

Author Response 1:

Reviewer: 1

Comments to the Author

Recent studies are published on COVID-19 and Obesity doi: 10.1053/j.gastro.2020.08.028

<https://doi.org/10.7326/M20-3742>

Please include the recent data and studies.

Method section: Primary outcomes should not be included under the Statistical analysis. Include the analysis part in the statistical analysis.

Manuscript is otherwise well written.

Response: We appreciate the reviewer's comments regarding a well written manuscript. Since our initial submission, the publication that the reviewer is referencing has been released and it is a valuable reference that we have now since incorporated into the revised manuscript. Secondly, we have adjusted the Methods section of our manuscript – appropriately moving the “outcomes” discussion regarding primary and secondary outcomes out of the statistical analysis section of the paper.

Reviewer: 2

Comments to the Author

Dear Editor and dear Authors,

Many thanks for your interesting manuscript.

In this letter to the editor Raj Parikh, et al. describe the results of their retrospective study aiming to clarify the relationship between obesity mortality and the need for of IMV in Covid -19 patients admitted to the ICU. The paper is interesting and investigate a worthy topic. However, there are some methodological flaws which have to be addressed.

1. Logistic regression analysis has been adjusted only for age sex and asthma but the outcome in patients admitted in ICU may have many other confounding factors (including time to mechanical ventilation, kind of support, pulmonary compliance, degree of pressure ventilation, degree of intrapulmonary shunting, eventual suvra infections, etc...).
2. The authors didn't report if consider as outcome 30-day mortality or 15-day mortality

Response: The reviewer makes several very important points in regards to feedback regarding our manuscript. The most important one, of course, is that there are several confounders in play when it comes to retrospectively evaluating Covid-19 and attempting to make connections between certain risk factors and disease outcomes. Not only is our study limited by the small number of patients and it being a single center investigation, but we did not have access to significant additional data (some of it was never collected, some was never reported, etc) that the reviewer is referencing. For example, not all patients had Echocardiograms to evaluate for secondary causes of hypoxemia such as shunt. On a similar note, time to ventilator/intubation was not an easily recordable metric given the limitations of our electronic medical record. Nevertheless, we have made a point to mention the lack of inclusion of such data in the limitations section of our paper so as to reinforce the point of other attributes and characteristics that may have been significant confounders when looking at disease outcomes in Covid-19. As for mortality, this was defined as in-hospital mortality and not defined by the day 15 or day 30.

Reviewer: 3

Comments to the Author

Relationship between obesity and outcome of Covid-19 infected patients is an important question which was already frequently studied, even with large cohorts (Docherty AM et al. BMJ 2020; Kim L et al. Clin Infect Dis 2020, Czernichow S et al. Obesity 2020 for example). This study confirms previously reported results: obese patients are frequently admitted in ICU but impact of obesity on mechanical ventilation need and mortality remains unclear.

As stated by the authors, their study had some weaknesses, mainly monocentric design and small sample size which preclude solid conclusion.

Some additional data could help to better understand their results and possibly to try to generalize their conclusion:

we need more information about studied population: time period study, are all admitted patients included ? what about non admitted (or non included patients) ? what is the percentage of Covid-19 patients admitted among total admitted patients ...

What are mechanical ventilation indications in your ICU ? Patients severity indexes (APACHE, SOFA, SAPS ...) should be reported in order to better described your patients (I was surprised that "only" 50 % of your patients were mechanically ventilated whereas in my institution more than 80 % of the Covid-patients admitted in ICUs (100 beds) were intubated). Among ventilated patients, how many patients fulfilled moderate to severe ARDS criteria according to Berlin definition (JAMA 2012) , What are your guidelines about ventilator settings, particularly for ARDS patients. Use of higher PEEP levels in obese patients is not surprising but other data would be interesting: driving pressure, use of trans pulmonary pressure to adjust PEEP level ...

Response: The reviewer's feedback is significant and such guidance and advice is monumental in helping a young investigator such as myself. I truly appreciate the dialogue and believe it not only helps enhance this manuscript but my future work as well. In particular, the reviewer makes a valuable point regarding mentioning the time period of this study. During this pandemic, where new publications are coming out at a spurious rate, it is important to note such a time period so this study and the data it contains can be compared to other similar protocols and investigations. Therefore, we have appropriately included this in the Methods section. Additional comments made regarding criteria for ICU admission are valuable but our Emergency Room to ICU admission process is not a standardized protocol that follows commonly established critical care scoring tools such as APACHE, SOFA, SAPS, etc. The data required to provide such scores is not readily available for each patient in this study and therefore is not included in the study. Similarly, given a shortage of ABG and VBG kits at our institution, routine use of assessing P/F ratios, as defined by the Berlin criteria for ARDS, was not completed and therefore could not be included in the study either. Lastly, our respiratory therapy department was not familiar with the use of transesophageal pressure monitoring though this would have been an invaluable assessment given the scope of this manuscript focusing on obesity and its effects on Covid-19 respiratory mechanics.