ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

https://patsjournal.org

Journal of the Pan African Thoracic Society

Article in Press

Letter to the Editor

Resumption of pulmonary function testing (Spirometry) at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, during the COVID-19 pandemic

Andargew Yohannes Ashamo[1], Amsalu Bekele Binegdie[1], Charles B. Sherman[2], Dawit Kebede Huluka[1], Hanan Yusuf Ahmed[1], Tewodros Haile Gebremariam[1]

[1]Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia, [2]Warren Alpert Medical School of Brown University, Barrington, Rhode Island, United States.

***Corresponding author:**
Andargew Yohannes Ashamo, Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia.

andargjhon@gmail.com

Received : 18 February 2021
Accepted : 08 March 2021
Published : 25 May 2021

DOI
10.25259/JPATS_6_2021

Quick Response Code:

Dear Editor,

Currently in Ethiopia, patients with a variety of suspected or known pulmonary diseases, including asthma, chronic obstructive pulmonary disease (COPD), and interstitial lung disease, are not being properly identified or monitored. This is due, in part, to a lack of pulmonary function testing because of concerns about possible aerosolized transmission of SARS-CoV-2. We believe that the paucity of pulmonary function testing and its subsequent adverse effect on those with lung disease is an unintended and underreported consequence of the COVID-19 pandemic. This concern is not unique to Ethiopia. A global survey of health-care professionals on the impact of COVID-19 on routine care for chronic diseases found that after diabetes, COPD and asthma were the conditions most significantly impacted by a reduction in health care due to COVID-19.[1-2]

Spirometry is an important measurement tool that not only assists with the diagnosis but also the management of those with respiratory diseases. Its use now is also important in identifying those with asthma and COPD who are at increased risk for severe COVID-19 and also in monitoring lung function for those recovering from the infection.[3] In the past 9 months, no spirometric testing has been conducted at Tikur Anbessa Specialized Hospital (TASH), the largest public tertiary hospital in the country located in Addis Ababa, Ethiopia, despite the availability of a well-equipped and well-staffed spirometry service.

To help identify the impact of COVID-19 on respiratory patients at TASH, we recently calculated the total number of spirometric tests performed based on the number of patients seen in the chest clinic from mid-March to mid-December 2019. We then estimated the number of spirometric tests that should have been performed during that same time interval in 2020. There were an estimated 396 missed spirometric tests which we believe may have been partially responsible for inadequate assessment and monitoring of respiratory disease status with possible outcome implications for our patients. A formal study is planned to further investigate this likelihood.

Shortly, we plan to resume our spirometry service, following strict operational protocols, designed to maintain patient and staff safety, which we have modified for low and middle-income countries (LMICs) from recommendations of the American Thoracic Society[4] and World Health Organization.[5] We think these guidelines can and should be used by other LMIC.

These suggestions include the following:

1. Spirometry testing must still be restricted and done only if absolutely necessary. Examples of essential spirometry tests may include but not limited to the diagnosis of dyspnea, monitoring and management of those with known lung disease, and pre-operative risk stratification.
2. Testing should exclude exercise testing, methacholine or bronchodilator challenge testing, and other high aerosol-generating procedures.
3. Spirometry acceptability and reproducibility criteria should follow ATS and ERS guidelines.[6]
4. A separate dedicated room should be utilized for testing with open windows and closed doors, when possible.
5. Patients should be scheduled at specific time intervals to avoid excess crowding; 6 feet distance between patients must be maintained at all times.
6. On arrival, patients should be screened with temperature checks and those with acute symptoms (self-reported and/or documented fever, cough, sore throat, dyspnea, or additional respiratory symptoms or myalgia or fatigue) should not be tested.
7. Patients awaiting COVID-19 test results and those who have tested positive for COVID-19 in the past 10 days[5] should not be tested.
8. Staff must wear personal protective equipment (N95 mask, face shield, gown, and gloves, if available) and patients should be unaccompanied and masked except when performing breathing maneuvers. Hand washing by staff and patients with either soap and water or hand sanitizer (>70% alcohol) before and after testing should be encouraged.
9. Mouthpieces, filters, nose clips, and other consumables should be changed after each patient and properly disposed of.
10. The spirometer, cables, and high touch surfaces should be disinfected with sanitizing wipes after each test.

In conclusion, we encourage all institutions with pulmonary function capability to resume essential testing using the safety guidelines as outlined.

Acknowledgments

The authors would like to thank the East African Training Initiative (eatiethiopia.org), Addis Ababa University, Addis Ababa, Ethiopia, Vital Strategies, New York City, New York, USA, and the Swiss Lung Foundation, Zurich, Switzerland, for their continuous support of our research work.

We would also like to thank our nursing staff for offering the very best care to our patients.

Finally, we would like to thank the NIHR Global Health Research Unit on Lung Health and TB in Africa at LSTM ("IMPALA," grant number 16/136/35) for helping to make this research possible. IMPALA was commissioned by the National Institute of Health Research using Official Development Assistance funding. The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, the National Institute for Health Research, or the Department of Health.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Huang I, Lim MA, Pranata R. Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia; A systematic review, meta-analysis, and meta-regression. Diabetes Metab Syndr Clin Res Rev 2020;14:e395-403.
2. Chudasama YV, Gillies CL, Zaccardi F, Coles B, Davies MJ, Seidu S, Khunti K, *et al*. Diabetes and metabolic syndrome. Clin Res Rev 2020;14:965-7.
3. Martinez-Alvarez M, Jarde A, Usuf E, Brotherton H, Bittaye M, Samateh Al, *et al*. COVID-19 pandemic in West Africa. Lancet Glob Health 2020;8:e631-2.
4. Wilson KC, Kaminsky DA, Michaud G, Sharma S, Nici L, Folz RJ, *et al*. Restoring pulmonary and sleep services as the COVID-19 pandemic. Lessons from an association of pulmonary, critical care, and sleep division directors and American thoracic society-coordinated task force. Ann Am Thorac Soc 2020;17:1343-51.
5. World Health Organization. Criteria for Releasing COVID-19 Patients from Isolation. Geneva: World Health Organization; 2020. Available from: https://www.who.int/news-room/commentaries/detail/criteria-for-releasing-covid-19-patients-from-isolation. [Last accessed on 2021 Feb 27].
6. Graham BL, Steenbruggen I, Miller MR, Barjaktarevic IZ, Cooper BG, Hall GL, *et al*. Standardization of spirometry 2019 update an official American thoracic society and European respiratory society technical statement. Am J Respir Crit Care Med 2019;200:e70-88.

How to cite this article: Ashamo AY, Binegdie AB, Sherman CB, Huluka DK, Ahmed HY, Gebremariam TH. Resumption of pulmonary function testing (Spirometry) at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, during the COVID-19 pandemic. J Pan Afr Thorac Soc 2021;2(2):75-6.