ERS Annual Meeting
In active and former smokers with CT detected emphysema but without airway obstruction, the presence of an abnormal DLco is associated with a worse clinical presentation

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**Rationale:**
Little is known about the impact of an abnormal DLco (<80%) and the clinical presentation of smokers with radiologically detected emphysema but without airway obstruction.

**Objective:**
To compare clinical and functional characteristics of active or former smokers without airway obstruction with or without emphysema and/or abnormal DLco.

**Methods:**
This is an observational study of active or former smokers that underwent a low dose CT scan (LDCT), pulmonary function tests, COPD assessment test (CAT) and 6 minute walking distance test (6MWD). Patients were classified in 3 groups depending on the presence of visually detected radiological emphysema and DLco values (no-emphysema; emphysema with DLco>80%; emphysema with DLco<80%).
RESULTS

168 patients were analyzed.

Patients with emphysema had a higher CAT score (7.96 vs 5.95 p=0.002) and a greater fall in SpO2% post-6MWD (22.7% vs 4.2%, p=0.004).

In those with an abnormal DLco, CAT score are even higher (4.78 vs 9.36, p=0.01) and a greater % having a fall in the SpO2% (96.3% vs 94.4%, p=0.007).

In this group there were more active smokers (69% vs. 50%, p=0.025), with lower mean predicted FEV₁ (96.7 vs 105.2%, p=0.004) and higher residual volume/total lung capacity ratio (37.05 vs 32.44, p:0.05).
CONCLUSIONS

In active or former smokers with emphysema, the presence of an abnormal DLco determine a worse clinical and physiological presentation.

The present findings gives value to the determination of DLco in smokers without airway obstruction
ARC EN EPOCII
Annual Review of Congresses EN EPOC
LO NUEVO EN EPOC PRESENTADO EN ATS, ERS
Y SEPAR CONTADO DE UN MODO DIFERENTE
Madrid, 21 y 22 de Octubre de 2016