

Corticosteroid Use Across Asthma Healthcare Providers: A Real-world Experience

Fernando Holguin, MD, MPH¹, Nicola A. Hanania, MD, MS², Emily Pennington, MD³, William Busse, MD⁴, Ryan Tubman, MS⁵, Ellen Zigmont, PharmD⁶, Gina Nelson, MBA⁶, Karen Dittrich, PhD⁶, Hector Ortega, MD, ScD⁶, Carlos A. Camargo, Jr., MD, DrPH⁷

¹University of Colorado School of Medicine, Denver, CO, USA; ²Baylor College of Medicine, Houston, TX, USA; ³Cleveland Clinic, Cleveland, OH, USA; ⁴University of Wisconsin, Madison, WI, USA; ⁵Clearview Healthcare Partners, San Francisco, CA, USA; ⁶Gossamer Bio Inc., San Diego, CA, USA; ⁷Massachusetts General Hospital, Boston MA, USA

BACKGROUND

- Oral corticosteroids (OCS) are widely used as frontline treatment in a variety of chronic inflammatory diseases, including asthma^{1,2}
- Even at low doses, use of OCS is associated with risk of acute and chronic adverse events, and this risk increases with dose, duration, and/or frequency of use³⁻⁵
- The comorbidities associated with both chronic and repeated short-term use of OCS increase patients' clinical burden and overall healthcare expenditure³⁻⁵
- Limited data are available characterizing the patterns of OCS use, including dose and duration, across healthcare providers (HCPs) treating asthma

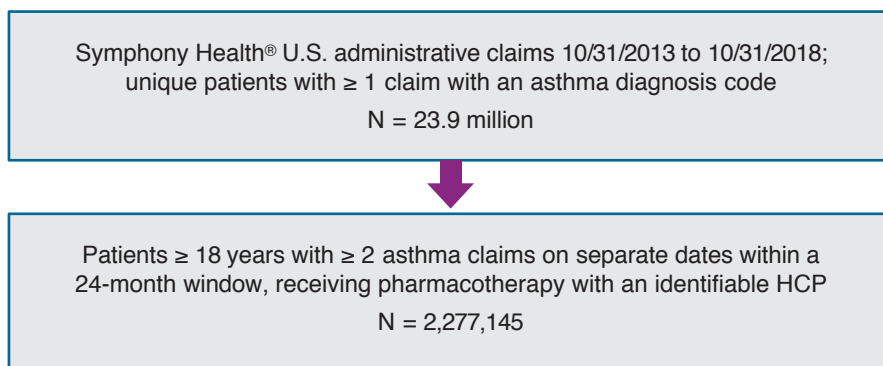
OBJECTIVES

- To quantify and characterize patterns of OCS utilization among primary care physicians (PCPs), allergists, and pulmonologists
- To examine differences in prescribed dose and duration of OCS treatment among HCPs

METHODS

- A retrospective analysis was conducted using asthma claims from Symphony Health[®] for the period October 31, 2013 – October 31, 2018
- This retrospective cohort included adults (age ≥ 18 years) who had ≥ 2 claims indicating asthma on separate dates during a 24-month window and were receiving pharmacotherapy from an identifiable HCP (Figure 1)
- OCS treatment patterns, including dose and duration of therapy, were assessed in the cohort by HCP type (PCPs, allergists, pulmonologists)
- Patients were also segmented by HCP type according to the Global Initiative for Asthma treatment (GINA 2018)
- Acute and chronic OCS treatment was defined as continuous use for < 6 months and ≥ 6 months, respectively
- High-, medium-, and low-dose OCS was defined as > 10 mg, 5-10 mg and < 5 mg daily

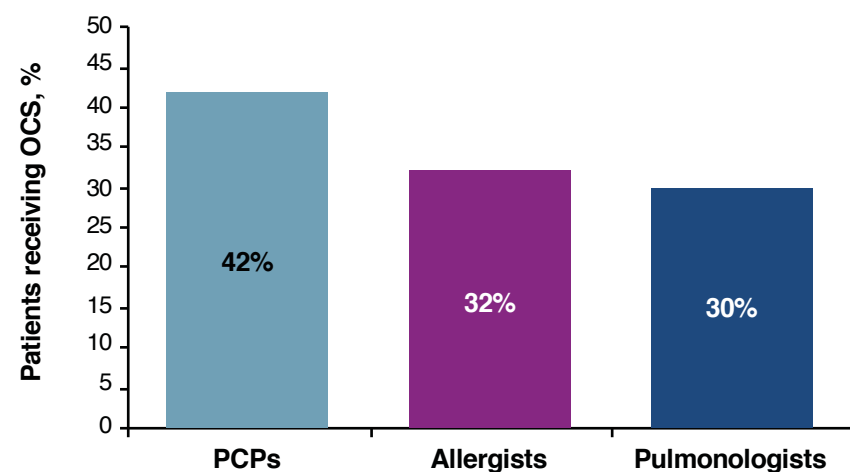
Figure 1. Retrospective Adult Asthma Cohort



