOPD patients during the corresponding time periods. The decrease of hospitalization patients with AECOPD indirectly reflected some measures such as wearing a mask outdoor might be helpful for patients with COPD.

Comment 2: Secondly, it is not clear whether or not the COVID19 induced AECOPD hospitalization numbers were included in year 2020 hospitalization rate. These patients may have been hospitalized in different hospitals during the pandemic.

Reply 2: Apologies for being unclear in this part of our paper. All hospitalization patients in our study were not COVID-19 patients. Because in our country, we have COVID-designated hospitals, not including our studied hospitals. Moreover, all studied hospitals were not in the pandemic region. We added this explanation in the manuscript (see Page 3 Line 51-56 and Page 4 Line 69-70).

Changes in the text: We added some explanations in the manuscript (see Page 3 Line 51-56 and Page 4 Line 69-70).