FEV<sub>1</sub> and SGRQ (Table 1). The benefit of SFC over SAL was seen with the composite endpoint in the ITT population and both GOLD subgroups.

Conclusion This *post hoc* analysis showed that, although most patients eventually experienced one of the three measures of deterioration, SFC significantly reduced the risk of a first composite CID compared to SAL. This added benefit of ICS was equally present in patients with mild/moderate or severe/very severe COPD.

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Inhaled corticosteroid plus long-acting  $\beta$ 2-agonist therapy is overused in the treatment of patients with chronic obstructive pulmonary disease: post hoc analyses of two 1-year studies

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Rationale Inhaled corticosteroid (ICS) plus long-acting  $\beta_2$ -agonist (LABA) therapy is indicated for different patient groups with chronic obstructive pulmonary disease (COPD) in the USA and Europe. In the previous version of the Global initiative for chronic Obstructive Lung Disease (GOLD) recommendations, the use of ICS plus LABA therapy was restricted to patients with severe and very severe lung-function impairment and frequent exacerbations, with overtreatment in milder patient populations well documented. The current GOLD document recommends the use of ICS plus LABA maintenance therapy for patients in categories C and D.

Methods We present *post hoc* analyses from the two pivotal 1-year TONADO studies to assess the use of ICS plus LABA maintenance therapy in patients classified as GOLD A/B and C/D. As these studies were initiated before the update of the GOLD recommendations, no modified Medical Research Council Dyspnoea scale or COPD Assessment Test data were available to further classify these patients into categories A or B and C or D. Based on the reported COPD exacerbation history and lungfunction measurements, 2259 patients were classified as GOLD A/B and 2903 as GOLD C/D. Baseline characteristics and concomitant medications at baseline are presented in Table 1.

Results In the GOLD A/B subgroup, 7.3% of patients were receiving treatment with ICS alone and 31.3% were receiving treatment with ICS plus LABA at study baseline. In the GOLD C/D subgroup, the incidences of patients receiving treatment with ICS alone and ICS plus LABA at study baseline were 8.8% and 45.5%, respectively.

Conclusions Almost 40% of patients classified as GOLD A/B are receiving treatment with ICS maintenance therapy, either alone, in free combination or as a fixed-dose combination therapy, despite GOLD recommendations for use only in patients with more severe lung-function impairment and frequent exacerbations. Our analyses confirm previous reports, highlighting that treatment regimens containing ICS therapy are being used early in the management of patients with COPD, which may not be appropriate based on current GOLD recommendations.

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	GOLD A/B	GOLD C/D
n	2259	2903
Age (years), mean ± SD	$64.3 \pm 8.6$	$63.8 \pm 8.0$
Male, n (%)	1576 (69.8)	2186 (75.3)
Ex-smoker, n (%)	1348 (59.7)	1906 (65.7
Post-bronchodilator FEV <sub>1</sub> (L), mean ± SD	$1.73 \pm 0.44$	1.1 ± 0.37
Post-bronchodilator $FEV_1$ (% predicted), mean $\pm$ SD	62.9 ± 8.2	39.9 ± 11.
Reversibility (mL), mean ± SD	193 ± 158	154 ± 131
Baseline maintenance medication, n (%)		
ICS	871 (38.6)	1575 (54.3
ICS without LABA	165 (7.3)	255 (8.8)
ICS plus LABA	706 (31.3)	1320 (45.5
LABA	904 (40.0)	1489 (51.3
LAMA	768 (34.0)	1072 (36.9
Xanthines	153 (6.8)	363 (12.5)

SD, standard deviation; FEV<sub>1</sub>, forced expiratory volume in 1 s; LAMA, long-acting muscar inic antagonist.

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A RANDOMISED, PARALLEL-GROUP STUDY TO EVALUATE THE EFFECT OF UMECLIDINIUM ADDED TO INHALED CORTICOSTEROID/LONG-ACTING BETA-AGONIST COMBINATION THERAPY IN SUBJECTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Rationale To evaluate efficacy and safety of adding umeclidinium (UMEC), a long-acting muscarinic antagonist (LAMA), to inhaled corticosteroid (ICS)/long-acting  $\beta$ -agonist (LABA) in patients with moderate-to-very severe chronic obstructive pulmonary disease (COPD) for 12-weeks.

Methods Multicentre, randomised, double-blind, parallel-group study. Inclusion criteria included diagnosis of COPD, modified Medical Research Council Dyspnoea Scale score  $\geq 2$  (i.e. patients symptomatic on ICS/LABA), post-salbutamol forced expiratory volume in one second (FEV<sub>1</sub>)  $\leq 70\%$  predicted and FEV<sub>1</sub>/forced vital capacity ratio of 1 at Day 85; other endpoints included 0–6 h weighted mean FEV<sub>1</sub>, rescue medication use, COPD assessment test (CAT) score, and transition dyspnoea index (TDI) score. Adverse events (AEs) were also investigated.

Results In the UMEC+ICS/LABA and PBO+ICS/LABA groups, 119 and 117 patients were randomised, respectively, receiving fluticasone/salmeterol (40%), budesonide/formoterol (43%), and other ICS/LABA, including generics (17%). Compared with PBO +ICS/LABA, UMEC+ICS/LABA resulted in statistically significant improvements in change from baseline trough FEV1 at Day 85 and 0-6 h weighted mean FEV1 at Day 84 (Table 1). UMEC +ICS/LABA resulted in a statistically significant reduction in change from baseline mean puffs/day of rescue salbutamol over Weeks 1-12 versus PBO+ICS/LABA, but not for percentage of rescue-free days. Change from baseline in CAT score at Day 84 was statistically significantly different for UMEC+ICS/LABA versus PBO+ICS/LABA, but TDI score was not significantly different for UMEC+ICS/LABA versus PBO+ICS/LABA; the study was not powered for these endpoints. Incidence of AEs was similar with UMEC+ICS/LABA and PBO+ICS/LABA; n = 45 (38%) and n = 49 (42%), respectively. The most common AEs were nasopharyngitis (13-15%) and headache (3-7%).