Specific management of total laryngectomy patients during the COVID-19 pandemic in the Brazilian reality

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Since the first quarter of 2020, the world has been facing the Coronavirus disease-19 (COVID-19) pandemic, which is caused by the new SARS-Cov-2 coronavirus.[1] Despite the multiple procedures to prevent and control the spread of the disease that have been adopted for the general population, there are some groups that are more susceptible to the risk of contagion and that require specific care, such as total laryngectomy patients.[2]

This population is mostly composed by immunosuppressed elderly individuals with multiple comorbidities, in which a permanent tracheostomy allows the flow of unfiltered and humidified airflow directly into the lower airways, thus increasing the incidence of tracheobronchial infections[3] and, as a result, exposing them to the contagious nature of SARS-Cov-2 through respiratory droplets and aerosolization.[2]

A Heat and Moisture Exchange (HME) device is an option to mitigate the vulnerability of total laryngectomized patients to COVID-19. This device consists of a foam sponge impregnated with calcium chloride[4] placed over an airtight seal around the tracheal stoma.[5] These filters increase airflow resistance and also filter, heat and humidify the air, thus reducing the need to use external humidifiers and vaporizers and optimizing lung performance.[6,7] In addition, as the HME reduces of cough, sputum production and expectoration, it minimizes the risk of viral transmission by aerosolizing tracheal secretions.[2,5,8]

There are HME devices with specific bacterial and/or viral filters[8] that have pores smaller than 0.6 microns and are able to retain some pathogens (bacteria and viruses), acting as a biological barrier against pulmonary infections[9]. This is especially important in the context of the COVID-19 pandemic, as the SARS-Cov-2 particles have an estimated size of 0.12 microns.[10]

Although the effectiveness of heat and moisture exchangers in preventing COVID-19 has not yet been specifically tested, it is assumed that a HME device made of electrostatic filtering material, which has a higher percentage of viral filtration, would be the most suitable for use during the pandemic. [2,8,12] It should also be noted that the HME requires fixation accessories, such as disposable hypoallergenic adhesives [2] or specific silicone tracheostomy cannula.[11] All of these elements together have a prohibitive cost to most of total laryngectomized patients in the Brazilian context of socioeconomic inequality. In addition, the lack of a national health care policy for total laryngectomized patients makes access to pulmonary protection supplies difficult at a time of pandemic.

Some legal provisions support this population, such as the SAS/MS Ordinance No. 400, of 11/16/2019 [12], which establishes national guidelines for the care of people with ostomy; Law No. 13,146, of 6/11/2015[13], which institutes the Statute for Persons with Disabilities; and, more recently, Resolution 202/CIB/2019 [14], as established by the Secretary of State for Health of Santa Catarina and published on 09/26/2019, which was supported by the *Associação de Câncer de Boca e Garganta* (Mouth and Throat Cancer Association – ACBG, Brazil) to set the Guidelines for Health Care of Laryngectomized and/or Tracheostomized People and the standardization to distribute the necessary supplies for pulmonary and speech rehabilitation in that state, including HME devices. This is a pioneering initiative with a legal basis that should be followed as an example by other states of the federation. Given the difficulties in obtaining the supplies through administrative means, some users turn to the courts to ensure their supply. In 2019, for example, a user in Rio de Janeiro filed a demand against the state government and had his request granted, according to the magistrate's favorable understanding.[15]

The COVID-19 pandemic has highlighted both the need for specific management with total laryngectomy patients and the failure of public authorities to provide the necessary support to these users. The most recommended approach currently available for this population to ensure protection against aerosolization and inhalation of SARS-Cov-2 in the community environment, consists of three steps: 1) cover nose and mouth with surgical or tissue mask; 2) cover stoma with high collar clothing or scarf; 3) use HME with specific bacterial and/or viral filters.[8] When access to HME is not viable, total laryngectomy patients should be instructed to strictly follow the

other conducts. At the same time, this moment should also be used to give visibility to the needs and vulnerabilities of this group.

Author contribution

All authors contributed with the concept, writing and critical review.

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