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Title: Factors associated with COPD exacerbation frequency in a UK primary care cohort

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Body: Aim: To determine factors associated with frequency of COPD exacerbations in primary care. Method: Retrospective cohort study of COPD patients identified from the UK Clinical Practice Research Datalink, aged ≥40years, with ≥1 COPD diagnosis ≥01/04/2009, FEV_1/FVC <0.7 and ≥12 mo data pre/post cohort entry. Moderate (diagnoses or concurrent Rx ATB+ OCS) or Severe (hospital admission) exacerbations were defined 12mo pre/post cohort entry. MRC dyspnoea score, GOLD stage of airflow limitation nearest to cohort entry, and comorbidities any time were flagged. Logistic regression produced odds ratios for frequent (≥2) vs. infrequent (0,1) exacerbations over 12mo follow-up. Results: 58,589 COPD patients were included: 47% females, mean age 69yrs, mean FEV_1 60% pred. Over 12mo follow-up, the rate of moderate-to-severe exacerbations was 0.89/person/year; 23% (n=13,351) reported ≥2 exacerbations. Odds of ≥2 exacerbations increased with prior history of exacerbations (OR 8.50 [95%CI:8.00-9.03] for ≥2 episodes, OR 2.64 [95%CI: 2.50-2.79] for 1 episode), increasing airflow limitation (from OR 1.16 [95%CI: 1.08-1.25] for GOLD II, to OR 2.01 [95%CI: 1.80-2.26] for GOLD IV), increasing dyspnoea grade (from OR 1.30 [95%CI: 1.21-1.41] for MRC 2 to OR 2.49 [95%CI: 2.17-2.85] for MRC5), and prevalent comorbidities (history of asthma, cancer, depression, and congestive heart failure). Conclusion: In this UK primary care cohort, prior exacerbation history together with increasing airflow limitation and dyspnoea were the strongest risk factors for future frequent exacerbations. Funded by GlaxoSmithKline (WEUSKOP5903 study).