S26 AN ASSESSMENT OF SHORT-ACTING β2-AGONIST (SABA) USE AND SUBSEQUENT GREENHOUSE GAS (GHG) EMISSIONS IN FIVE EUROPEAN COUNTRIES AND THE CONSEQUENCE OF THEIR POTENTIAL OVERUSE FOR ASTHMA IN THE UK

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Introduction The SABA Use IN Asthma (SABINA) programme associates SABA overuse (prescription of ≥3 canisters per year versus 0–2) with increased risk of exacerbations and asthma-related healthcare utilisation[1]; with this overuse common across Europe.[2] In parallel, the environmental impact of inhaler choice receives attention but is often focussed on pre-venters. We analysed the volume of SABA use and its GHG emissions versus total inhaler devices and compared the U.K. with other European countries. Next, we calculated the annual volume and GHG emissions from SABA overuse in asthma in the U.K. using the SABINA U.K. study data.

Methods Inhaler use was calculated using sales data obtained from life science analytics company IQVIA™ over 12 months to September 2019. Data were compared by dose, preventing confounding from device actuation count differences. SABA overuse volume in asthma i.e. sum of prescribing ≥3 prescriptions in 12 months, was extracted from Clinical Practice Research Datalink GOLD as part of SABINA U.K. (≥12 years, current asthma diagnosis, any severity, 12 month period between 2007–2019). GHG emissions of inhaler devices were estimated using published and internal AstraZeneca data on their full life cycle.

Results SABA represents the majority of inhaler use and of GHG emissions in the U.K. and its neighbours (table 1). However, U.K. SABA use and GHG emissions per capita are approximately treble those of other countries. In SABINA U.K., 284,683 out of 574,913 asthma patients were potentially overusing SABA. The average for this group was 6.51 pre-scriptions per year. 83% of SABA prescriptions for asthma went to patients overusing SABA. For the U.K. asthma popula-tion this represents 9.24 million SABA prescriptions and 250,000 tonnes of CO_2[equivalent] annually.

Conclusion These data demonstrate the GHG emissions associ-ated with high SABA use across Europe and particularly in the U.K. Implementing guidelines to drive improvements in asthma care would improve asthma control, thereby reducing reliever medication use and exacerbation frequency, benefiting patients and realising carbon savings that go beyond the reduction in SABA use alone.

REFERENCE
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2. Janson C, et al. Adv Ther 2020: 37; 1124–1135

S27 EFFECT OF HIGH ICS DOSE FIXED COMBINATION EXTRAFINE BECLOMETHASONE DIPROPIONATE, FORMOTEROL FUMARATE, AND GLYCOPYRRONIUM (BDP/FF/G) PMDI ON ASTHMA CONTROL IN PATIENTS WITH PERSISTENT AIRFLOW LIMITATION (PAL): A POST-HOC ANALYSIS OF THE TRIGGER STUDY

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Introduction and Objectives Persistent airflow limitation (PAL) predicts a positive clinical response to add-on long acting muscarinic antagonist in patients with asthma taking inhaled corticosteroids and long-acting β2-receptor agonists. We con-ducted a post-hoc analysis of the TRIGGER study to evaluate the effect of extrafine BDP/FF/G vs BDP/FF on asthma control and the use of systemic corticosteroids for asthma exacerba-tions in a subset of patients with PAL.

Methods TRIGGER was a phase III, randomized, parallel group trial comparing 52-week treatment with BDP/FF/G 200/6/10μg two inhalations twice daily (BID) to BDP/FF 200/6μg BID and an open-label treatment arm consisting of BDP/FF 200/6μg BID plus tiotropium (BDP/FF+Tio). PAL criteria were a post-bron-chodilator FEV_1≤80% of predicted normal and FEV_1/FVC≤0.7; ACQ-7 response was defined as a change from baseline in ACQ-7 score ≤-0.5 unit, and asthma control days as asthma symptom-free day without using rescue medication.

Results 1437 subjects were randomized and 61.2% met the PAL criteria. In this subgroup, there was a significantly higher percentage of ACQ-7 responders on BDP/FF/G compared to BDP/FF at week 26 (60.2% vs 49.4%) and week 52 (60.8% vs 51.7%). In the overall population, the difference in the percentage of ACQ-7 responders was 61.3% vs 55.9% at week 26 and 62.3% vs 58.1% at week 52, for BDP/FF/G and BDP/FF respectively. In patients with PAL, the change from

Abstract S26 Table 1 Comparison of U.K. with other European countries on the annual use and impact on greenhouse gas (GHG) emissions of short-acting β2-agonist (SABA) relievers vs total inhaler usage (reliever & preventer)

Country	SABA vs total inhaler use (%)	SABA vs total inhaler GHG emissions (%)	SABA GHG emissions (tonnes CO_2e*)	SABA use per capita (,000 doses/ 10,000 people)	SABA GHG emissions per capita (tonnes CO_2e/10,000 people)
Italy	46.5	54.8	104,503	126	17
Spain	58.9	69.3	195,771	319	40
France	62.5	72.6	334,715	383	50
Germany	54.1	67.1	293,638	276	36
U.K.	70.2	67.5	862,685	1034	134

*CO_2 equivalent