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**Title:** Roflumilast significantly decreased inflammatory biomarkers in induced sputum in current smokers patients with severe chronic obstructive pulmonary disease

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**Body:** The aim our study was identify the impact of ROFLUMILAST to inflammatory biomarkers in induced sputum in current smokers patients with severe COPD. All patients were divided in two groups:1)24 patients have received BUDESONIDE/FORMOTEROL 640/18 mcg/day and ROFLUMILAST 500 mcg/day;2)24 patients have received only BUD/FORM. 640/18 mcg/day.All patients were current smokers and observed during 6 months.In patients with severe COPD whom applied ROFLUMILAST together with BUD/FORM. the level of inflammatory biomarkers in induced sputum significantly decreased after 6 months therapy.In patients group with ROFLUMILAST therapy the number of neutrophils decreased importantly(39,1 +\_9,8 vs 20,4+\_6,7%,p<0,001).This decreasing at the same time was accompanied with reducing the level of pro-inflammatory cytokins in induced sputum(IL-8 was decreased up to 15,7+\_4,2 pg/ml vs 29,6 +\_6,9 pg/ml before treatment,p<0,001).The anti-inflammatory influence of ROFLUMILAST was accompanied with improving of lung function(FEV1 increased up to 48,7+\_6,4% vs 40,4+\_9,1% before treatment,p<0,05).Our study shown that, the added ROFLUMILAST to the therapy with BUD/FORM. significantly decreased the level of inflammatory biomarkers in current smokers with severe COPD.Summarized the follows we can conclude that,ROFLUMILAST as additional drug to the therapy with BUD/FORM. through reducing the severity of chronic inflammation may improve the lung function of the current smokers patients with severe COPD.