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**Title:** Clinical and functional effectiveness of roflumilast in severe COPD patients

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**Body:** Objectives: This study aimed to investigate the influence of PDE-4 inhibitor roflumilast on clinical and functional indices in severe COPD patients with concomitant CB over 3 month's therapy. Methods: This was a comparison of 30 patients (average age  $49,7 \pm 1,3$  years) with stable COPD (GOLD III),  $\geq 2$  exacerbations in last 12 months and diagnosis of CB in time dimension: we analyzed their symptom score, PFT indices (Rtot, RV, IC, FVC, FEV<sub>1</sub>) during 3 months, when they received standart COPD therapy (LABA+ICS in moderate daily doses) and next 3 months, when roflumilast 500 mcg OD was added to their routine therapy. Study was carried out of budget cost. Results: During first 3 months of observation mean CAT test was ( $30,3 \pm 1,4$ ), main problems were with physical load (all patients noted 4 – 5 on question 4), home affairs (question 5: 3-4 points), with sleep and energy (3 – 5 points). Post BD plethysmography revealed increased Rtot ( $287,5 \pm 12,8$  %), RV ( $187,8 \pm 9,7$  %); Post BD spirometry data also were impaired: FEV<sub>1</sub> Post BD ( $38,1 \pm 3,7$  %), IC ( $52,8 \pm 4,5$  %). Addition of roflumilast lead to the decrease of CAT test score to ( $24,2 \pm 1,6$ ) ( $p < 0,05$ ), tendency to decrease of Rtot ( $200,4 \pm 7,8$  %), decrease of RV – to ( $134,4 \pm 8,7$  %) and to increase of IC (to ( $72,3 \pm 3,7$  %) at the end of next 3 months. Also moved left score in abovementioned points, more answers were checked between 2 and 3. Changes in FEV<sub>1</sub> and FVC were in variability limits. Conclusion: introduction of PDE-4 inhibitor leads to the improvement of COPD control and tendency to increase of functional reserves in severe COPD patients with concomitant CB.