Clinical Research Results Abstract

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The effect of tiotropium/olodaterol versus tiotropium on COPD exacerbation rates in patients with/without frequent exacerbation history

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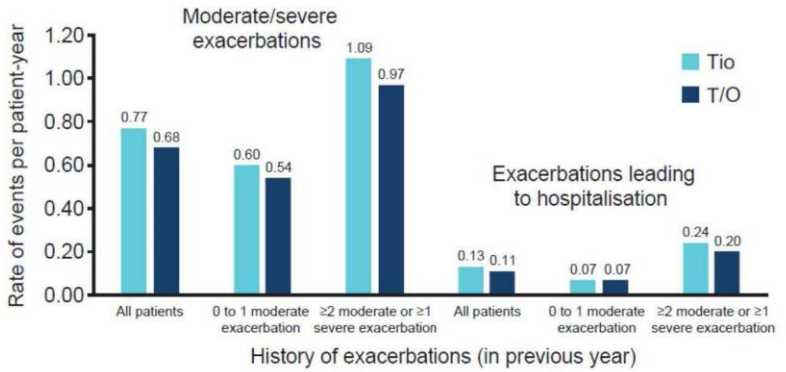
Background: Patients with COPD with a history of frequent exacerbations are at increased risk of future exacerbations. There are limited data as to whether combining LAMA/LABA reduces exacerbation risk in all patients. We investigated whether tiotropium/olodaterol (T/O) reduced exacerbation rate versus tiotropium (tio) in patients with a range of exacerbation histories.

Methods: TONADO 1+2 (NCT01431274/NCT01431287) and DYNAGITO (NCT02296138) were 52-week, parallel-group, randomised, double-blind, Phase III trials in COPD patients with FEV_1 <80% predicted (TONADO) or FEV_1 <60% predicted and ≥1 exacerbation in the previous year (DYNAGITO). Patients received T/O, tio or olodaterol (TONADO only) via Respimat®.

Results: There was a lower rate of moderate/severe exacerbations with T/O (0.68 per patient-year) than tio (0.77 per patient-year); rate ratio [RR] vs tio: 0.89; 95% CI: 0.84, 0.95; P=0.0003 (Figure). Similar results were seen regardless of exacerbation history. There were fewer hospitalised exacerbations with T/O (0.11 per patient-year) than tio (0.13 per patient-year); RR vs tio: 0.86; 95% CI: 0.75, 0.99; P=0.0380 (Figure).

Conclusions: This post hoc pooled analysis of a heterogeneous population of over 9900 COPD patients reflects patients seen in clinical practice. Treatment with T/O reduced exacerbation rate compared with tio, independent of the patient's exacerbation history.

Figure. Adjusted rate of moderate/severe exacerbations and exacerbations leading to hospitalisation by previous exacerbation history



RR T/O vs Tio	0.89	0.90	0.89	0.86	0.93	0.84
95% CI	0.84, 0.95	0.82, 0.98	0.81, 0.97	0.75, 0.99	0.75, 1.16	0.70, 1.00
P value	0.0003	0.0179	0.0074	0.0380	0.5255	0.0503

Exacerbation rates analysed using a negative binomial model adjusted for treatment, study, ICS use at baseline, region, GOLD stage and smoking status as fixed effects, and baseline SGRQ and number of exacerbations in previous year as covariates. All P values are nominal.

Abbreviations: CI, confidence interval; GOLD, Global Initiative for Chronic Obstructive Lung Disease; ICS, inhaled corticosteroid; RR, rate ratio; SGRQ, St. George's Respiratory Questionnaire; Tio, tiotropium; T/O, tiotropium/olodaterol.

Declaration of Interest

Alberto de la Hoz and Florian Voß are employees of Boehringer Ingelheim. The studies were funded by Boehringer Ingelheim.

References and Clinical Trial Registry Information

TONADO 1+2 (NCT01431274/NCT01431287); DYNAGITO (NCT02296138)