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Title: The FEV₁/TLC ratio: Can it differentiate between normal subjects and patients with airflow obstruction and restrictive ventilatory defects - a preliminary analysis?

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Body: A reduced FEV₁ is as a marker of airflow obstruction where TLC is normal or increased, whilst both TLC and FEV₁ are reduced in a restrictive ventilatory defect. Aim: To determine the usefulness of the FEV₁/TLC ratio in determining the presence of an obstructive or restrictive ventilatory defect. Methods: Lung function measurements of FEV₁, VC and TLC were reviewed and divided into four principle groups - 1) normal (both FEV₁ and TLC > -1.64 SR), 2) airways obstruction (FEV₁%VC < -1.64SR, TLC normal or > +1.65SR), 3) restrictive defect (TLC < -1.65 SR) and 4) a mixed obstructive-restrictive defect. Results: The group (n = 806; age 20 - 97 yrs) and sub-group analysis is shown in the table.

Group and sub-group analysis of data

	n	FEV ₁	VC	FEV ₁ /TLC
Entire Group	806	2.85 ± 0.12	3.15 ± 0.04	0.52 ± 0.01
1: Normal	175	3.85 ± 0.07	4.35 ± 0.10	0.68 ± 0.01
2: Airways Obstruction	415	1.65 ± 0.06	3.75 ± 0.05	0.29 ± 0.01
3: Restrictive Defect	174	1.95 ± 0.07	2.55 ± 0.03	0.52 ± 0.01
4: Mixed Defect	42	1.65 ± 0.12	2.65 ± 0.17	0.27 ± 0.02

Data are given as mean ± SEM.

The FEV₁/TLC ratio was significantly lower (p < 0.01) in groups 2, 3 and 4 when compared to group 1. There was no significant difference between groups 2 and 4. On subdividing group 2 into reversible and non-reversible airflow obstruction and group 3 into intrathoracic and extrathoracic restrictive defects (based on TL_{co} and K_{co}), no significant differences were observed. Conclusion: In this preliminary analysis, the FEV₁/TLC can differentiate between normal subjects and those with a restrictive and an obstructive ventilatory defect.