Managing Patients with Severe Asthma and Common Comorbidities of Atopy, Obesity & Depression/Anxiety: Real-world Effectiveness of Mepolizumab

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Aims

- Mepolizumab has been shown to improve severe asthma control in clinical trials.[1-3] However, atopy, obesity, and depression/anxiety affect patients with asthma at an increased rate, yet few studies have examined asthma therapy with these comorbidities.
- This study examined the impact of mepolizumab in patients with severe asthma and atopy, obesity or depression/anxiety.

Methods

- This study was a retrospective analysis of US patients from 11/1/2014-12/31/2018 in the MarketScan® Commercial and Medicare Supplemental Database who were:
  - Patients with asthma
  - Beginning mepolizumab treatment
  - Diagnosed with atopy*, obesity, or depression/anxiety

Key inclusion criteria	Key exclusion criteria
• ≥ 12 years of age during baseline • Continuous enrolment with medical and pharmacy coverage during 12-month baseline and follow-up period • ≥ 1 asthma diagnosis during baseline • ≥ 1 diagnosis code during baseline for obesity, depression/anxiety, or atopic disease* • ≥ 2 mepolizumab administrations over 180 days from the index date	• Evidence of any biologic use during the baseline period • Evidence of a biologic other than mepolizumab during the follow-up period

*Atopic disease included allergic rhinitis, conjunctivitis, atopic dermatitis, food allergies, anaphylaxis, and eosinophilic esophagitis

Outcomes of Interest

Exacerbations | OCS claims | OCS bursts

- Patients were stratified into non-mutually exclusive subgroups based on the comorbidities of interest
- Exacerbations were defined as an asthma-related outpatient/emergency department (ED) claim with a claim for systemic corticosteroids 4 days pre- to 5 days post-event OR an inpatient hospital admission with an asthma diagnosis code in the primary position
- Oral corticosteroid (OCS) bursts were identified as a pharmacy claim with ≥20 mg/day prednisone equivalent for 3–28 days AND an asthma-related outpatient/ED claim 7 days pre- to 6 days post- pharmacy claim

Results

Table 1. Baseline patient demographics and clinical characteristics

Characteristics	Atopic (N=468)	Obesity (N=171)	Depression/anxiety (N=173)
Age, mean (SD)	51.0 (13.6)	52.4 (11.6)	50.5 (14.2)
Female, n (%)	275 (59.0)	120 (70.0)	124 (72.0)
Payer type, n (%)			
Commercial	423 (90.0)	153 (89.0)	153 (88.0)
Medicare	45 (10.0)	18 (11.0)	20 (12.0)
CCI score, mean (SD)	1.5 (1.1)	1.9 (1.4)	1.6 (1.1)
Medication Claims, n (%)			
ICS	202 (43.2)	63 (36.8)	84 (48.6)
ICS/LABA	295 (63.0)	103 (60.2)	109 (63.0)
LABA/LAMA	11 (2.4)	2 (1.2)	6 (3.5)
ICS/LABA/LAMA	99 (21.2)	43 (25.1)	40 (23.1)
SABA	391 (83.5)	150 (87.7)	144 (83.2)
LAMA	157 (33.5)	72 (42.1)	62 (35.8)
LTRA	370 (79.1)	141 (82.5)	128 (74.0)

CCI, Charlson Comorbidity Index; ICS, inhaled corticosteroids; LABA, long-acting β2-agonist; LAMA, long-acting muscarinic antagonist; LTRA, leukotriene receptor antagonist; SABA, short-acting β2-agonist; SD, standard deviation.

Table 2. Overlap between comorbidity subgroups

Subgroups, n (%)	Atopic (N=468)	Obesity (N=171)	Depression/anxiety (N=173)
Atopic	--	133 (78.0)	121 (70.0)
Obesity	133 (28.0)	--	55 (32.0)
Depression/anxiety	121 (26.0)	55 (32.0)	--

Figure 1. Mean number of overall exacerbations

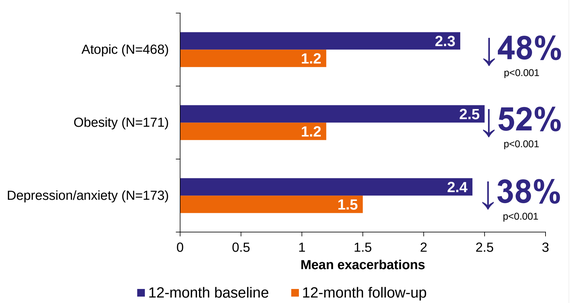


Figure 2. Mean number of exacerbations requiring hospitalizations

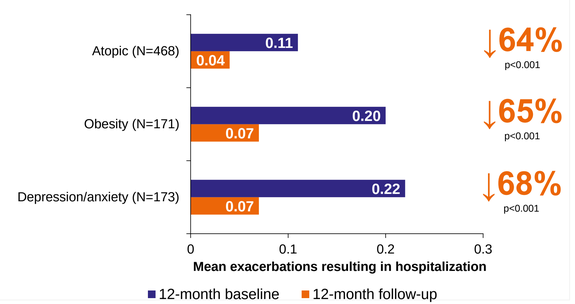


Figure 3. Mean number of OCS claims/bursts

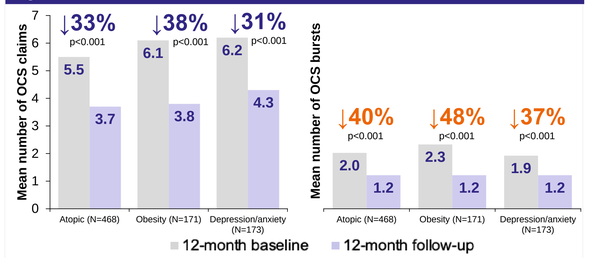
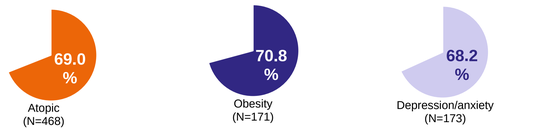


Figure 4. Proportion of patients with a decrease in mean OCS dose during the follow-up period



Conclusions

- This study demonstrates that patients with asthma and atopy, obesity or depression/anxiety have significantly fewer exacerbations and reduced OCS use in a real-world setting following treatment with mepolizumab
- Holistic patient care for severe asthma is critical and mepolizumab provides tangible clinical benefit despite the complexities of medical comorbidities

References

1. Bel EH, et al. *N Eng J Med* 2014;371:1189-97
2. Ortega HG, et al. *N Eng J Med* 2014;371:1198-207
3. Pavord ID, et al. *Lancet* 2012;380:651-9

Disclosures

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- JS, MB, and BH are GSK employees and hold stocks/shares. NM is a former GSK employee. TC is a current employee of the University of South Florida and has received research funds from GSK. 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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