05.02 - Monitoring airway disease

54769
Prevalence of small airways obstruction (SAO) in post TB COPD patients: An Observational Indian multicentric study

COPD, Chronic diseases, Spirometry

D. Ghorpade[1], S. Bardapurkar[2], S. Bardapurkar[2], V. V. Veerapaneni[3], V. R. Veerapaneni[3], K. Panchal[4], N. Aleemuddin[5], J. Unnithan[6], A. K. Singh[7], P. Bhattacharyya[8], G. M. Venkata Kasiram[9], S. Dalal[10], G. Malkapuram[3], V. Bhaskar[3], A. Bhosale[10], M. K. Gupta[11], V. Kubal[12], H. Shamim[13], N. Velayuthaswamy[6], S. Krishnamurthy[6], N. Srinivasan[6], S. Madas[1], A. Sabale[14], R. Swami[1], S. Bhalare[1], N. Navale[1], D. Dhumal[1], N. Koli[1], M. Lopez[15], S. Mohanasundaram[15], J. Gogtay[15], R. Shah[15], S. Chauthmal[1], S. Salvi[16]

[1]Chest Research and Training Pvt Ltd - Pune (Maharashtra) (India), [2]Shree Nursing Home - Aurangabad (Maharashtra) (India), [3]Swasa Hospital - Hyderabad (Telangana (India), [4]Swastik Lungs Care & Allergy Clinic - Ahmedabad(Gujarat) (India), [5]Chest Care clinic - Hyderabad (Telangana (India), [6]Institute of Lung Care & Research, Hindusthan Hospital - Coimbatore (Tamil Nadu) (India), [7]Chandan Hospital - Lucknow (Uttar Pradesh) (India), [8]Institute of Pulmocare & Research - Kolkatta (West Bengal) (India), [9]Aditya Multi-speciality Hospital - Guntur (Tamil Nadu) (India), [10]Kalyan Hospital - Vadodara (Gujarat) (India), [11]AANCH Hospital - Jaipur (Rajasthan) (India), [12]The Diagnostic Hub - Mumbai (Maharashtra) (India), [13]Chandan Hospital - Lucknow (India), [14]Pulmocare Research and Education (PURE) Foundation - Pune (Maharashtra) (India), [15]Cipla Pvt Ltd - Mumbai (Maharashtra) (India), [16]Chest Research and Training Pvt Ltd and Oulmocare Research and Education (PURE) Foundation - Pune (Maharashtra) (India)

Background: Among the estimated 155 million TB survivors globally 35-40 million are from India (Global Burden of Disease 2021). Post TB COPD is the most common sequel of pulmonary TB. We aimed to study the prevalence of small airways obstruction (SAO) among post TB COPD patients in India.

Methods: 181 post-TB-COPD patients (Post BD FEV1/FVC≤70%), were recruited from 12 respiratory clinics across 7 states in India. Demographics, symptoms, CAT score, spirometry and lung oscillometry were captured. Small airways obstruction was defined as FEF25%-75% <65% predicted on spirometry (ndd Easy one, Switzerland) and R5-R20 ≤ 0.7 cmH2O/L/s on oscillometry (Antlia, iCALTECH, India).

Results: A total of 181 Post-TB patients, who were declared as cured, but presented to the respiratory clinic with various symptoms took part in the study, and comprised 72.9% males, with a mean age of 63.7 ± 10.8 years. In addition, 45.9% of the post TB COPD patients were smokers. Proportion of Symptoms, values of spirometry, oscillometry and prevalence of SAO in post TB patients are presented in Table 1.

Table 1. Proportion of symptoms, values of CAT Score, spirometry, lung oscillometry parameters and prevalence of SAO in post TB-COPD patients

Parameters	Values
TB cured duration (years) (Mean ± SD)	24.0 ± 15.1
Persistent Cough (%)	79.5%
Shortness of breath (%)	98.9%
Wheeze (%)	62.9%
Chest Tightness (%)	46.9%
COPD Assessment Test (CAT) (Mean ± SD)	16.5 ± 6.5
FEF25-75 <65% Predicted	99%
R5-R20 > 0.7 cmH2O/L/sec	98%
FVC - Pre (L) (Mean ± SD)	1.7 ± 0.6
FVC - Pre % pred (Mean ± SD)	57.3 ± 18.7
FEV1 - Pre (L) (Mean ± SD)	0.9 ± 0.4
FEV1 - Pre % pred (Mean ± SD)	40.9 ± 16.3
FEV1/FVC - Pre (%)(Mean ± SD)	55.9 ± 12.6
FEF25%-75% Pre % pred (Mean ± SD)	22.0 ± 12.0
R5 Pre (cmH2O/L/sec) (Median, IQR)	5.43 (4.28, 7.27)
R5 - R20 Pre (cmH2O/L/sec) (Median, IQR)	2.37 (1.60, 3.09)
X5 Pre (cmH2O/L/sec) (Median, IQR)	-3.87 (-5.16, -2.07)
AX Pre (cmH2O/L/sec) (Median, IQR)	25.79 (11.98, 43.21)

Conclusion: Almost all Post TB COPD patients show SAO on spirometry (99%) as well as on oscillometry (98%), which may have significant implications for appropriate inhalation therapy.