Burden of small airways dysfunction (SAD) asthma defined by oscillometry and spirometry among 1334 asthmatics across 5 centers in India

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Background: Small airways dysfunction (SAD)-asthma is an emerging phenotype of asthma that has distinct clinical manifestations with important therapeutic implications. We aimed to study the prevalence of SAD among Indian asthmatics using lung oscillometry and spirometry.

Methods: Pulmonologists from 5 centres across India, who were members of the International Network for Lung Oscillometry Research (ARISE) took part in the study. Oscillometry was performed using the Antlia FOT (iCALTECH, Bangalore. India) and spirometry was performed using devices meeting ATS/ERS standards, among asthmatic patients visiting their clinics. SAD was defined using different cut-offs for R5-R20 and <65% predicted for FEF25%-75%.

Results: Out of data obtained from 1969 asthmatic patients, 1334 were eligible for the final analysis. The prevalence of SAD using cut-off values of ≥ 1, > 0.9, > 0.8 and > 0.7 cmH2O/L/sec for R5-R20 were 60.6%, 65.8%, 72.2% and 77.4% respectively, while using FEF25%-75% <65% it was 61.8%. The overall concordance between oscillometry and spirometry was 62% (Oscillo +ve, Spiro -ve: 18.4%; Oscillo -ve, Spiro +ve: 19.5%).

Conclusion: The burden of SAD-Asthma among 1334 asthmatics visiting clinics across 5 centres in India was 60% using the cut-off of R5-R20 of ≥1 cmH2O/L/sec.