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# Resuscitation

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## Letter to the Editor

# Reply to: Coronavirus disease 2019 and ethical considerations for extracorporeal cardiopulmonary resuscitation



To the Editor,

We would like to thank Dr. Spyros D. Mentzelopoulos, Dr. Leo Bossaert, and Dr. Robert Greif, for showing interest in our article, entitled “Extracorporeal Cardiopulmonary Resuscitation Should Not Be Performed on Confirmed or Suspected COVID-19 Patients.”<sup>1</sup> They have, however, expressed some concerns that we would like to address.

They argue that extracorporeal cardiopulmonary resuscitation (E-CPR) should be performed irrespective of COVID-19 status, resuscitation provider safety, emotional or physical stress, and resource availability<sup>2</sup>; however, we emphasize these risks.

We believe that resuscitation provider safety, emotional or physical stress, and resource availability, are very important factors, and could be key determinants in deciding whether to perform E-CPR. It is clear that the highest priority should be the prevention of infection in healthcare workers, and we believe that E-CPR should be discouraged if there is any risk of infection by performing E-CPR. They point out that actual confirmed COVID-19 cases may well represent a small fraction of the number of originally suspected cases; however, the source that they have cited<sup>3</sup> also mentions that healthcare professionals underestimating the risk of transmission may spread the virus to the rest of their team, and within the larger community, putting further strain on the healthcare system.

Patient safety during E-CPR is an important issue. Stress during cardiopulmonary resuscitation (CPR) has been shown to be associated with worse CPR performance.<sup>4,5</sup> Stress reduces focus and, therefore, in stressful situations, the ability to dismiss irrelevant information is reduced, leading to an increase in distractibility. Additionally, stress impairs rational decision-making, and is associated with a loss of team perspective and poor team performance. Stress-induced poor performance can further increase the mental stress of the rescuer, which could lead to a vicious cycle.

If E-CPR is performed in out-of-hospital cardiac arrest (OHCA) patients with COVID-19 infection, or suspected infection, a careful simulation should be performed, such that all staff of the resuscitation team, and subsequently the intensive care team, are free from both the risk and fear of infection, in an attempt to minimize their mental and physical stress. Proficiency in technical resuscitation procedures while wearing personal protective equipment is necessary. Furthermore, the availability of medical resources is an absolute requirement.

In summary, we believe that E-CPR in OHCA patients with COVID-19 infection, or suspected infection, is risky in a pandemic state, and should not normally be performed, except under very limited conditions. If you are going to perform E-CPR while maintaining patient safety, you should first simulate this procedure in order to recognize the potential difficulties before you have any E-CPR-related infections in healthcare workers.

## Conflict of interest statement

The authors declare no conflict of interest.

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