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CORRESPONDENCE

COVID-19: the risk of respiratory techniques in healthcare workers

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To the Editor:

In December 2019, Wuhan, China, was identified as having a cluster of pneumonia cases of unknown etiology. Subsequent investigations revealed a novel coronavirus, COVID-19, as the cause of the most significant pandemics of the modern era [1]. As the pandemic progresses, it is regrettable to know that healthcare workers are being infected constantly.

COVID-19 is spread primarily by respiratory droplets contaminating surfaces and hands, transmitting the virus to another person [1], including healthcare workers, who have a high risk of contracting this infection, particularly when applying respiratory procedures. The first reports from Wuhan found 40 healthcare workers among the first consecutive 138 patients hospitalized [2].

Spinal cord injury (SCI) is characterized by significant respiratory compromise secondary to motor loss that requires respiratory support in the acute and chronic stages, especially in people with cervical SCI. The most common respiratory interventions that healthcare workers have used are non-invasive ventilation (NIV), to support the inspiratory muscles, and mechanical cough assist, to support cough weakness, extubation, and decannulation [3].

Healthcare workers must pay attention to the high-risk interventions that may expose them to contamination due to the dispersion of droplets when attending patients with COVID-19. Several respiratory techniques are used in acute patients, such as aerosol nebulization, mucous clearance, NIV, bronchoscopy, tracheal intubation, manual ventilation before intubation, tracheotomy, endotracheal aspiration, cardiopulmonary resuscitation and extubation [4].

The professionals who work with people with SCI and perform aerosol-generating procedures should take extreme care during and after their interventions. They should wear a waterproof long-sleeved gown, double non-sterile gloves, eye protection (with lateral protection), and a respirator that ensures a level of protection equal to or greater than N95/FFP2 [5].

Another essential precaution to reduce risk is the use of a mask by the patient. The cough, without wearing a mask, produces an exhaled air jet of 68 cm. This distance is reduced to 30 cm when wearing a surgical mask. If wearing an N95 mask, the distance is reduced to 15 cm. In the case of NIV via a full-face mask in a bi-level setting with a single limb circuit, the exhaled air-jet spreads through the mask's holes up to 91.6 cm, depending on the ventilatory parameters that the patients use [5].

Professionals should be aware of the exhalation distance, given the high risk of emitting large amounts of droplets and take the necessary precautions. Maintaining the health and strength of our healthcare workers is critical to avoiding the collapse of our healthcare system and providing the best care for our SCI patients.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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