

Publication

Circulating alpha1-antitrypsin in the general population : determinants and association with lung function

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BACKGROUND: Severe alpha1-antitrypsin (AAT) deficiency associated with low AAT blood concentrations is an established genetic COPD risk factor. Less is known about the respiratory health impact of variation in AAT serum concentrations in the general population. We cross-sectionally investigated correlates of circulating AAT concentrations and its association with FEV1. **METHODS:** In 5187 adults (2669 females) with high-sensitive c-reactive protein (CRP) levels $< \text{or} = 10 \text{ mg/l}$ from the population-based Swiss SAPALDIA cohort, blood was collected at the time of follow-up examination for measuring serum AAT and CRP. **RESULTS:** Female gender, hormone intake, systolic blood pressure, age in men and in postmenopausal women, as well as active and passive smoking were positively, whereas alcohol intake and BMI inversely correlated with serum AAT levels, independent of CRP adjustment. We observed an inverse association of AAT with FEV1 in the total study population ($p < 0.001$), that disappeared after adjustment for CRP ($p = 0.28$). In addition, the AAT and FEV1 association was modified by gender, menopausal status in women, and smoking. **CONCLUSION:** The results of this population-based study reflect a complex interrelationship between tobacco exposure, gender related factors, circulating AAT, systemic inflammatory status and lung function.

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