

Impact of Mepolizumab in Patients with Life-Threatening Asthma

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Aims

- Severe asthma (SA) is a heterogeneous disease that features a range of symptoms and includes a subgroup characterized by life-threatening asthma. This subgroup of SA was defined in COSMEX¹ and consisted of patients with any of the following: frequent asthma exacerbations, hospitalization for asthma, treatment with high doses of oral corticosteroids (OCS) and lifetime history of intubation with mechanical ventilation.
- The aim of this study was to examine the impact of mepolizumab on asthma exacerbations and use of OCS in a real-world group of patients with life-threatening asthma.

Methods

Study Design

- Retrospective analysis of US patients with commercial insurance and mepolizumab use 11/1/2015-12/31/2017 in the MarketScan® Commercial Claims and Encounters database

Inclusion/Exclusion Criteria

- ≥12 years of age with asthma diagnosis during baseline
- ≥12 months of continuous enrollment before (baseline) and after (follow-up) the 1st injection of Mepolizumab (index date)
- ≥2 doses of Mepolizumab in the first 6 months of follow-up
- ≥1 of the following:
 - ≥ 3 asthma exacerbations during baseline
 - ≥ 1 asthma-related hospitalization during baseline
 - Any previous history of endotracheal intubation
 - OCS dose ≥10mg prednisone equivalent in last 90 days of baseline
- No evidence of mepolizumab in baseline and no evidence other asthma biologics in the baseline/follow-up



Outcomes

Change in the Mean Rate of Asthma Exacerbations

- Hospitalization with primary diagnosis of asthma or outpatient/ED visit with asthma diagnosis AND a dispensing of a systemic corticosteroid within -4/+5 days



Change OCS Use

- Mean number of OCS claims during 12-month baseline
- Number of OCS bursts: average daily dose ≥20 mg prednisone equivalents for 3-28 days AND an outpatient/ED claim with a diagnosis of asthma -7/+6 days
- Chronic OCS use: mean daily dose ≥5mg prednisone equivalents over 12-month baseline or follow-up period
- % Reduction in mean daily dose



Results

Table 1. Baseline Demographic and Clinical Characteristics

Characteristics	N=327
Mean Age (SD)	49.6 (11.3)
Female, %	64.0
Geographic Region, %	
Northeast	20.0
North Central	25.0
South	41.0
West	13.0
Unknown	1.0
Asthma-related Comorbidities, %	
Allergic Rhinitis	69.1
Sinusitis	60.9
Acute	39.1
Chronic	45.9
Respiratory Infections	56.6
COPD	37.0
Nasal Polyps	22.0
EGPA	4.0

COPD=Chronic obstructive pulmonary disease; EGPA=Eosinophilic granulomatosis with polyangiitis

Figure 1. Relative Reduction in Mean Number of Asthma Exacerbations 12-Months Before and After Mepolizumab (N=327)

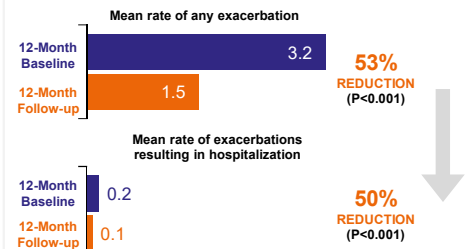


Figure 2. Relative Reduction in Mean Number of OCS Pharmacy Claims 12-Months Before and After Mepolizumab (N=327)

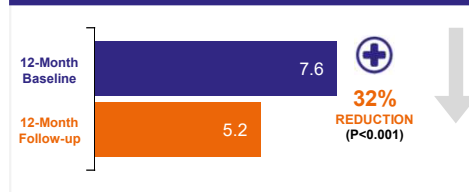


Figure 3. Relative Reduction in Mean Number of OCS Bursts 12-Months Before and After Mepolizumab (N=327)

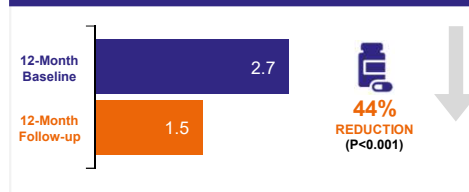


Figure 4. Relative Reduction in the Percent of Patients with Chronic OCS Use (≥5mg) 12-Months Before and After Mepolizumab (N=327)

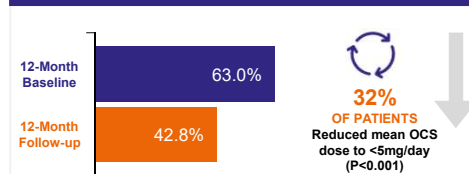
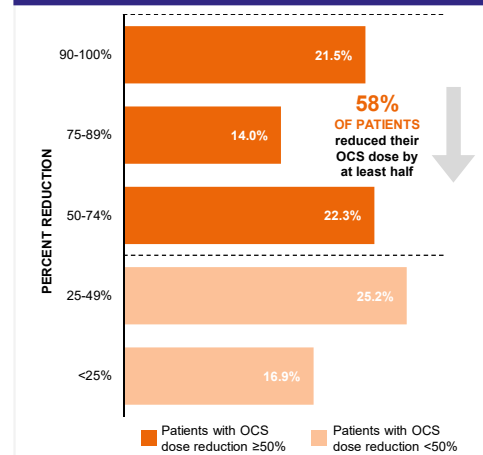


Figure 5. Percent Reduction in OCS Mean Daily Dose in the Follow-up Period Among Patients with a Reduction (N = 242)



Conclusions

- In this study, patients with life-threatening asthma have significantly fewer exacerbations and reduced use of OCS following treatment with mepolizumab.
- These results suggest that patients with the most severe asthma demonstrated clinically significant benefit from mepolizumab in a real-world setting.

Disclosures

- This study was funded by GlaxoSmithKline (GSK ID HO-19-19603/209656).
- On behalf of all authors, an audio recording of this poster was prepared by Jared Silver, who did not receive any payment for this recording.

- JS, MB, NM, and BH are GSK employees and hold stocks/shares. EP, DM, and JW are current employees of IBM Watson Health, a consulting company that has received research funds from GSK.

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References

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