Abstract S82 Figure 1 MRI indices in patients with no pulmonary vascular obstruction, CTED, proximal and distal CTEPH

P-value = ANOVA

*p = <0.01 **p = <0.05, ns = not significant

A – Pulmonary Artery Distensibility, B – Systolic Left Ventricular EI, C – Diastolic Left Ventricular EI

Conclusion EI and PAD correlate with invasive haemodynamic indices and right ventricular function in CTEPH. These measures strengthen the ability of CMR to detect pulmonary hypertension and provide further justification for the use of CMR in investigation of chronic thromboembolic disease.

Biologics for asthma

S83

THE IMPACT OF AN ONLINE PATIENT-FACING TOOL ON SEVERE ASTHMA REFERRALS

C Renwick, C Cheung, A Fallas, J Kirby, S Walker. *Asthma UK, London, UK*

10.1136/thorax-2021-BTSAbstracts.89

Introduction Biologics for severe asthma (SA) are effective but only 18% of people with suspected SA are referred for consideration for treatment as recommended by current BTS asthma guidelines.¹ Awareness of biologics among people with asthma is low. Here we evaluate the impact of a patient-facing intervention designed to drive appropriate SA referrals in the UK.

Methods Asthma UK (AUK) designed an interactive online tool that directs people to one of 5 possible outcomes, including 'improve asthma management', 'seek referral' or 'explore biologic options'. Each outcome has a clear call to action and option to sign up for tailored health advice emails. The tool was developed based on the Asthma Control Questionnaire (ACQ) and service specification for SA. The tool was created using an online survey platform (Typeform) and embedded on the AUK website. Usability of the tool was evaluated via moderated online video interviews with 12

patients with asthma. Respiratory clinicians were also invited to use the tool and provide feedback. It was promoted to people with uncontrolled asthma via AUK emails, social media and within the press. A follow-up survey was administered six weeks later to understand how people acted on the advice provided.

Results As of April 2020, 20,000 people had used the interactive tool. Of those that signed up for the tailored email, 313 completed the 'improve asthma management', 'seek referral' or 'explore biologic options' follow-up survey. Overall, 70% (218/313) said they took action based on their outcome from the tool. Of those completing the 'seek referral' survey, 60% (55/91) said they spoke to their GP about a referral and 30% (27/91) were referred. Of those completing the 'explore biologic options' survey, 39% (15/38) spoke to their healthcare professional about their eligibility and 21% (8/38) said they were assessed for treatment with biologics. Of those completing the 'improve asthma management' survey, 80% (148/184) said they took steps to improve their asthma management.

Conclusion Preliminary results suggest that AUK's interactive patient facing tool helps to increase SA referrals and access to biologic treatments.

REFERENCE

1. Asthma UK, Living in Limbo: the unmet need in difficult and severe asthma, 2019.

S84

LONG-TERM EFFICACY OF DUPILUMAB: 3-YEAR DATA OF QUEST PATIENTS WITH MODERATE-TO-SEVERE ASTHMA ENROLLED IN LIBERTY ASTHMA TRAVERSE

¹ID Pavord, ²A Papi, ³A Bourdin, ⁴H Watz, ⁵C Domingo, ⁶ME Wechsler, ⁷X Mao, ⁸B Ortiz, ⁹M Djandji, ¹⁰L Mannent, ⁷E Laws, ⁸N Amin, ⁸DJ Lederer, ⁹M Hardin. ¹NIHR Oxford Biomedical Research Centre, University of Oxford, Oxford, UK; ²Respiratory Medicine Unit, University of Ferrara, S. Anna University Hospital, Ferrara, Italy; ³University of Montpellier, Montpellier, France; ⁴Pulmonary Research Institute, LungenClinic Grosshansdorf, Airway Research Center North (ARC), German Center for Lung Research (DZL), Grosshansdorf, Germany; ⁵Corporació Sanitària Parc Taulí, Sabadell, Autonomous University of Barcelona, Barcelona, Spain; ⁶National Jewish Health, Denver, CO, USA; ⁷Sanofi, Bridgewater, NJ, USA; ⁸Regeneron Pharmaceuticals, Inc., Tarrytown, NY, USA; ⁹Sanofi, Cambridge, MA, USA; ¹⁰Sanofi, Chilly-Mazarin, France

10.1136/thorax-2021-BTSAbstracts.90

Introduction and Objectives Dupilumab, a fully human monoclonal antibody, blocks the shared receptor component for interleukin-4 and interleukin-13, key and central drivers of type 2 inflammation in multiple diseases, including asthma. In the phase 3 LIBERTY ASTHMA QUEST study (NCT02414854), add-on dupilumab 200/300 mg every 2 weeks (q2w) significantly reduced severe asthma exacerbations and improved pre-bronchodilator forced expiratory volume in 1 second (FEV₁) vs matched placebo in patients with uncontrolled, moderate-to-severe asthma. The LIBERTY ASTHMA TRAVERSE open-label extension study (NCT02134028) evaluated the long-term safety, tolerability, and efficacy of dupilumab in patients who had completed a previous dupilumab asthma study. This post hoc analysis evaluated the efficacy of dupilumab in patients from QUEST who rolled over into TRAVERSE and received a further 96 weeks of dupilumab treatment.

