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Respiratory protection among healthcare workers during cardiopulmonary resuscitation in COVID-19 patients



Keywords:

COVID-19
SARS-CoV-2
Pandemic
Infection
Healthcare workers
Cardiopulmonary resuscitation
Respiratory protection
Respiratory

To the Editor:

We have read with great interest the article Hwang et al. [1]. Although this is a simulation study, it shows that the N95 respirator did not provide adequate protection against respiratory infections during chest compression. The current SARS-CoV-2 pandemic poses a significant challenge for medical personnel, especially in the field of emergency medicine [2]. Following its initial outbreak on December 31, 2019, in Wuhan, a central city in China, COVID-19 has spread around the globe affecting almost all countries. It has been declared a pandemic, and it has infected over 2,790,986 people in a short time, with 196,920 deaths (April 24, 2020), which indicates its high virulence. The emergency staff working at the frontlines of this virus are the most vulnerable, and in the present situation, treat every patient as being potentially infected by the coronavirus. This is especially critical considering the transmission of SARS-CoV-2 is presumed to occur mainly through respiratory droplets generated by coughing and sneezing, by direct contact with contaminated surfaces, and because in a large number of patients COVID-19 disease may be asymptomatic [3].

As recommended by the CDC for aerosol-generating procedures (AGP), medical personnel should be equipped with full personal protective equipment (PPE) for AGP. Currently, there are conflicting reports on protection against the infection while wearing N95 respirators. They undoubtedly protect more than cloth masks or medical masks [4]. However, to additionally protect the rescuer during the CPR procedures, the use of face shields covering the entire face is also recommended, apart from using fitted N95 respirators – preferably equipped with FFP3 class filters [5]. Then the risk of face contamination, including the mucosa, is much lower. The above is particularly vital in case of inadequate fitting of N95 respirators due to the improper placement or the inability to fit due to facial hair.

To reduce the risk of the spread of SARS-CoV-2 during CPR, it is good practice to intubate the patient as soon as possible to fully isolate the airway, thus reducing the formation of a potentially dangerous aerosol.

We should, moreover, remember that in a hospital setting, all aerosol-generating procedures should be done in an airborne infection isolation room.

In summary, medical personnel should use full personal protective equipment for aerosol-generating procedures when performing COVID-19 CPR in suspected/confirmed patients. Limiting protection strictly to the use of an N95 respirator as a respiratory protection device is a mistake that may result in an increased risk of infection among medical personnel.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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23 April 2020