HSD52

# Examining Treatment Patterns of Topical Therapies Among Adolescent and Adult Patients With Atopic Dermatitis in the United States

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## Introduction

- Atopic dermatitis (AD) is a highly pruritic inflammatory skin disease[1]
- Topical treatments, such as topical corticosteroids (TCS), topical calcineurin inhibitors (TCI), and the phosphodiesterase-4 inhibitor crisaborole, are commonly used as first-line treatments for patients with AD[2,3]
- Many patients do not achieve adequate disease control with topical first-line therapies and are escalated to systemic agents, such as oral corticosteroids (OCS) and biologics (eg, dupilumab)[4,5]
- The exact treatment patterns used by patients with AD in the United States and the extent of systemic treatment use after initial topical treatment have not been thoroughly examined

## Objective

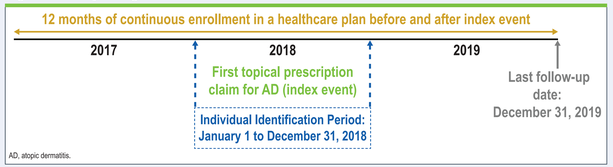
- To describe treatment patterns in US individuals with AD during the first 12 months of topical treatment using data from a US claims database

## Methods

### *Study Design*

- This was a retrospective observational study using data from the IBM MarketScan Commercial and Medicare supplemental claims database between 2017–2019 (**Figure 1**)
- Eligible individuals were ≥12 years old with ≥1 medical claim for AD in 2018 and 12 months of continuous enrollment in a healthcare plan before and after the first topical prescription claim for AD (index event)
- Individuals with a history of topical AD prescriptions in the 12 months before the index event were excluded

**Figure 1. Study Design**




AD, atopic dermatitis.

### *Assessments*

- Demographics and clinical characteristics were summarized at the individual level
- Treatment patterns were summarized based on prescription claim refills during the 12 months after the index event
- Data are reported using descriptive statistics

## Results

### *Population Characteristics*

- A total of 47,572 individuals were included in the analysis
  - Mean (SD) age was 38.0 (18.8) years, and 63.7% were female
  - The most common comorbid conditions included allergic rhinitis (27.2%), asthma (15.7%), and major depressive disorder (11.9%)
- Distribution of baseline demographics and clinical characteristics was similar across treatment groups (**Table 1**)
- At the index event, the initial topical treatments prescribed were medium-potency TCS (n=20,849; 43.8%), high-potency TCS (n=10,675; 22.4%), low-potency TCS (n=9822; 20.6%), TCI (n=3107; 6.5%), and crisaborole (n=2725; 5.7%)
  - A small number of individuals were prescribed dupilumab as initial treatment (n=394; 0.8%)