RESULTS

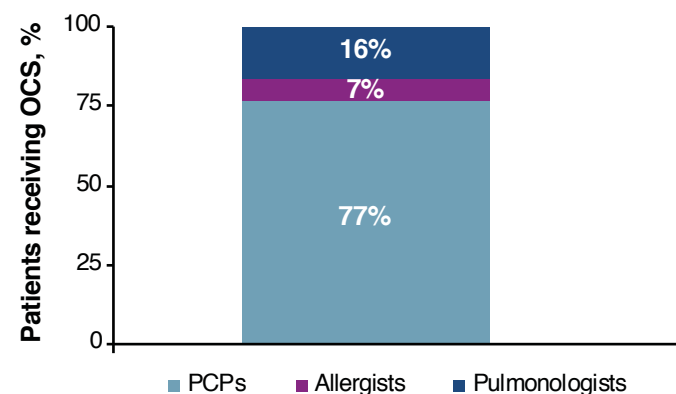
- 1,449,657 patients (~65% of the eligible cohort) received at least one prescription for OCS for the treatment of asthma
- The proportion of patients prescribed acute and/or chronic OCS was higher among PCPs compared to allergists and pulmonologists (Figure 2)

Figure 2. OCS utilization rates by HCP category



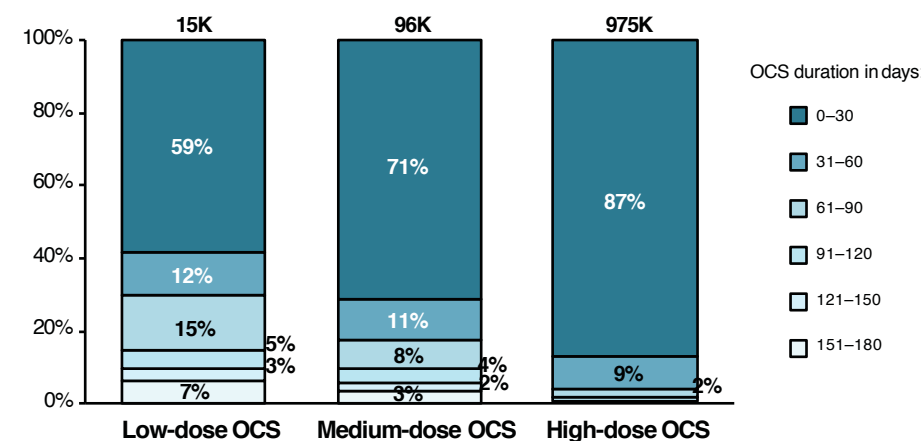
- PCPs accounted for 77% of all OCS use when specialty-specific utilization rates were weighted by total patients (Figure 3)

Figure 3. Weighted specialty-specific OCS utilization rates¹



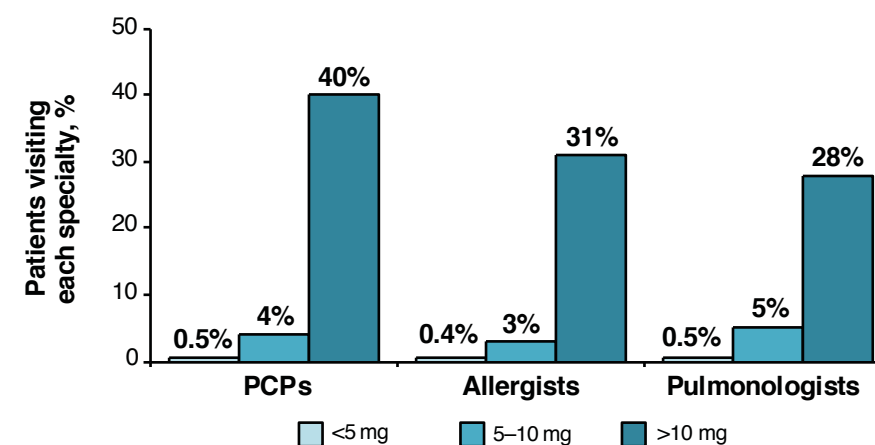
- Overall, the majority of OCS use was classified as acute (> 80%)

