Roflumilast in patients with moderate-to-severe chronic obstructive pulmonary disease treated with long-acting bronchodilators.

Maria Rosaria De Carlo  
Tutor: Prof. Leonardo Fabbri

Background:
At present, treatment options for patients with chronic obstructive pulmonary disease (COPD) are limited. Previous studies have investigated the efficacy and safety of the phosphodiesterase 4 (PDE4) inhibitor roflumilast in moderate and severe COPD.

Methods:
This clinical trial has investigated whether roflumilast improves lung function in patients with moderate-to-severe COPD already treated with an inhaled long-acting bronchodilator (tiotropium). After a 4 week run in period, patients were randomized to receive either oral roflumilast 500 µg or placebo once daily for 24 weeks, in addition to tiotropium.

Results:
Compared with placebo, roflumilast consistently improved mean pre-bronchodilator forced expiratory volume in 1 second (FEV₁) by 80 ml (P<0.0001) in patients treated with tiotropium (n=365) A similar improvement in post-bronchodilator FEV₁ was observed in both groups. In addition, roflumilast demonstrated effects on other lung function measurements and on selected patient-related secondary outcomes in the group treated with tiotropium. Nausea, diarrhea, weight decrease and, to a minor extent, headache occurred more frequently in roflumilast treated patients. These side effects were associated with an increased patients’ withdrawal of patients, particularly during the first 2 months of treatment.
**Conclusions:**

Roflumilast improves lung function in patients with COPD treated with tiotropium. These results suggest that roflumilast provides incremental benefit in patients with moderate to severe COPD, even if it is associated with some adverse effects.