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Real-world outcomes with mepolizumab in patients with severe asthma and comorbid anxiety/depression: REALITI-A at 2 years

Chaudhuri R[1], Liu MC[2], Bagnasco D[3], Matucci A[4], Pilette C[5,6], Price RG[7], Demetriou L[8], Howarth P[9]

[1]Gartnavel General Hospital, Glasgow, UK; [2]Divisions of Allergy and Clinical Immunology, Pulmonary and Critical Care Medicine, Johns Hopkins Asthma and Allergy Center, Baltimore, MD, USA; [3]Allergy and Respiratory Diseases, DIMI Department of Internal Medicine, University of Genoa, Ospedale Policlinico San Martino, Genoa, Italy; [4]Immunoallergology Unit, Azienda Ospedaliero-Universitaria Careggi, University of Florence, Florence, Italy; [5]Department of Pulmonary Medicine, Cliniques Universitaires Saint-Luc, Brussels, Belgium; [6]Pole of Pneumology, ENT and Dermatology, Institute of Experimental and Clinical Research, UCLouvain, Brussels, Belgium; [7]Biostatistics, GSK, Stevenage, Hertfordshire, UK; [8]Value, Evidence & Outcomes, GSK, Stevenage, Hertfordshire, UK; [9]Global Medical, Specialty Care TA, GSK, Brentford, Middlesex, UK

Digital poster
Supplemental data
Narrated summary

Aims

- Mepolizumab is a humanised monoclonal antibody that specifically targets IL-5 and offers a precision medicine approach to management of severe asthma.[1]
- Across clinical and real-world studies, mepolizumab reduced exacerbation rates and OCS use, while improving asthma symptoms in patients with severe asthma.[2–7]
- Anxiety and depression are common comorbidities among patients with severe asthma, reported in up to 30% of patients; anxiety and depression can impact patient symptom control and quality of life.[8]
- Post hoc analyses of clinical trials have demonstrated clinical benefits of mepolizumab among patients with severe asthma and psychopathologic comorbidities[9]; however, equivalent real-world data are limited.
- This post hoc analysis of the REALITI-A full study population at 2 years aimed to assess whether the presence of anxiety or depression influenced real-world mepolizumab treatment outcomes in patients with severe asthma.

Methods

REALITI-A (GSK ID: 204710) Study design

Real-world Observational Prospective International Single arm

Patient eligibility criteria:
Clinical diagnosis of asthma
≥18 years of age
Newly prescribed mepolizumab
≥12 months relevant medical records prior to enrolment

Standard-of-care therapy, plus add-on:
Mepolizumab 100 mg SC
Initiation of mepolizumab was at the **physician's discretion**

Dataset
Safety: **823** patients
Treated: **822*** patients
84 centres
7 countries

Study enrolment period
Dec 2016 to Oct 2019
Pre-treatment period: **12 months** prior to enrolment
Follow-up period: **24 months**

Outcomes

- Rate of CSEs in the pre-treatment and 24-month follow-up periods†
- Change from baseline‡ in daily mOCS dose at Weeks 101–104§
- Change from baseline‡ in ACQ-5 score at Month 24**

Stratified by anxiety/depression comorbidity status at enrolment (post hoc):
1. Anxiety or depression
2. Anxiety
3. Depression

*Data were collected as part of routine asthma healthcare visits. *One patient was excluded from the treated population after initiating mepolizumab at 300 mg SC (approved dose for EGPA); †CSEs were defined as asthma deterioration requiring OCS for ≥3 days, or an SCS administration (or doubling the dose in patients on maintenance OCS), or an emergency room visit or hospitalisation. The rate of CSEs was analysed using a GEE model assuming a negative binomial distribution, with a covariate of treatment period (pre-treatment and follow-up); ‡baseline was defined as the 28 days preceding mepolizumab treatment; §mOCS calculated as prednisone equivalent dose; ‡baseline was defined as the 90 days preceding mepolizumab treatment; **analysis performed using MMRM with covariates of time point, country, baseline OCS therapy, and ordinal exacerbations during the pre-treatment period (0, 1, 2, 3, ≥4)*

Results

Table 1: Patient demographics and clinical characteristics at enrolment (N=822)

	Treated population (N=822)	Anxiety or depression status	
		With (n=203)	Without (n=582)
Age, years, mean (SD)	54.0 (13.6)	54.4 (12.5)	54.0 (13.9)
Female, n (%)	521 (63)	155 (76)	343 (59)
BMI, mean (SD)	n=819 29.0 (7.2)	n=202 32.4 (8.8)	n=580 27.9 (6.3)
Asthma duration, years, mean (SD)	n=801 19.7 (15.7)	n=198 22.3 (16.4)	n=571 18.9 (15.4)
Smoking history, n (%) Never smoked Former smoker Current smoker	n=816 503 (62) 290 (36) 23 (3)	n=202 113 (56) 80 (40) 9 (4)	n=577 369 (64) 194 (34) 14 (2)
BEC, cells/μL, geometric mean* (SD log)	n=614 350 (1.253)	n=146 251 (1.408)	n=443 397 (1.169)
Rate of CSEs, events/year	n=821 4.3	n=203 5.0	n=581 4.1
Patients with mOCS use†, n (%) mOCS dose, mg/day, median (95% CI)	320 (39) n=297 10.0 (5.0, 14.7)	85 (42) n=79 10.0 (6.0, 15.0)	216 (37) n=202 9.3 (5.0, 12.5)
ACQ-5 score*, LS mean (95% CI)	n=781 2.9 (2.8, 3.0)	n=193 3.4 (3.2, 3.5)	n=555 2.7 (2.6, 2.8)