Figure 4. Acute OCS treatment by dose and duration



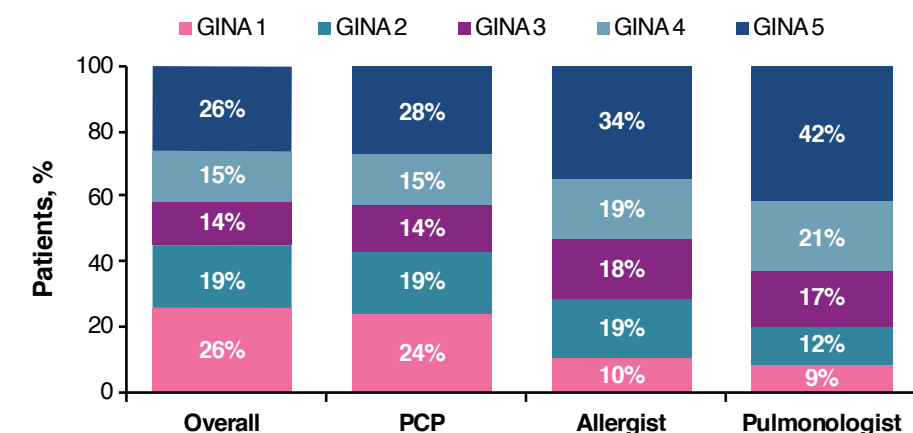
- Among all HCPs, OCS doses > 10 mg/day were most commonly prescribed and associated with a shorter duration of therapy (Figures 4,5)
- An OCS prescription duration ≤ 30 days accounted for 89%, 88%, and 77% of acute, high-dose OCS prescriptions written by PCPs, allergists, and pulmonologists, respectively
- Relative to PCPs and allergists, pulmonologists more commonly prescribed low-, medium-, and high-dose OCS for durations > 1 month (data not shown)

Figure 5. Specialty-specific acute OCS utilization by dose group



- GINA 4 and 5 patients comprised a larger proportion of allergists' (53%) and pulmonologists' (63%) practices compared to PCPs (43%) (Figure 6, n = 2,093,761 patients able to be classified by GINA 2019 step)

Figure 6. GINA step (2019) by HCP specialty



CONCLUSIONS

- Within this insured population of adult patients, the vast majority of OCS use was acute, for durations of less than one month
- PCPs account for the majority of all OCS use in asthma when compared to allergists and pulmonologists
- Pulmonologists were more likely to extend the duration of acute OCS relative to PCPs
- A large proportion of patients receive daily doses of OCS >10 mg, increasing the potential risk of OCS-associated complications
- Use of OCS remains widespread among patients with asthma, emphasizing the high level of uncontrolled asthma and the need for new, novel therapies

REFERENCES

1. Hanania NA et al. Oral Corticosteroid Use Patterns in Asthma GINA 4 and 5 Patients in a US Commercially Insured Population. *AJRCCM* 2019; 199:A1269.
2. Humbert M, Busse W, Hanania NA. Controversies and opportunities in severe asthma. *Curr Opin Pulm Med* 2018; Jan 24(1):83-89.
3. Bleeker et al. Systematic Literature Review of Systemic Corticosteroid Use for Asthma Management. *AJRCCM* 2020 Feb; 201(3):276-293
4. Manson SC et al. The cumulative burden of oral corticosteroid side effects and the economic implications of steroid use. *Respir Med* 2009;103:975-994.
5. Lefebvre P et al. Acute and chronic systemic corticosteroid-related complications in patients with severe asthma. *JACI* 2015;136(6):1487-1495

ACKNOWLEDGEMENTS

Funded by GB001, Inc., a wholly owned subsidiary of Gossamer Bio, Inc.

DISCLOSURES

Zigmont E, Nelson G, Dittrich K, and Ortega H are employees of Gossamer Bio, Inc., and hold stock/shares in Gossamer Bio, Inc.