

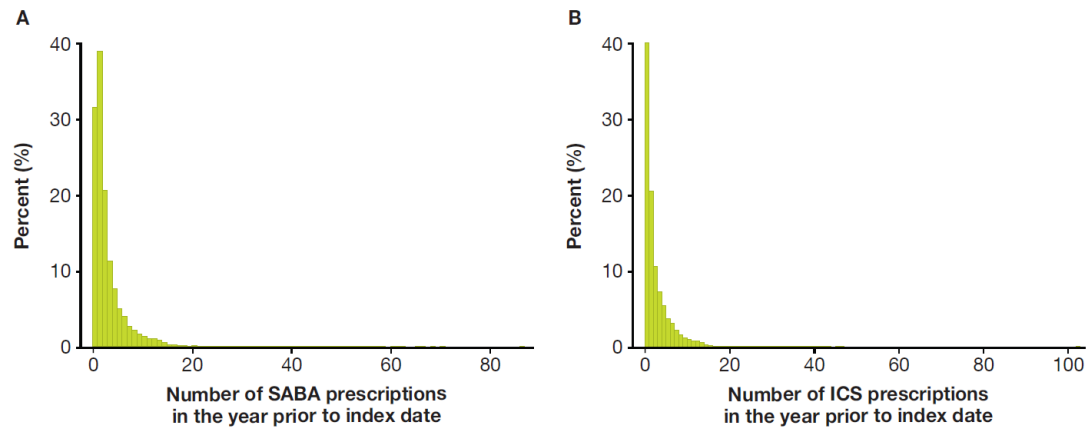
Supplementary materials

Table S1. The disease onset definitions of the adverse outcomes analysed in this study in UK patients with asthma

Adverse outcome	Definition
Dyslipidaemia	Total cholesterol readings >6.5 mmol/L in outcome period and/or low-density lipoprotein readings >4 mmol/L in outcome period and/or triglycerides readings \geq 2.3 mmol/L in outcome period and/or diagnostic code for dyslipidaemia or hyperlipidaemia or hypercholesterolaemia or hypertriglyceridaemia
Behavioural disorders (adolescent population)	Diagnostic code in outcome period was determined by steering committee (Read codes)
Renal impairment	Chronic kidney disease diagnostic code (only stages 3a, 3b, 4 or 5 were considered) and/or estimated glomerular filtration rate <60 mL/min/1.73m ² in outcome period (Read codes) and/or dialysis code in the outcome period (Read codes) and/or renal transplant code in the outcome period (Read codes)
Osteoporosis/osteoporotic fracture	Osteoporosis diagnostic code in outcome period (Read codes) and/or osteoporotic fractures (hip, wrist or spinal fracture types only were considered). A recurring fracture of the same site within 8 weeks of the previous fracture date was counted as the same fracture. However, the patient was still considered at risk of a fracture at a different site any time after the date of previous fracture
Hypertension	Hypertension diagnostic code in outcome period (Read codes)
Peptic ulcer	Peptic ulcer disease diagnostic code (with endoscopy code for gastric ulcer and duodenal ulcer) in outcome period (Read codes)
Cardiovascular disease	Cardiovascular disease diagnostic code for myocardial infarction, heart failure or stroke in outcome period (Read codes)
Depression/Anxiety	Depression/anxiety diagnostic code in outcome period (Read codes) or depression/anxiety diagnostic code in outcome period and antidepressant medications in the outcome period
Sleep disorders	Sleep disorder diagnostic code in outcome period (Read codes) and/or sleep disorder diagnostic code and hypnotic medications in the outcome period (Read codes), excluding sleep apnoea
Cataracts	Cataract diagnostic code in outcome period (Read codes) and/or cataract surgery
Glaucoma	Glaucoma diagnostic code in outcome period (Read codes) and/or treatment for Glaucoma in the outcome period
Type 2 diabetes mellitus	Diagnosis of type 2 diabetes mellitus (Read code post-index date) and/or antidiabetic medication prescriptions in outcome period and/or HbA1c \geq 6.5% in outcome period (Read code post index date)

