

Treatment Patterns and Disease Burden of Triple Therapy in Asthma

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Background

- The Global Initiative for Asthma guidelines recommend LAMA as an add-on option for asthma patients (steps 4/5) symptomatic on ICS and LABA.¹
- Real-world data describing current use of triple therapy in asthma is limited.
- This study estimated the prevalence of multiple inhaler triple therapy (MITT) use in the U.S., and described treatment patterns and healthcare resource utilization among asthma patients initiating MITT.

Methods

- This is a retrospective cohort study of Optum Research Database medical and pharmacy claims and electronic health record data. Subjects were identified as having evidence of multiple inhaler triple therapy use between January 01, 2014 and July 31, 2017.

Key inclusion criteria

Key exclusion criteria



- Treatment with MITT (≥1 day of overlap for ICS + LABA + LAMA).
- The index date was defined as the first date with all three triple therapy components
- ≥1 asthma diagnosis in any position in the 12-mo baseline period (Appendix 2); the index date was included in the baseline period.
- ≥1 asthma diagnosis in any position in the 12-mo follow-up period; the index date was excluded from the follow-up period.
- Age ≥18 years as of the year of the index date.
- Continuous enrollment with medical and pharmacy coverage of 12 months in the baseline period and of 12 months in the follow-up period.



- Evidence of MITT in the baseline period prior to index date.
- ≥1 COPD diagnosis in any position in the baseline or follow-up periods.
- ≥1 cystic fibrosis, acute respiratory failure, or lung cancer diagnosis in any position in the baseline or follow-up periods
- Unknown gender, geographic region, or insurance type

Outcomes

Prevalence of MITT Use Among Asthma Patients

Among New Users of MITT

- MITT adherence (mean PDC ≥ 0.8) as measured by Proportion of Days Covered (PDC)
- MITT persistence as measured by time to treatment discontinuation (>45-day gap)
- All-cause and asthma-related healthcare costs
- Asthma exacerbation costs

Results

Figure 1. Annual Prevalence of MITT among Asthma Patients (N=1,111,228)

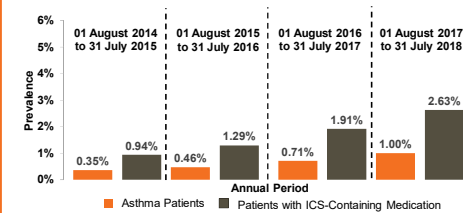


Figure 2. Adherence to MITT in the 12-mo Follow-Up Period

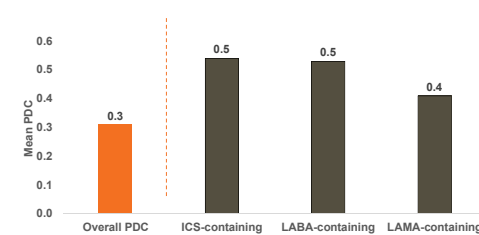


Table 1. Baseline Patient Characteristics and Healthcare Resource Use

Baseline Characteristics	MITT Users (N = 1,831)
Age, mean (SD)	56.1 (14.4)
18 – 44 years old	20.9
45 – 64 years old	49.0
65+ years old	30.0
Female, (%)	66.7
Race/Ethnicity, (%)	
White or Caucasian	47.6
Black or African American	6.9
Hispanic	6.6
Asian	2.5
Other/Unknown	36.4
Select Comorbidities, (%)	
Allergic Rhinitis	57.5
Cardiovascular Disease	52.3
Hypercholesterolemia	45.0
Baseline Asthma Controller Use, (%)	90.4%
Asthma-related Healthcare Utilization, (%)	
Ambulatory Visit	84.5
Urgent Care Visit	1.1
Emergency Department Visit	9.3
Inpatient Stays	3.6
Annual Asthma-related Total Healthcare Costs, mean (SD), in USD (\$)	4,558 (8,527)

Abbreviations: MITT, Multiple Inhaler Triple Therapy; SD, Standard Deviation; USD, United States Dollar

Figure 3. Time to Treatment Discontinuation in the 12-mo Follow-Up Period (>45-day treatment gap)

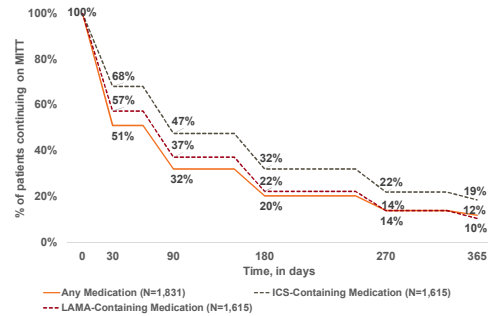


Figure 4. All-cause and Asthma-Related Inpatient and ER Costs by Adherence in the Follow-Up Period

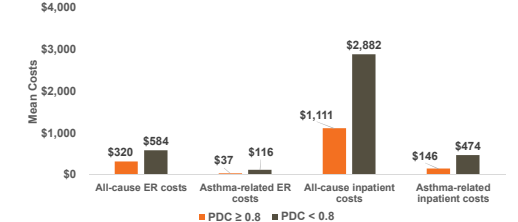
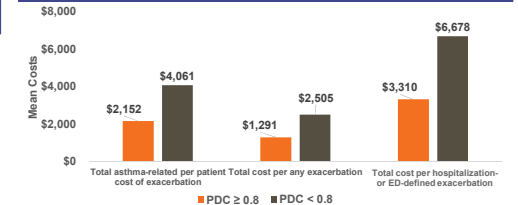


Figure 5. Exacerbation-related Costs by Adherence in the Follow-Up Period



Conclusions

- Patients with asthma using triple therapy had low adherence and persistence to MITT.
- Adherence to each component of triple therapy were demonstrably higher, suggesting that patients are not using all three components simultaneously
- Patients with higher adherence had lower all-cause and asthma-related inpatient and ER costs, as well as exacerbation costs
- Simplifying the inhaler regimen could improve adherence and persistence in patients with asthma treated with triple therapy

- References
- Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018.

- Disclosures
- This study was funded by GSK (HO-18-18557).
 - MB and CA are current employees of GSK and hold stocks/shares. BC, JW, and KS* are current employees of Optum and have received research funds from GSK. *At the time of the study.

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