Conclusions Age, admission NEWS and blood parameters differed significantly between those who were managed on the ward with AECOPD and those who either died or whose care was escalated to ICU. This could form the basis for a prediction score, automatically calculable on admission to hospital using available technology to highlight those patients judged at greatest risk of deterioration.

REFERENCE

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S32 THE RELATIONSHIP BETWEEN EXERCISE CAPACITY AND INFLAMMATORY MARKERS AT COPD EXACERBATION

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Introduction Chronic obstructive pulmonary disease (COPD) is characterised by breathlessness, fatigue and reduced daily activity which worsens acutely at exacerbation. A three year observational study has shown a reduction in 6MWT over time that correlates with increase over the same period in plasma Interleukin-6 and C-reactive protein (CRP) levels (Ferrari, Tanni *et al.* 2013). We therefore investigated whether acute changes in 6MWT at exacerbation were associated with changes in systemic inflammatory markers and the perception of fatigue.

Methods Forty four patients from the London COPD cohort who had a mean age of ($\pm$ SD) 71($\pm$ 7) years; FEV₁ 52($\pm$ 17)% predicted; male gender 72% and still smoking 30% were asked to performed a 6MWT and completed a FACIT-F questionnaire when stable (baseline) and 3 days after first presenting with the exacerbation. Blood was drawn for assay of CRP and fibrinogen.

6MWT was performed according to ATS protocols. Exacerbations were defined by our usual symptomatic criteria (Seemungal, Donaldson *et al.* 1998). High scores in the FACIT-F questionnaire indicate low fatigue. Stable COPD was defined as having no exacerbations in the preceding six weeks or subsequent two weeks. Data was analysed by paired t-test, Wilcoxon sign rank test and Spearman correlation.

Results The 6MWT was significantly lower at 3 day post exacerbation compared to baseline measurements [414(SD $\pm$ 111) vs 359(SD $\pm$ 1222) metres; $p \leq 0.001$] and fatigue was worse [37 (9.3) vs 35(9.1); $p = 0.037$]. Inflammatory markers were significantly higher at the exacerbation recovery visit compared to stable state, CRP [median (IQR)] [3.0 (1–8) vs 8.0(3–37) mg/L; $p < 0.001$] and fibrinogen [3.5 (3–4) vs 4.3 (3–5) g/l; $p = 0.003$].

The fall in exercise capacity from baseline to exacerbation recovery visit was positively correlated with greater increases in CRP [$\rho = -0.41$; $p = 0.021$] (Figure 1A) and in fibrinogen [$\rho = -0.42$, $p = 0.025$] (Figure 1B). Also, the falls in exercise capacity between baseline and exacerbation were associated with increased in fatigue levels [$r = 0.44$; $p = 0.013$] (Figure 1C).

Conclusions These findings suggest that changes in inflammatory markers and other metabolites in the body at exacerbation altering the perception of fatigue and reducing the patient exercise capacity.

S33 SPUTUM COLOUR IN THE LIGHT OF THE HEALTH RELATED QUALITY OF LIFE, AIRWAYS AND SYSTEMIC BIOMARKERS IN EXACERBATIONS OF COPD

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Abstract S32 Figure 1 The correlation between six minute walk test (6MWT) and inflammatory markers (1A) CRP, (1B) fibrinogen and (1C) fatigue