Anxiety/depression comorbidity status data were not available for 37/822 patients treated.
**Latest record in the 90 days prior to mepolizumab initiation; †prednisone-equivalent dose in the 28 days prior to and including the mepolizumab initiation date*

Figure 1: At 24 months following mepolizumab treatment initiation, patients without anxiety or depression had a 77% decrease in the rate of CSEs, compared with 66% among those with anxiety or depression; similar results were observed among patients in the anxiety and depression subgroups

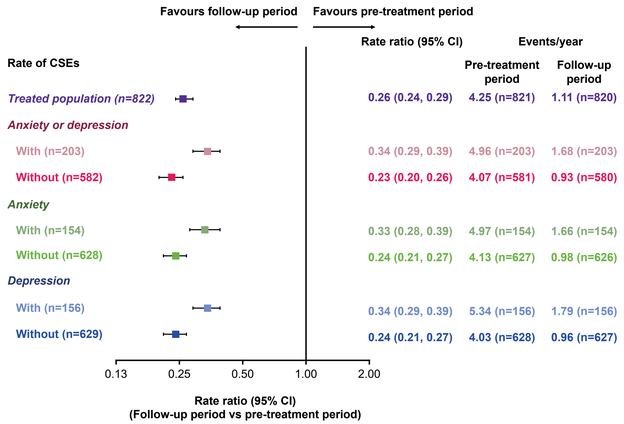
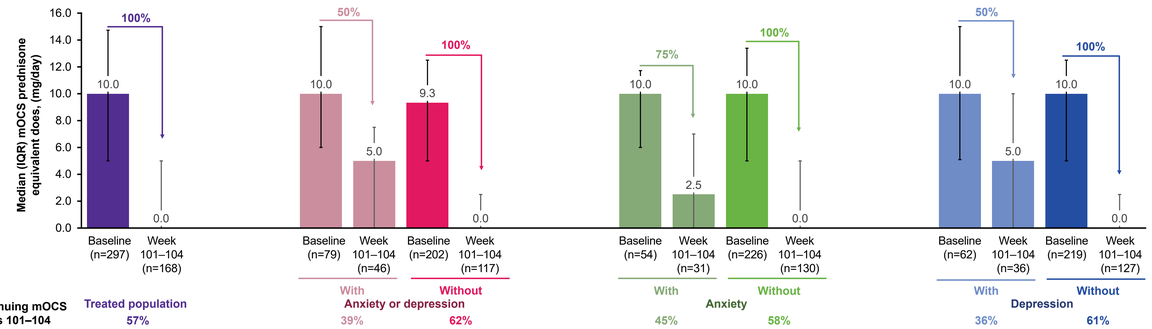


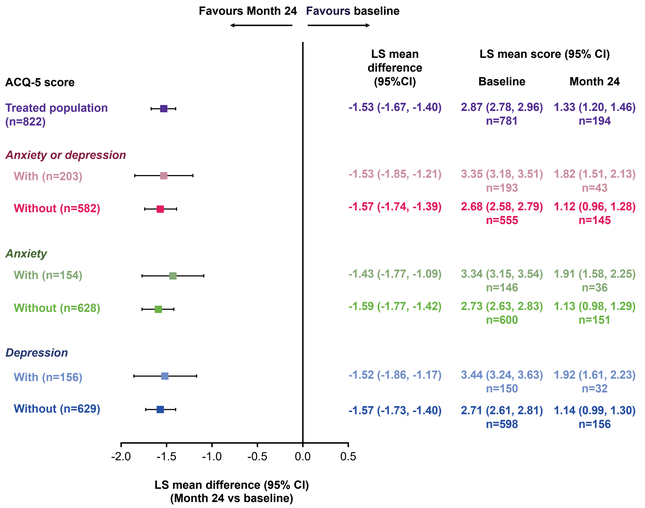
Figure 2: At Weeks 101–104, median mOCS dose decreased from baseline by 50–100% across all subgroups; greater reductions were observed among patients without each comorbidity; across all subgroups, 36–62% of patients discontinued mOCS



Conclusions

- At baseline, history of exacerbations in the last year, mOCS use, and mean ACQ-5 score were higher in patients with anxiety or depression versus those without, despite these patients having a lower geometric mean BEC.
- Following 2 years of mepolizumab treatment, patients with severe asthma had a reduced rate of CSEs, reduced median mOCS dose, and improved ACQ-5 scores, compared with the pre-treatment period, irrespective of presence of anxiety or depression.
- Patients with severe asthma with comorbid anxiety and/or depression had higher exacerbation rates, greater mOCS dose and worse ACQ scores post-mepolizumab treatment than those without these comorbid conditions, suggesting that these comorbidities influence clinical outcomes and should be considered as distinct treatable traits.
- Real-world mepolizumab treatment was effective among patients with severe asthma, with numerically greater improvements for those without comorbid anxiety or depression versus those with each of the comorbidities.

Figure 3: At Month 24, LS mean ACQ-5 score decreased from baseline by 1.43–1.59 points across all subgroups; the greatest decrease was seen among patients without anxiety



Abbreviations

ACQ, Asthma Control Questionnaire; BEC, blood eosinophil count; BMI, body mass index; CI, confidence interval; CSE, clinically significant exacerbation; EGPA, eosinophilic granulomatosis with polyangiitis; GEE, generalised estimating equation; IL, interleukin; IQR, interquartile range; log, logarithm; LS, least squares; MMRM, mixed model repeated measures; mOCS, maintenance oral corticosteroid; OCS, oral corticosteroid; SC, subcutaneous; SCS, systemic corticosteroids; SD, standard deviation.

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Presenting author: Rekha Chaudhuri, rekha.chaudhuri@ggc.scot.nhs.uk