**Table 1. Demographics and Baseline Clinical Characteristics by Initial Treatment Group**

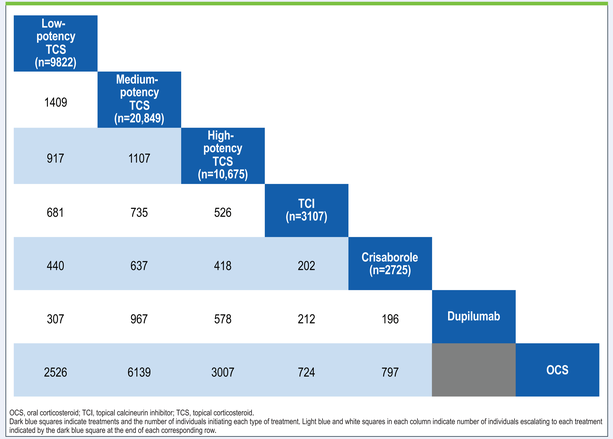
| Characteristic | Low-potency TCS (n=9822) | Medium-potency TCS (n=20,849) | High-potency TCS (n=10,675) | TCI (n=3107) | Crisaborole (n=2725) | Total (N=47,572)* |
|---|---|---|---|---|---|---|
| Age, mean (SD), y | 36.0 (19.2) | 39.9 (18.8) | 36.9 (18.7) | 36.1 (17.8) | 35.5 (17.7) | 38.0 (18.8) |
| 12–17 y, n (%) | 2424 (24.7) | 3300 (15.8) | 2304 (21.6) | 682 (22.0) | 642 (23.6) | 9357 (19.7) |
| ≥18 y, n (%) | 7398 (75.3) | 17,549 (84.2) | 8371 (78.4) | 2425 (78.1) | 2083 (76.4) | 38,215 (80.3) |
| Female, n (%) | 6558 (66.8) | 12,870 (61.7) | 6673 (62.5) | 2115 (68.1) | 1856 (68.1) | 30,294 (63.7) |
| Region, n (%) | | | | | | |
| South | 3969 (40.4) | 10,312 (49.5) | 4874 (45.7) | 1246 (40.1) | 1320 (48.4) | 21,894 (46.0) |
| Northeast | 2642 (26.9) | 4329 (20.8) | 2408 (22.6) | 943 (30.4) | 658 (24.2) | 11,061 (23.3) |
| North Central | 1810 (18.4) | 3413 (16.4) | 1720 (16.1) | 497 (16.0) | 394 (14.5) | 7911 (16.6) |
| West | 1354 (13.8) | 2734 (13.1) | 1643 (15.4) | 410 (13.2) | 352 (12.9) | 6555 (13.8) |
| Unknown | 47 (0.5) | 61 (0.3) | 30 (0.3) | 11 (0.4) | 1 (0.04) | 151 (0.3) |
| Plan type, n (%) | | | | | | |
| PPO | 4873 (49.6) | 10,719 (51.4) | 5333 (50.0) | 1765 (56.8) | 1531 (56.2) | 24,426 (51.4) |
| CDHP/HDHP | 2241 (22.8) | 4818 (23.1) | 2500 (23.4) | 609 (19.6) | 697 (25.6) | 10,959 (23.0) |
| HMO | 1194 (12.2) | 2347 (11.3) | 1379 (12.9) | 343 (11.0) | 168 (6.2) | 5464 (11.5) |
| POS/POS with capitation | 767 (7.8) | 1492 (7.2) | 791 (7.4) | 235 (7.6) | 157 (5.8) | 3475 (7.3) |
| Comprehensive | 415 (4.2) | 726 (3.5) | 356 (3.3) | 66 (2.1) | 87 (3.2) | 1667 (3.5) |
| EPO | 97 (1.0) | 180 (0.9) | 93 (0.9) | 16 (0.5) | 27 (1.0) | 418 (0.9) |
| Unknown/Missing | 235 (2.4) | 567 (2.7) | 223 (2.1) | 73 (2.4) | 58 (2.1) | 1163 (2.4) |
| Comorbidities, n (%) | | | | | | |
| Allergic rhinitis | 5380 (25.8) | 2831 (26.5) | 2721 (27.7) | 958 (30.8) | 934 (34.3) | 12,955 (27.2) |
| Asthma | 3030 (14.5) | 1774 (16.6) | 1542 (15.7) | 535 (17.2) | 495 (18.2) | 7469 (15.7) |
| MDD | 2613 (12.5) | 1233 (11.6) | 1106 (11.3) | 356 (11.5) | 296 (10.9) | 5660 (11.9) |
| GAD | 1804 (8.7) | 917 (8.6) | 831 (8.5) | 262 (8.4) | 228 (8.4) | 4071 (8.6) |
| Urticaria | 1314 (6.3) | 623 (5.8) | 597 (6.1) | 187 (6.0) | 202 (7.4) | 2961 (6.2) |
| Food allergy | 514 (2.5) | 377 (3.5) | 354 (3.6) | 146 (4.7) | 119 (4.4) | 1537 (3.2) |
| Nasal polyposis | 107 (0.5) | 48 (0.5) | 41 (0.4) | 21 (0.7) | 13 (0.5) | 236 (0.5) |

CDHP, consumer-driven health plan; EPO, exclusive provider organization; GAD, generalized anxiety disorder; HDHP, high-deductible health plan; HMO, health maintenance organization; MDD, major depressive disorder; POS, point-of-service; PPO, preferred provider organization; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.
* Includes data for 394 individuals who were initially treated with dupilumab (subgroup not shown).

