

status and quantity, BMI, initial spirometry, IC, diffusion capacity and inhaled corticosteroid use. Significantly less exacerbations were observed during summer.

P1077

COPD exacerbations, colds and persistently high airway inflammation after 7 days

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Patients presenting with symptoms of a common cold at COPD exacerbation are known to have a prolonged recovery time and higher airway inflammation at onset. However the evolution of the airway inflammation over time has not been described.

73 Exacerbations were sampled prior to treatment with antibiotics and steroids in 73 patients with a mean(SD) age of 69(8) yrs, baseline FEV₁ 1.08(0.47) l, 44.9(18.1) % predicted, FEV₁/FVC ratio of 47(14)%, and mean (SD) smoking history of 48.1(34.9) pack years, 29.4% were active smokers. They were reviewed after 7, 14 and 35 days. Patients presenting with symptoms of a common cold at exacerbation onset, had significantly higher levels of sputum IL-6 than patients without a cold, mean(SD) sputum IL-6 at onset was 2.24(0.43) versus 1.99(0.52) log₁₀ pg/ml, p=0.04. Seven days after onset these patients still had significantly higher levels of sputum IL-6 than patients presenting without a cold at onset, mean(SD) sputum IL-6 at day 7 was 2.16(0.48) vs 1.70(0.58) log₁₀ pg/ml, p=0.003. In a multivariate analysis, this relationship between a cold at exacerbation onset and persistently high sputum IL-6 after 7 days remained significant (p=0.016), independent of %FEV₁, active smoking, exacerbation frequency, sputum bacterial load in the stable state and at exacerbation onset.

A cold at onset of COPD exacerbation is associated with persistently higher airway inflammation after 7 days, independent of disease severity, bacterial colonization, active smoking and exacerbation frequency. Colds contribute significantly to the morbidity associated with COPD exacerbations.

P1078

The impact of frequent exacerbations on air-trapping, dyspnea, exercise capacity and quality of life in stable COPD

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We aimed to investigate the effect of frequent exacerbations on air-trapping, and to assess the impact of air-trapping on dyspnea, exercise capacity and quality of life in stable COPD patients.

36 stable COPD patients [17 with frequent exacerbation (defined as ≥ 3 over the previous year) and 19 with infrequent exacerbation] were recruited. Patients underwent full lung function testing, arterial blood gases, High-resolution CT (HRCT), dyspnea scores (Baseline Dyspnea Index and Modified Borg Scale), a 6 minute walk test (6MWD), and the SGRQ (Turkish version).

Patients with frequent and infrequent exacerbations were indistinguishable in terms of their age, smoking, body mass index and FEV₁. 82.3% of patients with frequent exacerbations and 47.4% of infrequent showed evidence of air-trapping on HRCT (p=0.04). Air-trapping (as measured by RV/TLC) increased in frequent exacerbation group (mean: 57 \pm 10%) as compared to infrequent (49 \pm 9%, p=0.01). There was a positive correlation between radiological and functional findings of air-trapping (r=0.53, p=0.01). Multiple regression analysis showed that frequent exacerbation and air-trapping were the best predictors for both dyspnea scales (r²=0.48, p<0.001) and 6MWD (r²=0.5, p=0.02). FEV₁ and maximal inspiratory pressure were additional independent predictive factors for 6MWD. SGRQ scores were not correlated with air-trapping.

In conclusion, COPD patients with frequent exacerbation demonstrated increased air-trapping as compared to with infrequent exacerbation. Frequent exacerbations and successive increased air-trapping may be major factors contributing to both increased dyspnea and exercise capacity limitation in stable COPD.

P1079

Acute exacerbations of COPD (AECOPD) in the emergency department (ED): hospitalization criteria versus predictors of death

