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An Assessment of Asthma Control in a Real-world Setting

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BACKGROUND

- Current asthma treatment guidelines emphasize the importance of achieving and maintaining asthma control.[1] Despite current therapeutic approaches, asthma control remains suboptimal in a significant proportion of patients.[2-3]
- Real-world data that describe the degree of uncontrolled asthma by Global Initiative for Asthma (GINA) step are limited
- Additionally, limited data exist that characterize uncontrolled asthma according to disease severity, as defined by ICD-10 diagnosis code

OBJECTIVES

- **Primary:** Increase understanding of the degree of asthma morbidity in a real-world setting in the context of GINA 2019
- **Secondary:** Assess the degree of uncontrolled asthma by disease severity and by GINA step

METHODS

- This was a retrospective analysis of anonymized patient claims data from Symphony Health from 10/2013 through 10/2018
- Participants were adults (age ≥ 18 years) who had ≥ 2 claims indicating asthma on separate dates during a 24-month window, were classified by GINA 2019 step, and were assigned an ICD-10 code for diagnosed severity
- Uncontrolled asthma was broadly defined in patients meeting one or more of the criteria summarized in **Figure 1**
- Patients unable to be classified by GINA 2019 were excluded; these were mainly untreated patients and those receiving GINA 5 "add-on" therapies in the absence of inhaled corticosteroids (ICS)
- The current analysis is a revised version of the original analysis (based on GINA 2018 criteria) to reflect the GINA 2019 classification

Figure 1. Definition of "Uncontrolled Asthma"

Patients who….

"Stepped-up" to a higher GINA stage **OR** Increased ICS dosing or added an LTRA, LAMA, or biologic **OR** Utilized OCS, had an asthma-related ER visit, or had an asthma-related hospitalization

LAMA, long-acting muscarinic antagonist; LTRA, leukotriene receptor antagonist; OCS, oral corticosteroid

RESULTS

- From a total sample of 23.9 million patients, approximately 1.1 million met the criteria for inclusion (**Figure 2**)

Figure 2. Retrospective Adult Asthma Cohort

Symphony Health® U.S. administrative claims 10/31/2013 to 10/31/2018; unique patients with ≥ 1 claim with an asthma diagnosis code

N = 23.9 million

↓

Patients ≥ 18 years of age with ≥ 2 asthma claims on separate dates within a 24-month window who were classified by GINA step and ICD-10 code

N = 938,951 in Year 1

N = 1,141,011 in Year 2

(increase due to patients coming into GINA paradigm)

- Most patients in the cohort were classified as mild (65%) according to ICD-10 codes; 29% were moderate, and 6% were severe
- When disease severity was segmented by GINA step, ~50% of GINA 4 and GINA 5 patients were labeled as mild, whereas ~10% of patients were severe (**Figure 3**)

Figure 3. Asthma Severity (ICD-10) by GINA 2019 Step (N = 1,141,011)

