corticosteroids. Research is required to define the criteria for patients who would benefit from such systematic inpatient assessment and the longterm outcomes of such intervention.

P206 UTILITY OF ADHERENCE CHECKS IN PATIENTS WITH SEVERE ASTHMA ELIGIBLE FOR BIOLOGICS: A SINGLE CENTRE RETROSPECTIVE ANALYSIS

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Introduction United-Kingdom guidelines require good adherence to qualify for biologics, but reports suggest 25% of patients are nonadherent at time of initiation. The extent to which collaboration with a clinical pharmacist allows better fulfilment of guideline criteria has not been established.

Methods We retrospectively analysed adherence checks done in the Oxford Special Airways Clinic (Oxford, UK) prior to initiation of biologic treatment for severe asthma between Dec 2013 and Aug 2020. Adherence to inhaled corticosteroid and maintenance oral corticosteroids (OCS) was defined as $\geq 75\%$ of prescriptions collected out of the total expected in 1 year. Other guideline criteria for biologics are ≥ 3 OCS bursts and/or $\geq 50\%$ of previous year on maintenance OCS in optimally-treated severe asthma.

Results 280 of 289 patients on biologics had a pre-biologic adherence check available. The median adherence to ICS was 100% (IQR: 83%-100%) and the median number of asthma attacks in the previous year was 3 (IQR 1-6). Overall adherence and compliance with pharmaceutical criteria for biologics was shown in 249 patients (89%).

Conclusion An adherence check by a clinical pharmacist prior to initiating a biologic for severe asthma is associated with 89% compliance to prescription guidelines, emphasising the importance of multidisciplinary work.

Please refer to page A193 for declarations of interest related to this abstract.

P207 STEROID REDUCTION WITH OMALIZUMAB IN SEVERE ALLERGIC ASTHMA

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Introduction Omalizumab is a subcutaneous monoclonal antibody (MAB) which is licenced in the treatment of severe persistent allergic asthma. It works by binding to IgE, preventing activation of mast cells and basophils and reducing release of inflammatory mediators. The anti-IL-5 MABs used in severe asthma have been widely researched to show their steroid reducing capabilities. According to the NICE guidelines for omalizumab, patients require at least 4 courses of prednisolone to qualify. Little research has been done into its potential for steroid reduction.

Aim To assess the impact of omalizumab therapy on maintenance steroid dose and acute corticosteroid courses.

Method A retrospective review was carried out of patients starting omalizumab after MDT approval. We investigated oral

Abstract P207 Table 1 Clinical outcomes over the first 12 months of omalizumab treatment. Significance level (p) in change versus baseline by Wilcoxon signed ranks test

	n	Baseline	n	12 mo	p
ACQ	67	3.16 (2.15–3.83)	46	2.16 (1.31–2.79)	<0.05
AQLQ	65	3.3 (2.46–4.66)	37	4.83 (3.66–5.7)	<0.05
FEV1% predicted	57	65 (52–81.5)	24	65.5 (56.75–77.5)	0.45
FeNO ppb	53	21 (13–36)	27	24 (13.5–40)	0.17
Blood eosinophils x10 ⁹ /L	66	0.24 (0.11–0.40)	25	0.2 (0.15–0.32)	0.62
Adherence% pickup	63	91 (76–100)	28	90.5 (77.5–100)	0.90

ACQ: asthma control questionnaire; AQLQ: asthma quality of life questionnaire; FeNO: fractional exhaled nitric oxide.

corticosteroid dose (OCS), asthma control, blood eosinophils, FEV1/FVC, FeNO, adherence to ICS and exacerbation frequency over the first 12 months of treatment. Data were non-normally distributed and reported as median (interquartile range), and between-group comparisons made using Mann-Whitney U test

Results 71 patients were included (36 male). 25 patients were on a maintenance oral prednisolone dose at initiation of omalizumab [median (IQR) 10 (7.5–15) mg/d]. The dose reduced by 12 months of treatment (median (IQR) 7.5 (6.25–10) (p<0.05)). Patients had minimum four exacerbations in the year preceding omalizumab initiation; over the first year of treatment this reduced to median (IQR) 0 (1). There was also a significant improvement in ACQ and AQLQ scores (see table 1).

Conclusion The original trials for omalizumab focussed on improvement in lung functions and asthma control. The introduction of anti-IL5 MABs has switched the focus to reduction in steroid exposure. The results show that patients on maintenance steroids can achieve a reduction in steroid dose and exacerbations whilst on omalizumab. Alongside this they can improve their asthma control and quality of life. Monitoring of adherence to inhaled corticosteroids has shown ongoing compliance. We previously found a 50% non-compliance rate in our omalizumab patients. We feel this shows service improvements implemented have led to improved compliance to ICS.

REFERENCE

1. NICE TA28 Omalizumab for treating severe persistent allergic asthma. April 2018. <https://www.nice.org.uk/guidance/ta278> <accessed 01/06/2021>

P208 DOES OBESITY AFFECT FRACTIONAL EXHALED NITRIC OXIDE INTERPRETATION IN DIFFICULT ASTHMA?

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Introduction Obesity-associated asthma is a difficult-to-treat phenotype linked with poorer disease control, reduced quality of life and increased morbidity and mortality. This phenotype coupled with type 2 (T2)-high inflammation may respond to currently available biologic treatments. Previous studies have

shown reduction in fractional exhaled nitric oxide (FeNO) with increasing body mass index (BMI) however, to our knowledge, no studies have shown this effect when adjusted for confounding variables such as corticosteroid use. We postulate that obesity has an impact on T2 biomarkers independent of confounders.