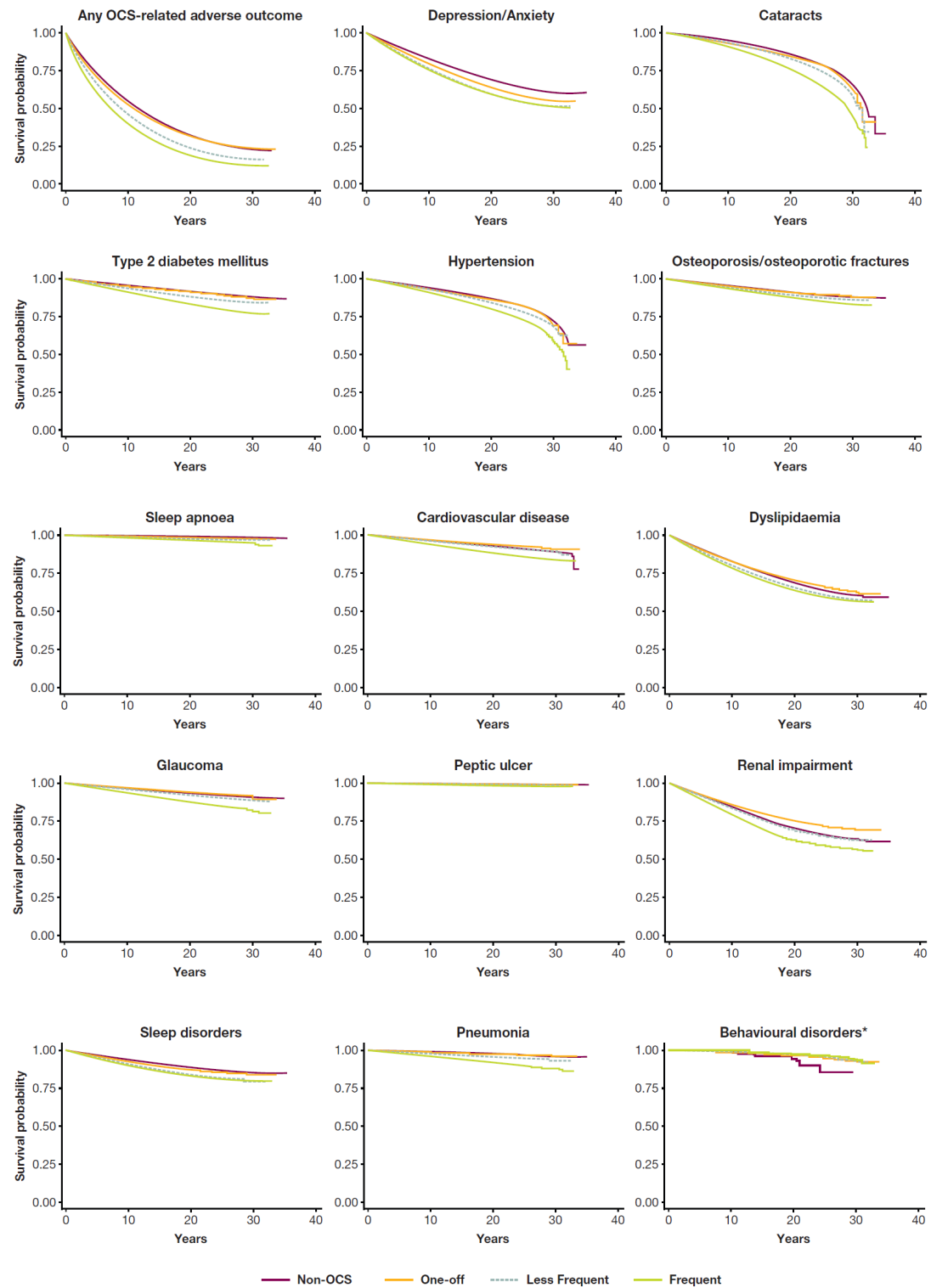
Pneumonia	Pneumonia diagnostic code in outcome period (Read codes). A recurring diagnosis of pneumonia within 4 weeks of prior diagnosis was considered as the same event
Sleep apnoea	Sleep apnoea diagnostic code in outcome period (Read codes) and/or referral to sleep clinic in the outcome period and usage of a continuous positive airway pressure device
Weight gain	Increase in Body Mass Index by at least 1 kg/m ² compared to index date in adults and more than 1% centile band

Figure S1. Distributions of SABA (A) and ICS (B) prescriptions in the 12 months prior to initial OCS prescription in UK patients with asthma (OCS cohort)



ICS, inhaled corticosteroid; OCS, oral corticosteroid; SABA, short-acting β_2 agonist.

Figure S2. Patterns of intermittent OCS use and adverse outcomes by years in UK patients with asthma using Kaplan-Meier survival estimates



OCS, oral corticosteroid.

*Behavioural disorders include diagnoses: Distress, agitation, nervousness, emotional problems, irritable, and abnormal behaviour.

Fixed Analysis was adjusted for age, gender, body mass index and smoking.