### *Treatment Patterns*

- Across initial topical treatments, 32.8% of individuals were prescribed a systemic treatment (**Figure 2**)

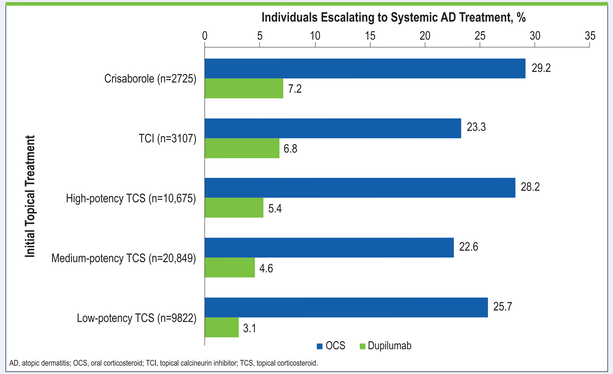
**Figure 2. Number of Individuals Escalating Treatment After Initial Topical Treatment**




OCS, oral corticosteroid; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.
Dark blue squares indicate treatments and the number of individuals initiating each type of treatment. Light blue and white squares in each column indicate number of individuals escalating to each treatment indicated by the dark blue square at the end of each corresponding row.

- 23%–29% of individuals escalated to OCS, and 3%–7% escalated to dupilumab (**Figure 3**)

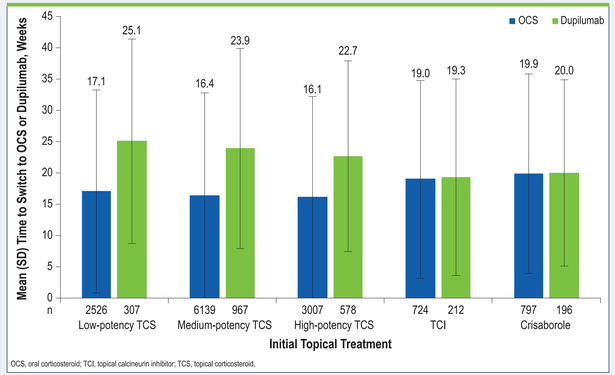
**Figure 3. Proportion of Individuals Escalating to Systemic AD Treatment**




AD, atopic dermatitis; OCS, oral corticosteroid; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.

- The mean time for adding OCS or dupilumab was 16–20 and 19–25 weeks, respectively, across initial treatments (**Figure 4**)

**Figure 4. Mean Time From Topical Treatment to Use of OCS or Dupilumab**




OCS, oral corticosteroid; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.

- Some individuals (13.4%) were on ≥2 topical treatments during the study period

## Limitations

- Limitations to the study are those consistent with retrospective, administrative claims analyses, including the potential for sampling bias, incomplete records, improper data entry, and differences in actual vs physician-directed medication use

## Conclusions

- **Many US individuals (32.8%) needed a systemic treatment to manage their AD**
  - **A considerable proportion of US individuals with AD (13.4%) needed ≥2 topical treatments in their first year after treatment initiation**
- **These results suggest that topical treatments (available in 2018) are not sufficient for long-term disease control**
  - **Escalation to systemic treatments occurred after approximately 4–6 months of topical therapy**
- **These treatment patterns may reflect the real-world effectiveness and treatment success of topical regimens during the analysis period**

### Disclosures

VNJ, JHL, and ABN are employees and shareholders of Incyte Corporation. SD is a consultant to Incyte Corporation.

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