# Clinician/Patient Perception: Asthma Severity Decreases and Response Increases With Continuing Versus Stopping Long-term Mepolizumab (COMET)

**Poster No. P211**

Liu MC[1], Bel EH[2], Kornmann O[3], Humbert M[4], Kaneko N[5], Smith SG[6], Martin N[7], Gilson MJ[8], Price RG[8], Yancey SW[6], Moore WC[9]

[1]Johns Hopkins Asthma and Allergy Center, Baltimore, MD, USA; [2]Amsterdam UMC, University of Amsterdam, Amsterdam, the Netherlands; [3]IKF Pneumologie Frankfurt, Clinical Research Centre Respiratory Diseases, Frankfurt, Germany; [4]Université Paris-Saclay, Paris, France; Assistance Publique- Hôpitaux de Paris, Hôpital Bicêtre, Le Kremlin-Bicêtre, Paris, France; and INSERM U999, Le Kremlin-Bicêtre, Paris, France; [5]Kameda Medical Center, Kamogawa, Japan; [6]GSK, Research Triangle Park, NC, USA; [7]GSK, Brentford, Middlesex, UK; and Institute for Lung Health, University of Leicester, Leicester, UK; [8]GSK, Stevenage, Hertfordshire, UK; [9]Wake Forest School of Medicine, Winston-Salem, NC, USA

## Background

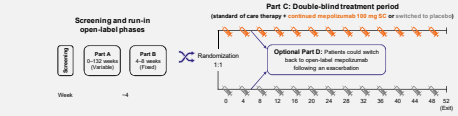
- Mepolizumab is approved for patients with severe eosinophilic asthma, eosinophilic granulomatosis with polyangiitis, and hypereosinophilic syndrome.[1]
- Clinical outcomes in patients with severe eosinophilic asthma who continued or stopped long-term mepolizumab treatment (treated for ≥3 years) have been evaluated in the COMET study (NCT02555371).[2]
- The perception of disease severity and response to therapy may be regarded as important health outcomes for patients.
- This eposter presents an analysis of clinician and patient perceptions of response to mepolizumab treatment in terms of asthma severity and overall response in patients who continued versus stopped mepolizumab after ≥3 years of mepolizumab treatment.

## Methods

**COMET (GSK ID: 201810)**
**Study design**

Randomized · Double-blind · Placebo-controlled · Multicenter · Parallel-group · Phase IIIb trial

**Severe eosinophilic asthma:**
- Continuous mepolizumab use for ≥3 years at randomization*
- Completed COLUMBA[1] or COSMEX[2] mepolizumab studies[3]
- Remained on controller therapy, throughout COLUMBA[1] or COSMEX[1,†]




**Endpoints (Part C)**

**Global Impressions of Disease Severity**** — Change in perception of asthma severity from baseline to Weeks 12, 24, 36,[††] and 52 — 4-point scale: mild, moderate, severe, very severe

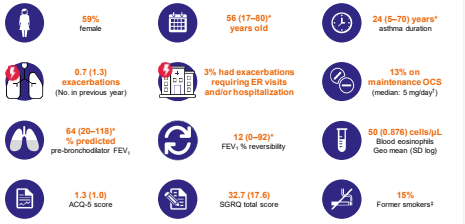
**Overall evaluation of response to therapy**[‡‡] — Change in perception of response at Weeks 12, 24, 36,[††] and 52 — 7-point scale: 1 = significantly improved; 2 = moderately improved; 3 = mildly improved; 4 = no change; 5 = mildly worse; 6 = moderately worse; 7 = significantly worse

**Perceptions assessed separately by:** Clinician | Patient

*With no treatment gaps >12 weeks between any two mepolizumab doses (84 days, equivalent to >2 consecutive missed doses); [1]COLUMBA (GSK ID MEA115666, NCT01691859); [2]COSMEX (GSK ID 201312; NCT02135692); [3]patients with a clinically significant health deterioration at completion of the studies were excluded; [†]patients with <80% adherence to controller medications during studies were excluded; **a single global question asked clinicians and patients to rate the patient's asthma severity; [††]data at Week 36 are not shown; [‡‡]this was an overall evaluation of response to treatment, as compared with baseline. SC, subcutaneous

