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Title: Atrial fibrillation and stroke risk in relation to COPD and chronic productive cough

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Body: Background: Chronic productive cough (CPC) predicts incident COPD and is a prognostic factor in COPD. Concomitant cardiovascular disease is common in COPD but the relationship between atrial fibrillation (AF), risk for stroke in AF, COPD and CPC in population-based cohorts is not well described Aim: To study the prevalence of AF in subjects with and without COPD and CPC, respectively, and the risk for stroke in AF assessed by CHA₂DS₂-VASc Score. Methods: The population-based OLIN COPD study in Sweden was recruited in 2002-04; 993 subjects with FEV₁/FVC ≤0.70 (COPD) and 993 age- and gender-matched non-COPD subjects. The study population has been invited to annual examinations, and in 2005 complete data on interview, ECG and spirometry was collected from 1603 participants. Results: CPC was reported by 42.1% in COPD vs. 23.0% in non-COPD, and was more common in men than in women (31.4% vs. 26.8%, p=0.043). The proportion of smokers was higher among those with CPC compared to those without CPC (33.4% vs. 15.3%, p<0.001). The overall prevalence of AF was 3.4%, with no significant difference between COPD and non-COPD (3.2% vs. 3.5%). AF was more common in subjects with CPC than in subjects without CPC (5.5% vs. 2.6%, p=0.003), and those with CPC had lower mean FEV₁/FVC compared to those without CPC (0.69 vs. 0.75, p<0.001). Stroke risk in AF, CHA₂DS₂-VASc Score was higher among subjects with AF and CPC compared to in those without CPC (3.48 vs 2.41, p=0.017), and a significant difference remained when age was excluded from the CHA₂DS₂-VASc Score (1.93 vs. 1.17, p=0.036). Conclusion: CPC was related to increased prevalence of AF, and the risk for stroke in AF seems to increase with concomitant CPC.