Methods We evaluated data from QUEST patients treated with dupilumab q2w or matched placebo for 52 weeks who rolled over into TRAVERSE and received 96 weeks of dupilumab

Abstract S84 Figure 1 Efficacy endpoints in QUEST patients who rolled over into TRAVERSE completing 3 full years of dupilumab treatment. (A) Unadjusted; (B) Change from QUEST baseline in FEV₁

(A) AER analysis in blinded parent study was done on ITT and in the open label TRAVERSE was done on the safety population.

(B) FEV₁ was assessed in the exposed population (observed cases) using descriptive statistics. BL represents the baseline of the parent study. Week 0 represents the start of TRAVERSE, and Week in TRAVERSE refers to the time in TRAVERSE without regard to any time in any parent study.

^aThe total number of events that occurred during the treatment period divided by the total number of patient-years followed in the treatment period. BL, baseline; ITT, intention-to-treat; SD, standard deviation; SE, standard error.

300 mg q2w. We assessed the unadjusted annualized rate of severe asthma exacerbations (AER) during QUEST (Weeks 0–52) and TRAVERSE (Weeks 0–48 and Weeks 48–96) and the mean change from QUEST baseline in pre-bronchodilator FEV₁ in QUEST over the QUEST and TRAVERSE studies.

Results The unadjusted AER in dupilumab-treated patients was low during QUEST, with progressive reductions observed during the treatment period of 96 weeks in TRAVERSE and a majority of patients experiencing no exacerbations (figure 1A). In the placebo/dupilumab group of patients, the unadjusted AER decreased significantly during TRAVERSE compared with QUEST and was similar to the AER in dupilumab/dupilumab patients. Clinically meaningful improvements in pre-bronchodilator FEV₁ were observed at Week 52 of QUEST in dupilumab/dupilumab patients, which were sustained with no apparent loss of treatment effect at Weeks 48 and 96 of TRAVERSE (figure 1B). Large improvements in pre-bronchodilator FEV₁ were observed in placebo/dupilumab patients upon initiation of dupilumab, which were sustained throughout the TRAVERSE treatment period.

Conclusions Dupilumab demonstrated sustained efficacy in reducing severe asthma exacerbations and improving lung function in patients with moderate-to-severe asthma who completed 96 weeks of treatment.

Please refer to page A189 for declarations of interest related to this abstract.

S85

CLINICAL CHARACTERISTICS ASSOCIATED WITH MUCUS PLUGGING IN SEVERE EOSINOPHILIC ASTHMA AND THE EFFECTIVENESS OF BENRALIZUMAB TREATMENT

¹AP Hearn, ²MS Mak, ²I Budaj, ³N Qurashi, ³O Snell, ¹J Kavanagh, ¹M Fernandes, ¹L Green, ¹C Roxas, ¹L Thomson, ¹G d'Ancona, ¹J Dhariwal, ¹AM Nanzer, ¹DJ Jackson. ¹Guy's Severe Asthma Centre, UK, London; ²Guy's and St Thomas Department of Radiology, London, UK; ³King's College London, London, UK

10.1136/thorax-2021-BTSabstracts.91

Background Eosinophil-rich mucus plugs are a recognised feature of asthma and are believed to contribute to airflow obstruction. However, little is known about the incidence of plugging in severe eosinophilic asthma (SEA) and the relationship of plugging to other characteristics of this phenotype. In addition, it is unknown whether patients with evidence of plugging have a differential response to the eosinophil depleting anti-IL-5R therapy benralizumab.

Methods Pre-biologic CT scans of patients with SEA treated with benralizumab were assessed by two radiologists independently. Patients were given a mucus score out of 20 (per segment plugged; score of 1–3 classed as plugging-low, score ³4 as plugging-high). Baseline characteristics and clinical outcome following 1 year of treatment was compared between patients with and without evidence of plugging.

Results CT scans of 116 patients with SEA were reviewed. 69/116 (59.5%) exhibited mucus plugging of which 40/116 (34.5%) were classed as plugging-high. Median (IQR) number of segments plugged was 4 (2–10.5). Baseline characteristics were similar between the plugging and no-plugging groups, with a trend towards lower baseline FEV₁ in the plugging group (p=0.06). Nasal polyposis was more frequent in the plugging-high group (45%) compared to plugging low (24%) and unplugged (21%) groups (ANOVA p=0.04). Response to benralizumab at 1 year was comparable between those with and without plugging: AER reduction 3.67±4.1 vs 3.17±3.47; change in ACQ6 0.73±1.1 vs 0.77±1.38; change in FEV₁% 6.72±17.35 vs 6.50±18.3 (all p=NS). The number of plugged segments at baseline did not correlate with improvement in FEV₁.

Discussion Mucus plugging is identified in 60% of patients with SEA and is more commonly seen at high levels in patients with co-morbid nasal polyposis. Individuals with SEA and mucus plugging have a similar clinical response to eosinophil targeted therapy with benralizumab compared to patients with SEA but absent plugging on CT imaging.