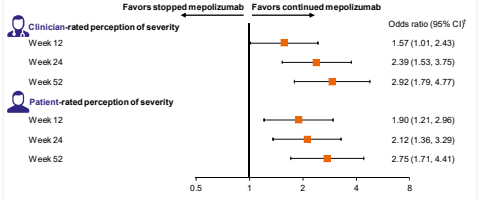
## Results

**Demographics and clinical characteristics at start of double-blind treatment period: all patients had previously been receiving mepolizumab for ≥3 years**



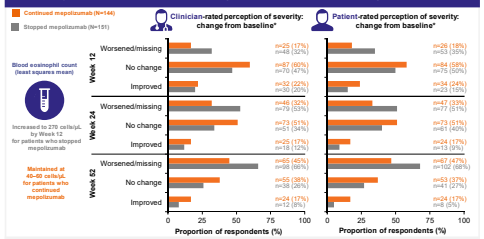

Values shown are for the intent-to-treat population (N=295); values are mean (SD) unless otherwise stated. *Age, duration of asthma and FEV1 are mean (range); †prednisolone equivalent, daily dose derived for patients who indicated at baseline that they were on regular maintenance OCS; ‡no current smokers. ACQ-5, Asthma Control Questionnaire 5; ER, emergency room; FEV1, forced expiratory volume in 1 second; OCS, oral corticosteroids; SD, standard deviation; SGRQ, St George's Respiratory Questionnaire

**Patients who continued versus stopped mepolizumab were more likely to have a milder Global Impression of Disease Severity rating* for asthma at assessed time points, whether clinician-rated or self-rated**



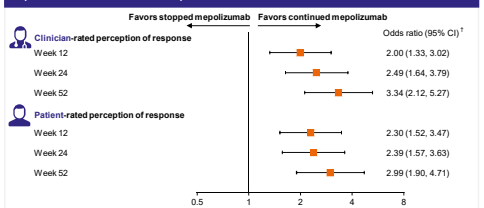

*Asthma severity was rated on a 4-point scale: 'mild', 'moderate', 'severe', 'very severe'; †P<0.001 for all time points except Week 12 (P=0.045 for clinician; P=0.005 for patient); ‡a milder asthma severity rating indicates a less severe response on the continuum of this rating scale at the given time point (eg, rating of 'very severe' in one patient compared with a rating of 'severe' in another patient). When a rating was not given/obtained, data were classed as missing for that time point. Missing data also includes patients who were switched back to open-label mepolizumab treatment as permitted within the study design. For analysis purposes, very severe and missing were combined into one category. Three patients with missing clinician-rated Global Impression of Disease Severity at baseline (prior to first dose of double-blind treatment) were not included in the analysis of clinician-rated perception of severity. Analyzed using a proportional odds model (multinomial [ordered] logistic generalized linear model), with terms for treatment group, region, baseline maintenance OCS therapy (OCS vs no OCS), exacerbations in the year prior to randomization (as an ordinal variable) and clinician or patient global impression of asthma severity rating at baseline (double-blind treatment period). CI, confidence interval

**Fewer patients continuing versus stopping mepolizumab had a perceived worsening (or missing response) in the Global Impression of Disease Severity rating for asthma versus baseline when assessed by both clinicians and patients, with greater proportions with no change or improvements**



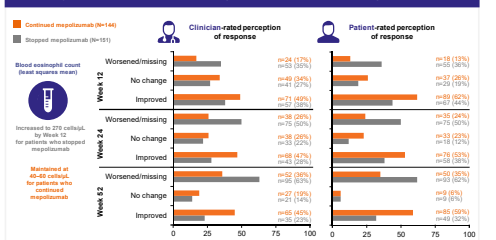

*Baseline (Week 0) denotes the latest available measurement prior to the first dose of double-blind treatment (mepolizumab 100 mg SC or placebo). Perceived asthma severity was rated on a 4-point scale: 'mild', 'moderate', 'severe', 'very severe'; comparisons were made versus the rating at baseline. 'Worsened/missing' indicates any category shift at the given time point towards worsening, and 'improved' indicates any category shift at the given time point towards improvement. Three patients with missing clinician-rated Global Impression of Disease Severity at baseline (prior to first dose of double-blind treatment) were not included. When the rating was not given/obtained, data were classed as missing for that time point. Missing data also includes patients who were switched back to open-label mepolizumab treatment as permitted within the study design. N, number of patients

