Spirometry Outside the Hospital

La espirometría en el medio extrahospitalario

Dear Editor,

We carefully read the editorial by Burgos Rincón et al., titled Impact of the COVID-19 Pandemic on Lung Function Laboratories: Considerations for "Today" and the "Day After", recently published in Archivos de Bronconeumología.[1] The study considered important aspects, including the need to reorganize the lung function laboratories to recover the healthcare activity with sufficient security guarantees for both patients and professionals.[1] The study also stated that current COVID-19-related limitations warrant the need for respiratory teams to engage and explore innovative methods for lung function assessment.[1]

Home-based spirometry, particularly, those with on-screen encouragement and/or remote guidance by a technician, could be an alternative to conventional spirometry for management and telemonitoring of chronic respiratory diseases. Home-based spirometry transmits the lung function data from patients' home to a remote monitoring center (generally on a daily basis from previously trained patients) for a cautious evaluation by a respiratory function technician and interpretation by an expert physician, upholding the quality of the lung function assessment.[2,3] In 1997, Brudeman et al. described a home-based portable spirometry system to detect early signs of asthma deterioration, which improved asthma management, quality of life, and reduced emergency department visits and hospitalizations.[2] For chronic obstructive pulmonary disease (COPD), Rodriguez-Roisin et al. compared the results of home-based spirometries performed by more than 2000 patients with severe COPD, after face-to-face training, and in clinical settings (using the same spirometry device); they found a good agreement between in-clinic and home-based measurements.[3]

In contrast, telespirometry conducted by respiratory function technicians in outpatient clinics might be an acceptable alternative after the resolution of regional COVID-19 outbreaks. Telespirometry uses a portable spirometer and transmits the lung function data online from a primary care clinic to a specialized center for interpretation. Consequently, some national networks were implemented, with positive outcomes.[4–7] Results from the "RespiraNet Program" in Brazil and a Spanish study by Marina et al. showed that telespirometries performed by previously trained technicians, and analyzed and interpreted remotely by expert physicians, is a useful alternative to improve the diagnosis and management of chronic obstructive lung diseases.[4,5] Furthermore, another Spanish study by Masa et al. concluded that telespirometry performed by a remotely located technician controlling the spirometer computer online enhanced the quality and the reliability of the maneuver.[6] The "Alliance" study results showed that Italian general practitioners accepted telespirometry as an useful exploratory modality to improve the early diagnosis, monitoring, and management of COPD and asthma.[7]

Thus, home-based spirometry could decrease the burden on hospital services, avoid gathering of patients in high-risk facilities, and obviate the need for transportations of patients to central areas during the COVID-19 pandemic. In addition, after the pandemic, telespirometry could be a key add-on to improve the response to future demand related to currently postponed laboratory lung function tests.

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Conflict of Interest

None declared.

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