Title: Increased baseline IL-6 is associated with health status impairment after three years in COPD patients

Body: Previous study showed that Interleukin-6 (IL-6) increased significantly after 3 years and it was associated with mortality. However, the cutoff point of IL-6 associated with mortality and its association with other outcomes in COPD is unclear. Thus, the aim of this study is to evaluate association between values of IL-6 and disease outcome markers over time. A cohort of 77 outpatients with stable COPD was evaluated at baseline, and 53 (mean FEV1, 56% predicted) were included in the prospective study. We evaluated Interleukin-6 (IL-6), Modified Medical Research Council dyspnea scale (MMRC), six-minute walking distance (6MWD), body mass index (BMI), and Saint George's Respiratory Questionnaire (SGRQ) at baseline and after three years. Plasma concentration of IL-6 was measured by high sensitivity ELISA (BioSource International Inc, Ca, USA). The ROC curve showed that the cutoff for baseline IL-6, associated with mortality, in the cohort of 77 patients was $\geq 1.28$ pg/ml (sensitivity 71.4%, specificity 72.3% and the area under the curve 0.70). Modifications over three years in the studied variables were included in a multiple logistic regression analysis to verify association with IL-6 $\geq 1.28$ pg/ml. Modifications in SGRQ total score over three years were associated with increased values of IL-6 [Odds 0.07 (95% CI 0.01-0.14); p=0.02]. In conclusion, higher values of IL-6 at baseline were associated with the impairment of health status after three years.