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To identify predictors of outcome and describe pathways of care in patients visiting the ED with a diagnosis of AECOPD at entry, a prospective study was conducted in 103 French centres. 712 consecutive patients were recruited and the following variables were recorded: socio-demographic and anthropometric characteristics, smoking history and occupational risk factors, history of COPD (dyspnoea MRC grade at steady state, age at first symptoms, usual treatment and follow-up), clinical signs of severity (lower limb oedema, use of inspiratory and expiratory accessory muscles, confusion, cyanosis, asterixis), heart and respiratory rates, body temperature, pulsed oximetry. Outcomes were assessed: (i) at discharge from the ED (death

in the ED, discharge home, hospitalization in an intensive care unit, hospitalization in a medical ward); and (ii) at the end of hospital stay (death during hospital stay, discharge home, discharge to an intermediate care facility). 628 patients were hospitalized and 59 died during hospital stay. Independent predictors of death during hospital stay in multivariate logistic regression analysis were age (\geq or < 70 years), number of clinical signs of severity (0, 1 or 2, 3 and more) and dyspnoea grade at steady state (0-1, 2-3, 4-5). Factors independently associated with the decision to hospitalize were age, heart rate and respiratory rate. Thus, criteria used to decide hospitalization are different from predictors of death, suggesting the need to rationalize hospitalization criteria by developing prediction rules. Supported by: SPLF, SAMU de France, SFMU, INSERM U700, Boehringer Ingelheim France et Pfizer.

P1080

Pilot study to assess short-term effect of influenza vaccination on exacerbations of COPD

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Fear of suffering a vaccine induced disease exacerbation is a commonly stated reason for not taking up the influenza vaccination in patients with chronic airway diseases. This issue has been addressed in patients with asthma (Lancet 1998;351:326-31) but not in COPD.

Method: We undertook a retrospective audit of patient records in primary care to evaluate COPD exacerbations in patients in the two weeks post influenza vaccination (active/post vaccination group), comparing these with exacerbation rates in COPD patients awaiting vaccination appointments at the same time period (control / prevaccination group). Using COPD registers from 3 general practices in Chesterfield, records of 226 patients vaccinated in 2005 were analysed. 50 pairs were constructed, matched for age, sex and GOLD severity group. There was a minimum of 2 weeks between the vaccination date of the active member of each pair and that of the control. Exacerbation rates were determined from clinical records. The prescription of steroids and/or antibiotics defined an exacerbation.

Results: Table 1 shows the number of exacerbations in the 2 weeks post vaccination in the active group compared with the number of exacerbations in the pre-vaccine control group.

	Exacerbations	No exacerbations
Pre vaccination	8	42
Post vaccination	7	41

There was no significant difference between the two groups. This retrospective audit supports the view that influenza vaccine does not precipitate COPD exacerbations. However this conclusion is limited by small sample size and the retrospective nature of the audit. A prospective study to address this question in this important population is needed.

P1081

Inappropriate fractional inspired oxygen concentration (FiO₂) in pre-hospital and A&E management of acute exacerbations of COPD

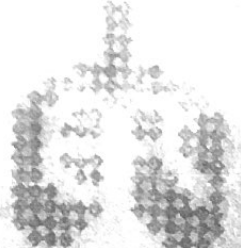
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Introduction: High flow oxygen administered to patients with chronic obstructive pulmonary disease (COPD) can exacerbate respiratory acidosis. Current management guidelines recommend a FiO₂ \leq 28% for COPD patients pending the result of an arterial blood gas (ABG). However, many COPD patients admitted acutely are initially treated with a higher than recommended FiO₂ en route to hospital and in the accident and emergency (A&E) department.

Method: We prospectively studied 100 patients presenting to A&E with a diagnosis of acute exacerbation of COPD. We collected data on FiO₂ and pH at presentation; subsequent need for non-invasive ventilation (NIV) and/or invasive mechanical ventilation; and mortality during admission.

Results: Respiratory acidosis was present in 25% of patients on initial ABG. 60% of acidotic patients were treated with a FiO₂ 100% at presentation and the FiO₂ was not documented in a further 28% of these patients. 52% of the acidotic patients were treated with NIV, 4% were intubated, and 24% died during their admission. Of those who died, 50% had received FiO₂ 100%, and 33% did not have their initial FiO₂ documented.

Conclusions: Many COPD patients admitted acutely are treated with an inappropriately high FiO₂ thus potentiating respiratory acidosis. Acidosis is an adverse prognostic sign with over 50% of the acidotic patients in our study requiring ventilatory support. The mortality rate in our cohort of acidotic patients was 24% and 50% of these patients were initially treated with FiO₂ 100%. Guidelines on oxygen therapy in COPD patients should be implemented in the acute care setting to minimise acidosis related morbidity and mortality.



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