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Longitudinal Systemic Corticosteroid Utilisation for Asthma and Other Diseases in the United Kingdom from 1990 to 2018: A Population-based Cohort Analysis

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Introduction and Objectives: Evidence of increased adverse event risk with systemic corticosteroid (SCS) use led patient management guidelines to embrace SCS-sparing treatment strategies. This study was conducted to describe time trends in SCS prescriptions and their relation to National Health Service (NHS) availability of SCS-sparing therapies.

Methods: A cohort study was performed using the Optimum Patient Care Research Database (OPCRD), which includes data from >10 million patients in >750 general practices in the United Kingdom (UK). The study population comprised all patients aged ≥ 5 years who were registered for ≥ 1 year with a participating general practice during the study period (1990-2018) and who had only 1 condition for which SCS may have been prescribed. A set of 28 conditions for which SCS can be prescribed was selected for analysis, and total annual SCS use was calculated for each. Further examination of time trends in SCS prescription frequency and dosage was performed for a subset of conditions, including asthma, chronic obstructive pulmonary disease (COPD), Crohn's disease, and rheumatoid arthritis.

Results: The total number of active patients per annum ranged from 642,835 to 1,479,385. Throughout the study period, asthma and COPD accounted for >45% of the total SCS dose prescribed among the 28 studied conditions. The proportion of patients with asthma using SCS was stable at approximately 10% until 2013, after which it increased to 15%. Use of high-dose SCS in asthma appeared to decrease with availability of the first combination inhaled corticosteroid/long-acting $\beta 2$ -agonist, whereas low-dose SCS utilisation increased over time (Figure). Availability of the first biologic therapy for asthma in 2007 had little effect on SCS prescription trends. In patients with COPD, for which there are currently no approved biologic

therapies, use of SCS at all dose levels increased over time (1990: 4%; 2018: 17%), whereas decreased SCS use was observed after biologic therapies became available for Crohn's disease (2000: 51%; 2018: 24%) and rheumatoid arthritis (2000: 14%; 2018: 10%).

Conclusions: Despite biologic therapy options, high SCS use persists for patients with asthma in the UK. Increased awareness of SCS overuse and SCS-sparing options is needed to reduce unnecessary prescription.

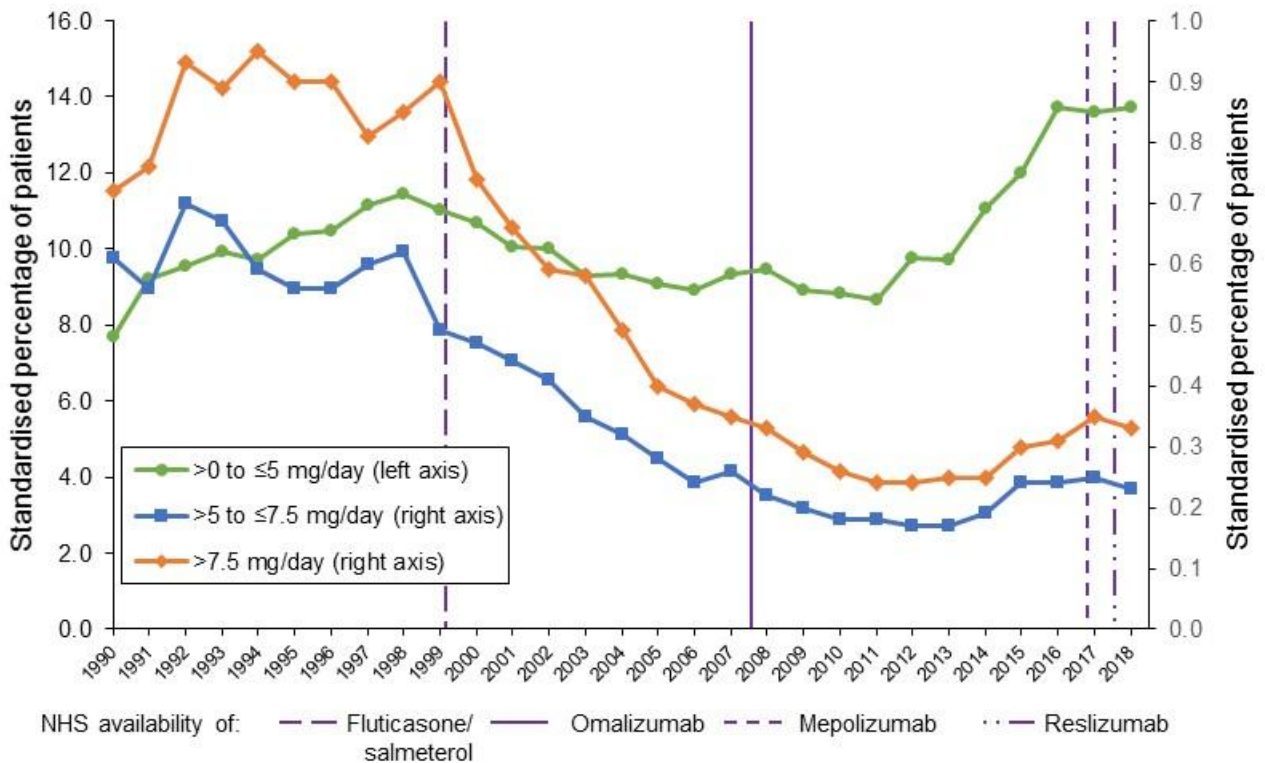


Figure. Percentage of patients who used SCS over time by average daily dose category.