

1). A simple tool (1 point assigned to each variable) demonstrated an area under the receiver operating characteristic curve of 0.809 (95% CIs: 0.747–0.871).

Discussion These routinely available clinical indices, which include a measure of hyperinflation, and two simple patient completed questionnaires demonstrate independent prediction of poor outcome in this population. A clinical tool from these indices shows promise but would require external validation before clinical use. If this occurred, it may help challenge prognostic pessimism and with predicting patients who require specialist palliative input.

REFERENCE

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New insights in asthma care

S25

THE IMPACT OF COVID-19 ON THE UK SEVERE ASTHMA POPULATION

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Introduction Severe asthma patients were assumed to be at greater risk of morbidity from infection with the novel severe acute respiratory syndrome coronavirus (COVID-19), hence, in the UK, were advised to shield. Community data on COVID-19 infection in severe asthmatics is lacking. We

assessed the burden of shielding, the impact of COVID-19 and the effect of asthma medication on the UK severe asthma population.

Methods Adults previously consented to inclusion in the UK Severe Asthma Registry (UKSAR) across 14 centres were contacted in June 2020 to collect data on potential COVID-19 infection, asthma control and shielding. Electronic records, where available, were reviewed for confirmation. Data was combined with clinical data from the UKSAR. Univariate and multivariate logistic regression analyses were performed to identify risk factors for COVID-19 infection.

Results 1365 patients were included. 1268 (93%) were advised to shield, 1131 (89%) patients who received shielding advice followed it. Men (OR 0.4, $p=0.045$) and those in non-shielding households (OR 0.27, $p=0.001$) were less likely to follow shielding advice. 544 (47%) of patients advised to shield reported worsening of mental health; females (OR 1.59, $p=0.001$) and those with history of anxiety or depression (OR 2.12 $p=0.001$) were at greater risk.

97 (7.1%) patients had suspected/confirmed COVID-19 infection, 19 (1.39%) PCR/serology confirmed infection, 13(0.95%) were hospitalised and 2 patients (0.15%) died (table 1).

918 (67%) were on biologic therapy, 515 (37%) maintenance oral corticosteroid (mOCS). Multivariate analysis showed neither biologic therapy (OR 0.73, $p=0.165$) nor mOCS (OR 1.18, $p=0.427$) increased the risk of COVID-19 infection. Patients on biologics were less likely to require an acute course of corticosteroids for asthma symptoms (OR 0.6, $p=0.002$) while patients on mOCS were more likely (OR 1.96 $p\leq 0.001$).

Inhaled corticosteroids (ICS) were not associated with COVID-19 infection, including high dose (2000 mcg BDP equivalent) (OR 0.64, $p=0.234$). Hospitalised patients were on lower median doses of ICS vs non-hospitalised patients (1000 vs 2000 mcg BDP equivalent, $p=0.002$).

Conclusion Hospitalisation and death occurred in small numbers in our severe asthma population. From this observational data, biologic agents for asthma were not associated with increased risk of COVID-19 infection or hospitalisation.

Abstract S25 Table 1 Characteristics of severe asthma patients with suspected or confirmed mild (ambulatory) or severe (hospitalised) COVID-19 infection

	Mild COVID-19 (n=84)	Hospitalised with COVID-19 (n=13)	p-value
Age (Years) (mean [SD])	50.5 (13.8)	55.6 (13.7)	0.215
Male Gender (n [%])	39 (46.4%)	4 (30.8%)	0.290
BMI (kg·m ⁻²) (mean [SD])	31.3 (6.3)	31.3 (4.9)	0.967
Non-Caucasian Ethnicity (n [%])	15 (17.9%)	3 (25.0%)	0.553
Atopic Disease (n [%])	48 (62.3%)	10 (76.9%)	0.310
FEV ₁ % Predicted (mean [SD])	67.9 (59.9,82.8)	73.7 (60.1,84.8)	0.555
ICS Dose (BDP equivalent-ug) (median [IQR])	2000 (1600,2000)	1000 (800,1600)	0.002
On Maintenance OCS (n [%])	35 (47.9%)	3 (23.1%)	0.872
Evidence of Poor Adherence (n [%])	18 (24.7%)	7 (53.8%)	0.033
Maintenance Macrolides (n [%])	7 (9.9%)	2 (16.7%)	0.428
On Asthma Biologic (n [%])	57 (67.9%)	8 (61.5%)	0.652
Shielding against COVID-19			
Followed Shielding Advice (n [%])	64 (84.2%)	9 (90.0%)	0.631
Shielding affected mental health (n [%])	33 (46.5%)	5 (50.0%)	0.835
Contracted COVID-19 Before Shielding (n [%])	40 (60.6%)	4 (40.0%)	0.219