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Title: Chronic mucus hypersecretion in asthma: Relation to smoking status and disease severity

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Body: Background Chronic mucus hypersecretion occurs in chronic asthma, but the effects of smoking status and disease severity on this symptom are not clearly established. We assessed the prevalence of chronic mucus hypersecretion in patients with asthma recruited to the Glasgow COPD and Asthma Biomarker study. Methods One hundred and twenty subjects with asthma, smokers and never smokers of different GINA severity and fifty-four COPD subjects of different GOLD severity were recruited. Assessments included demographics, history of chronic cough and sputum production and spirometry. Results Baseline demographic and lung function data in the smokers with asthma and never smokers with asthma were similar. The COPD group were older and had a higher pack year history than the asthmatic group. Chronic mucus hypersecretion was strongly associated with smoking in the whole asthma group (Chi-sq=22.8, p<0.001). The proportion of patients with asthma and COPD of different disease severity and smoking status giving a history of chronic mucus hypersecretion is shown in Table 1.

Table 1

	Mild	Moderate	Severe	p Fisher's Exact test
Smokers with asthma (n=61)	10/20 (50.0%)	6/18 (33.3%)	18/23 (78.3%)	0.012
Never smokers with asthma (n=59)	1/19 (05.3%)	3/18 (16.7%)	8/22 (36.4%)	0.045
COPD (n=54)	8/14 (57.1%)	15/23 (65.2%)	8/16 (50.0%)	0.641

Chronic mucus hypersecretion increased with asthma severity overall (p=0.003) and in the smokers and never smokers with asthma, but not in COPD. Conclusions Chronic mucus hypersecretion is a common symptom in adults with chronic asthma particularly in smokers and patients with severe disease. This finding suggests that novel treatments targeting this symptom may be of value in the management of asthma.