**Positive perceived responses to therapy* were more likely with continuing versus stopping mepolizumab for both clinicians and patients**




*The overall evaluation of response to treatment as compared with baseline was rated on a 7-point scale. Responses included: 1 = significantly improved; 2 = moderately improved; 3 = mildly improved; 4 = no change; 5 = mildly worse; 6 = moderately worse; 7 = significantly worse; †P<0.001 for all time points; ‡a more favorable response to therapy rating indicates a response in the direction of improvement on the continuum of this rating scale at the given time point (eg, rating of 'significantly worse' in one patient compared with a rating of 'moderately worse' in another patient). When the rating was not given/obtained, data were classed as missing for that time point. Missing data also includes patients who were switched back to open-label mepolizumab treatment as permitted within the study design. For analysis purposes, significantly worse and missing were combined into one category. Analyzed using a proportional odds model (multinomial [ordered] logistic generalized linear model), with terms for treatment group, region, baseline maintenance OCS therapy (OCS vs no OCS) and exacerbations in the year prior to randomization (as an ordinal variable).

**Regarding the perception of response to therapy, fewer patients continuing versus stopping mepolizumab had a perceived worsening (or missing response) compared with baseline when assessed by both clinicians and patients, with greater proportions with no change or improvement**




*An improved response as compared with baseline includes patients who responded with 'significantly improved', 'moderately improved', and 'mildly improved'; a worsened response as compared with baseline includes patients who responded with 'mildly worse', 'moderately worse', 'significantly worse', or missing responses. When the rating was not given/obtained, data were classed as missing for that time point. Missing data also includes patients who were switched back to open-label mepolizumab treatment as permitted within the study design.

## Conclusions

- The clinician- and patient-perceived asthma severity rating was milder in patients who continued versus stopped mepolizumab.
- The clinician- and patient-perceived response to therapy also demonstrated more favorable responses for who continued mepolizumab versus those who stopped.
- These data suggest that continued mepolizumab treatment sustains the clinical benefits perceived by both clinicians and patients in severe eosinophilic asthma.

**Acknowledgments**

- This study was funded by GlaxoSmithKline (GSK ID: 201810; NCT02555371).
- On behalf of all authors, an audio recording of this poster was prepared by MCL, who did not receive any payment for this recording.
- MCL has received grants and personal fees from GSK, Gossamer Bio, and AstraZeneca. EHB has received grants for research from GSK, AstraZeneca, Teva and Novartis; and personal fees from AstraZeneca, GSK, Novartis, Sanofi/Regeneron, Teva, Sterna Biologicals and Chiesi. OK has received grants and personal fees from AstraZeneca, GSK, Novartis, Boehringer Ingelheim, Sanofi Aventis and Roche. MH has received personal fees from GSK, AstraZeneca, Novartis, Roche, Sanofi, and Teva. NK reports that he has nothing to declare. SGS, NM, MJG, RGP, and SWY are employees of GSK and own stocks/shares. WCM has received funding for clinical research and personal fees for participation in advisory boards from GSK, AstraZeneca, and Sanofi Regeneron.
- Editorial support (in the form of writing assistance, including development of the initial draft based on author direction, assembling tables and figures, collating authors' comments, grammatical editing and referencing) was provided by Roisin McCorkell, MSc, at Fishawack Indicia Ltd, UK, and was funded by GSK.

**References**

1. GSK. Mepolizumab prescribing information. Available from: https://www.gsksource.com/pharma/content/dam/GlaxoSmithKline/US/en/Prescribing_Information/Nucala/pdf/NUCALA-PI-PIL.PDF [last accessed October 6, 2020].
2. Moore WC, et al. *Am J Respir Crit Care Med* 2020;201:A4211.

Prepared for the American College of Allergy, Asthma & Immunology Annual Meeting (2020)