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Title: Acute effect of erdosteine on preventing recurrence of exacerbation in COPD patients after hospital discharge

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Body: Introduction Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are frequent cause of hospital admission and associated to high risk of recurrence. Preventing exacerbations is a key treatment goal. Objectives To evaluate the effect of erdosteine, an anti-oxidant mucolytic agent, given on acute setting during hospitalization for severe AECOPD to prevent subsequent recurrence of exacerbations. Methods 15 COPD patients hospitalized for severe AECOPD randomly received erdosteine 900mg daily or placebo for 10 days in combination with standard treatment. Recurrence of exacerbations after hospital discharge was assessed at 30 and 60 days. Data were correlated to pulmonary function indices and serum C-reactive protein (CRP) measured at 10 and 30 days after hospitalization. Results Table 1. The mean exacerbation recurrence was significantly higher ($p < 0.05$) in the placebo group. The recurrence of exacerbation was inversely correlated to FEF25-75% value at 10d ($p < 0.05$), 30d ($p < 0.05$) and positively correlated to serum CRP marker of systemic inflammation at 10d ($p < 0.05$) and 30d ($p < 0.05$). Conclusions Treatment with erdosteine plus standard therapy in severe AECOPD reduced their early recurrence after hospital discharge. These results were related to improvement in small airway obstruction and decrease of serum CRP at recovery from AECOPD. Mucolytic agents with relevant antioxidant activity may improve clinical outcome after AECOPD by reducing the burst of airway inflammation.

Table 1

Treatment	CRP mg/100ml		FEF25-75% mL/sec		No. exacerbations	
	10 d	30 d	10 d	30 d	30 d	60 d
Erdosteine	0.38	0.29	619	811	0	0.25*
Placebo	1.36	0.67	375	472	0	1.14

Data are mean values. * $p < 0.05$ vs. placebo