## Cardiovascular diseases burden in COVID-19

*To Editor:*

We would like to thank the authors for their interest on our paper and for taking time, expressing their viewpoints.

The opening sentiment of this letter is expressing that the Angiotensin Converting Enzyme 2 (ACE-2) seems to have a key role in coronavirus disease 2019 (COVID-19) pathophysiology and its effect on cardiovascular system. The importance of ACE-2 in disease progression has been widely discussed and approved [1].

The second part of the letter emphasizes on the cardiovascular system involvement in COVID-19 patients, especially cardiovascular inflammation. As we showed in our study, the pooled prevalence of cardiomyopathy was estimated 7%, which is relatively low in comparison with other cardiac complications in these patients. Therefore, more clinical evidences are needed to approve this hypothesis.

The evidence regarding heparin-binding protein (HBP) increase in COVID-19 is not sufficient until these days, while there are a limited number of studies discussing this phenomenon [2-4]. In order to fully understand the potential role of HBP in pathophysiology of COVID-19 infection, more clinical studies are needed.

It should be mentioned that heparin administration could also be potentially associated with life-threatening side effects, including Heparin-Induced Thrombocytopenia (HIT), which had been observed in some patients with COVID-19 [5]. This could raise doubt in the use of heparin as an anti-inflammatory agent [6] in these patients, since limited data are available. There are a few studies, which suggested that risks and benefits should be balanced in the use of heparin [7].

Given the potentially life-threating risks of heparin administration and limited data on it benefits, a personalized approach is needed for the use of heparin in COVID-19 patients. Cost and benefits of heparin administration needs to be carefully considered for each case before its use in COVID-19 patients.

## References

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