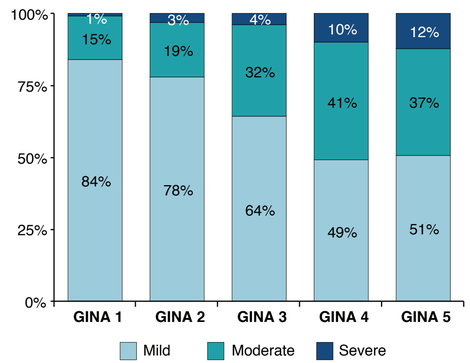
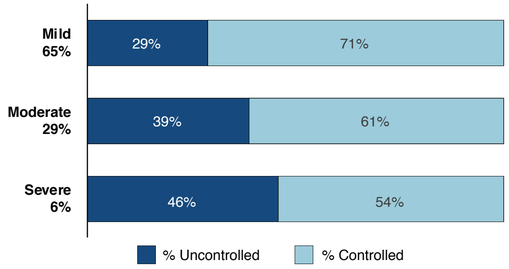
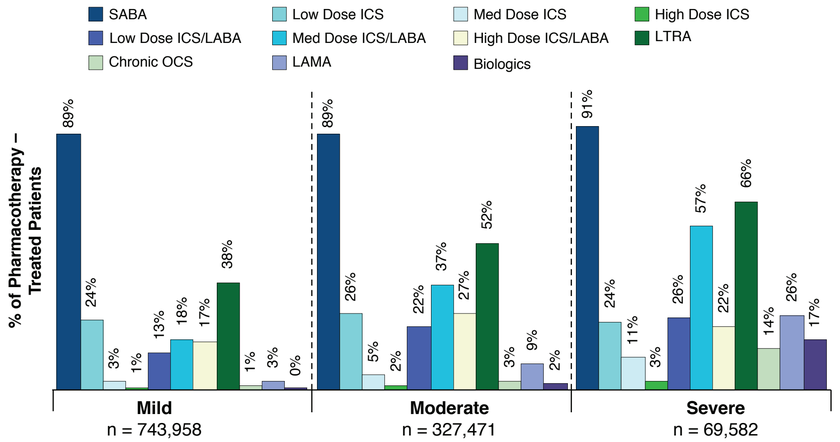


Figure 4. Asthma Control by Disease Severity (ICD-10) (N = 1,141,011)



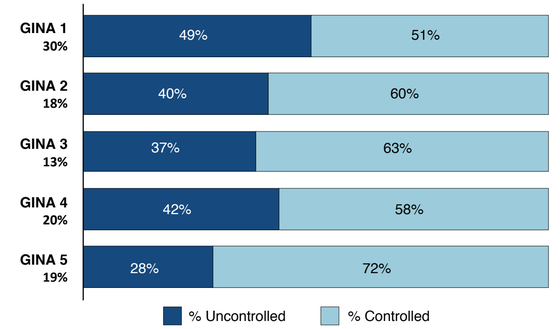
- When asthma control was evaluated by severity (ICD-10) only (without consideration of current treatments), the proportion of uncontrolled asthma, was higher with increased disease severity (**Figure 4**)
- While nearly one-third of mild patients were uncontrolled, nearly half of the severe patients were uncontrolled
- These data support the concept that asthma control is not synonymous with disease severity; patients at all levels of disease severity can experience loss of asthma control

Figure 5. Drug Class Utilization by Asthma Severity (N = 1,141,011)



- When evaluating treatment utilization by disease severity (**Figure 5**):
  - Medium-dose ICS (± LABA) was used in ~20% of patients with mild disease and in ~40% of those with moderate disease. Nearly 70% of severe patients received medium-dose ICS.
  - High-dose ICS (± LABA) was used in 30% of patients with moderate disease. Notably, only one quarter of severe patients were treated with a high-dose ICS-based regimen despite a higher severity of disease.
  - These data suggest that physicians are inclined to prescribe medium-dose ICS over high-dose ICS in patients with severe disease

Figure 6. Uncontrolled Asthma by GINA 2019 Step (n = 938,951)



- In contrast to the analysis by ICD-10 coding, uncontrolled asthma by GINA step was highest in GINA step 1 (49%) and lowest in GINA step 5 (28%) (**Figure 6**)
- This suggests that asthma control increases with more aggressive therapy

CONCLUSIONS

- These findings highlight the persistence of uncontrolled asthma, regardless of GINA step or disease severity classification by health care provider assessment
- While there was a direct association between uncontrolled asthma and disease severity by ICD-10 code, the proportion of patients with uncontrolled asthma was inversely correlated with GINA stage
- An unexpected finding was the large percentage of patients in steps GINA 1 and 2 who remain uncontrolled
- Taken together, these data suggest that employing more aggressive therapy leads to increased asthma control
- Further efforts are needed to improve the level of asthma control through development of effective treatment approaches across all GINA steps

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DISCLOSURES

EZ, GN, KD, and HO are employees of Gossamer Bio, Inc., and hold stock/shares in Gossamer Bio, Inc.

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