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Title: Association between serum levels of clara cell secretory protein and lung function in adults from ECRHS

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Body: The 16-kD Clara cell secretory protein (CC16) has anti-inflammatory properties and protective effects from oxidative stress on the respiratory tract and has been proposed as a biological marker of pulmonary health. Whether CC16 is associated with lung function and airflow limitation in the general population remains unknown. We measured CC16 in serum samples of 851 participants (mean age 41 yrs; 51% women) of 3 Spanish ECRHS centres using an immunoassay. Lung function parameters (FEV1% and FVC% predicted and FEV1/FVC), airflow limitation (AL) defined by Gold criteria (FEV1/FVC<0.70) were considered. All the analyses were adjusted for center, sex, age, smoking, pack-years, body mass index (BMI), and height. Mean CC16 level was 5.8 (sd=2.9), ranging from 0.4 to 19 µg/l. FEV1% predicted and FEV1/FVC increased with increasing CC16 levels.

Lung function (dependent var, n=851)	Adjusted* β(95%CI)	p
FEV1% pred	1.85 (0.87, 2.83)	<0.001
FVC% pred	0.83 (-0.03, 1.70)	0.06
FEV1/FVC	0.77 (0.30, 1.23)	0.001

* Estimates from linear regression models, adjusted for centre, age, BMI, smoke, pack-years (sex and height for FEV1/FVC)

This association was stronger in asthmatics (2.6% increase (95% CI 0.6-4.5) in FEV1/FVC) as compared to non-asthmatics (0.6%; CI 0.1-1.0) (p for interaction 0.01). CC16 levels were lower in subjects with moderate/severe AL (4.1 µg/l, p from multivariate multinomial regression=0.04), but not in those with mild AL (5.7 µg/l, p=0.9) compared to subjects with no AL (5.9 µg/l). This study shows that reduced CC16 levels are associated with lower lung function and moderate/severe airflow limitation in the general population.
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