Methods Data from two recent studies (ID NCT03630432, NCT03858608) was analysed retrospectively, including patient demographics, medical and drug history, BMI, eosinophils, FeNO and atopic status; and most recently available total Immunoglobulin E (IgE) was collected for this analysis. The primary outcome of interest was the effect of BMI on T2 biomarkers: blood eosinophil count, FeNO and total IgE. Multiple linear regression was performed to investigate whether BMI could predict FeNO when adjusted for other variables (age, sex, atopic status, smoking status, allergic rhinitis, perennial rhinitis, and inhaled and oral corticosteroid dose). All statistical analysis was performed using IBM SPSS Statistics (version 27.0.1.0) and significance was set at <0.05.

Results The dataset included 102 overweight and obese difficult asthma participants, 26 overweight and obese mild asthma participants and 25 healthy-BMI mild asthma participants (n = 153). In multiple linear regression, BMI was a significant predictor of FeNO ($\beta = -2.848$, $p = 0.019^*$); in this model, for every increase in BMI by 1 kg/m², FeNO decreased by 3 parts per billion (ppb) when adjusted for age, sex, atopy, smoking, rhinitis and corticosteroid dose. The overall model was significant, $F(9,18) = 3.20$, $p = 0.017^*$, with an $R^2 = 0.62$.

Conclusions Our data indicates there is a significant negative relationship between BMI and FeNO after adjusting for relevant variables, particularly corticosteroid use. This could have important implications for endotyping in this already hard-to-treat population, and affects subsequent assessment for advanced asthma therapies, such as biologics, that are tailored to T2-high endotypes. Limitations include non-equal weighting between groups and low numbers in this unpowered study.

P209 TREATABLE TRAITS IN DIAGNOSIS-NAÏVE AND UNTREATED PATIENTS WITH SUSPECTED ASTHMA – DATA FROM THE RADICA STUDY

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Background The identification of treatable traits (TT) has been proposed as a means to facilitate the delivery of precision medicine in severe asthma. We hypothesise that a similar approach may also provide novel insights in symptomatic patients during initial diagnosis, and aimed to evaluate the prevalence of TT in those with and without subsequently-confirmed asthma.

Method Symptomatic yet untreated patients with clinician-suspected asthma were recruited. Clinical history and examination were carried out before spirometry with bronchodilator reversibility (BDR), fractional exhaled nitric oxide, and bronchial challenges were performed. Blood eosinophils were measured and patients were skin prick tested. An asthma diagnosis was confirmed or refuted following 6–8

weeks of inhaled corticosteroids (ICS). Medication adherence was recorded using INhaler Compliance Assessment (INCA) device.

Results Of 81 adults (≥ 16 years), 12 were excluded as ‘unclassifiable’ due to borderline results or missing data. Of the remainder, 42 (45% male, mean [SD] 32.0 [12.3] yrs) were diagnosed with asthma and 27 (25% male, 37.1 [12.5] yrs) were not. Pulmonary, extrapulmonary and psychosocial TT

Abstract P209 Table 1 Summary of prevalence of treatable traits identified in symptomatic patients

Category	Treatable traits	Asthma	Non-asthma	p-value
Pulmonary	Airflow limitation	12/42 (28.6%)	0/27 (0%)	0.006
	Bronchodilator reversibility	19/42 (45.2%)	0/27 (0%)	<0.001
	High FeNO (≥ 40 ppb)	23/42 (54.8%)	3/27 (11.1%)	<0.001
	Blood eosinophilia ($\geq 0.4 \times 10^9$ cells/L)	14/40 (35.0%)	0/25 (0%)	0.002
	Exercise induced breathlessness	25/42 (59.5%)	17/27 (63.0%)	0.974
	Bronchial hyperresponsiveness to methacholine	19/33 (57.6%)	0/24 (0%)	<0.001
	Symptoms of rhinitis, n(%)	24/42 (57.1%)	18/27 (66.7%)	0.590
	History of nasal polyps n(%)	1/42 (2.4%)	0/27 (0%)	1.00
	Obesity (BMI>30)	14/42 (33.3%)	11/27 (40.7%)	0.713
	Symptoms of reflux	17/42 (40.5%)	21/27 (77.8%)	0.005
Extra pulmonary	Eczema	12/42 (28.6%)	3/27 (11.1%)	0.157
	Atopy [∞]	31/42 (73.8%)	15/27 (55.6%)	0.191
	Cat-sensitised	6/42 (14.3%)	5/27 (18.5%)	0.740
	Cat-sensitised and exposure	2/6 (33.3%)	1/5 (20%)	1.00
	Dog-sensitised	4/42 (9.5%)	0/27 (0%)	0.290
	Dog-sensitised and exposure	1/4 (25.0%)	0/0	n/a
	Self-reported food allergy	4/42 (9.5%)	4/27 (14.8%)	0.776
	Current smoker	9/42 (21.4%)	2/27 (7.7%)	0.047
	Former smoker	4/42 (9.5%)	8/27 (30.7%)	
	Non smoker	29/42 (69.0%)	16/27 (61.5%)	
Psychosocial	Self-reported anxiety/psychiatric disease	8/42 (19.0%)	9/27 (33.3%)	0.290
	Medication compliance rate*, Median (IQR)	78.9 (64.4–89.5%)	78.6 (67.0–87.0%)	0.149

Data presented as n (%), p-value calculated using chi-squared test or fisher’s exact test. FeNO: fractional exhaled nitric oxide; [∞] Skin prick test to eight common inhaled aeroallergens. *Data presented as median (IQR), p-value calculated using Mann-Whitney U test.