Changes in Oral Corticosteroid Utilization in Patients with COPD Following Initiation of FF/UMEC/VI

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GlaxoSmithKline
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Purpose

- OCS play a role in the treatment of COPD and are beneficial when used to treat acute exacerbations
  - However, chronic use is not recommended due to the high rate of systemic complications
- Data assessing the real-world impact of FF/UMEC/VI on rates of OCS utilization are limited
- This study assessed the impact of FF/UMEC/VI on OCS use among patients with COPD previously treated with OCS
  - Data source: MarketScan Commercial and Medicare Supplemental Databases

Study design

Index date:
First date with FF/UMEC/VI between
Nov 1, 2017, and Dec 31, 2018

12-month pre-index period:
- Index demographic characteristics
- Pre-index clinical characteristics
- OCS use patterns
- Prevalence of OCS-related AE
- All-cause and COPD-related HCRU and costs

12-month post-index period:
- OCS use patterns
- Prevalence of OCS-related AE
- All-cause and COPD-related HCRU and costs

AE, adverse event; COPD, chronic obstructive pulmonary disease; FF, fluticasone furoate; HCRU, healthcare resource use; OCS, oral corticosteroids; UMEC, umeclidinium; VI, vilanterol
Patient population

Inclusion criteria:

- Between November 1, 2017, and December 31, 2018:
  - ≥1 inpatient claim with a diagnosis of COPD in the primary position, or
  - ≥2 non-diagnostic outpatient claims with a diagnosis of COPD with different service dates
  - ≥1 pharmacy claim for FF/UMEC/VI (index date)
- ≥40 years old at diagnosis
- ≥12 months’ continuous enrollment pre- and post-diagnosis, and pre- and post-index
- ≥1 OCS pharmacy claim in the 12 months prior to index

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Overall (N=2,013)</th>
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<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
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<tr>
<td>Age, years, mean (SD)</td>
<td>63.5 (10.2)</td>
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<tr>
<td>Female, n (%)</td>
<td>1,122 (55.7)</td>
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<td>Insurance type, n (%)</td>
<td></td>
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<tr>
<td>Commercial</td>
<td>1,279 (63.5)</td>
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<td>Medicare</td>
<td>734 (36.5)</td>
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<tr>
<td><strong>Clinical</strong></td>
<td></td>
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<tr>
<td>Baseline Charlson Comorbidity Score, mean (SD)</td>
<td>2.4 (1.9)</td>
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<tr>
<td>Infection, n (%)</td>
<td>1,576 (78.3)</td>
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<tr>
<td>Hypertension, n (%)</td>
<td>1,368 (68.0)</td>
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<tr>
<td>Hyperlipidemia, n (%)</td>
<td>1,114 (55.3)</td>
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<tr>
<td>Asthma, n (%)</td>
<td>673 (33.4)</td>
</tr>
</tbody>
</table>

SD, standard deviation
Mean number of OCS claims per patient (pre- and post-index)

- 12-month pre-index: 3.3
- 12-month post-index: 2.5

Mean number of OCS claims per patient: 3.3

24.2% relative reduction (p<0.001)

Percentage reduction in mean daily OCS dose among patients with a reduction (N=1,302) (post-index)

- 0–49%: 25.7%
- 50–74%: 18.5%
- 75–89%: 9.5%
- 90–100%: 46.3%

Reduction in mean daily OCS dose

Proportion of patients with OCS claim (pre- and post-index)

- 12-month pre-index period: 100.0%
- 12-month post-index period: 67.8%

Proportion of patients with OCS claim: 67.8%

32.2% relative reduction (p<0.001)

Mean number of OCS bursts (pre- and post-index)

- 12-month pre-index: 1.2
- 12-month post-index: 0.8

Mean number of OCS bursts per patient: 0.8

33.3% relative reduction (p<0.001)

OCS bursts had an average daily dose of ≥20 mg prednisone equivalents for 3–28 days, alongside an outpatient or emergency department claim with a diagnosis of COPD in any position -7/6+ days of the pharmacy claim.
Similar results were seen for all-cause HCRU

COPD-related healthcare utilization

- Inpatient admissions: Pre-index period (n=2,013) 11.4%, Post-index period (n=2,013) 7.1%
- Outpatient ER visits: Pre-index period (n=2,013) 23.1%, Post-index period (n=2,013) 17.4%
- Outpatient office visits: Pre-index period (n=2,013) 97.5%, Post-index period (n=2,013) 90.1%
- Outpatient pharmacy claims: Pre-index period (n=2,013) 100%, Post-index period (n=2,013) 99.2%

P < 0.001 for all comparisons

ER, emergency room
Conclusion

- Among COPD patients with prior OCS use, the initiation of FF/UMEC/VI resulted in significant reductions in OCS utilization, COPD-related HCRU (including hospitalization), and all-cause HCRU

Clinical implication

- Long-term use of OCS has been shown to lead to AEs
- In patients with a history of OCS use, physicians should consider changing maintenance COPD therapy to reduce potential adverse effects associated with daily OCS utilization
- This study suggests that OCS use can be reduced in patients on daily OCS who initiate (or switch to) FF/UMEC/VI from their previous maintenance regimen