

Real world treatment patterns of moderate to severe atopic dermatitis

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Background:

Atopic dermatitis (AD) is a chronic, inflammatory skin disease impacting 10 to 30 percent of children and 2 to 10 percent of adults in the United States [1]. The condition is characterized by dry, itchy skin, a relapsing-remitting disease course, and increased susceptibility to secondary skin infections [2]. AD can significantly impact patients' quality of life and, according to the Global Disease Burden Study, has the highest disease burden among all skin disorders [3]. An estimated 30 to 40 percent of patients with AD experience moderate to severe symptoms [4]. In clinical practice, AD severity is commonly assessed using tools such as the Eczema Area and Severity Index (EASI) and SCORing Atopic Dermatitis (SCORAD).

AD symptoms are generally managed using a stepwise approach based on disease severity, with mild symptoms typically controlled by skin care and low potency topical corticosteroids, and moderate to severe symptoms often requiring more intense treatment such as phototherapy and systemic therapies (biologics, JAK inhibitors, and immunosuppressants). Recent approvals of oral JAK inhibitors and additional biologics have expanded the treatment options for patients with moderate to severe AD. However, despite this evolving therapeutic landscape, real-world treatment patterns after the introduction of these newer therapies remain poorly characterized. This study aimed to identify and characterize treatment patterns and unmet therapeutic need among patients with moderate to severe AD using the Cohort Pathways tool [5].

Methods:

We identified a cohort of patients treated for moderate to severe AD in the Health Verity Comprehensive Claims data source. Because disease severity is not directly captured in healthcare claims data, we applied a modified version of a published, validated algorithm based on treatment utilization to identify patients likely to have moderate to severe AD [6,7].

When multiple claims were required, cohort index date occurred on the later of the qualifying claims. Cohort entry events were any of the following: i) two or more claims for phototherapy within 365 days, ii) two or more claims for medium to high potency topical corticosteroids, systemic corticosteroids (oral and parenteral), immunosuppressants, or topical JAK inhibitors within 365 days, iii) a combination of at least 1 claim for phototherapy and 1 claim for medium to high potency topical corticosteroids, systemic corticosteroids, immunosuppressants, or topical JAK inhibitors within 365 days, or iv) at least one claim for advanced therapy (biologics or oral JAK inhibitors).

Patients were also required to have at least 2 diagnosis codes for AD on at least two distinct dates within 365 days prior to and 90 days after index. Diagnoses were required to occur between January 2016 and December 2025. No exclusion criteria or minimum observation period was applied.

We then evaluated post-index treatment pathways in this cohort using the Cohort Pathways tool in ATLAS. We constructed Cohort Pathway event cohorts for AD treatment classes: low potency topical corticosteroids, medium to high potency topical corticosteroids and topical JAK inhibitors, oral and parenteral corticosteroids, immunosuppressants, phototherapy, advanced therapies (oral JAK inhibitors and biologics). Treatments occurring within 30 days of each other were defined as combination treatments, to account for the lasting impact of corticosteroids. Treatments occurring more than 30 days apart were defined as a treatment switch.

The study was conducted using ATLAS (v2.15) modules for concept set creation, cohort creation, characterization, and cohort pathways [8].

Results:

We identified 1,811,235 patients meeting the definition of moderate to severe AD between 2016 and 2025. Only 6% of the cohort received no therapies post-index. Overall, 42% of the cohort received exactly 1 line of therapy, 27% received exactly 2 lines of therapy, and 25% received 3 or more lines of therapy. First-line therapies most commonly prescribed included medium to high potency topical corticosteroids (55%) and oral and parenteral corticosteroids (45%) (**Table 1**), and 11% of the cohort was exposed concurrently to multiple treatment classes first-line. Second line therapies also commonly included these treatment types - 25% and 27% of the cohort, respectively (**Figure 1**). Among patients initiating first-line treatment, 64% progressed to second-line therapy, and among those receiving second-line treatment, 52% progressed to third-line treatment.

Use of advanced therapies (biologic or oral JAK inhibitor) remained limited. Advanced therapies were used in 12% of the cohort overall; 6% received biologics first-line. These findings indicate heterogeneous treatment pathways, and relatively limited use and persistence of advanced therapies in routine care.

Conclusion:

The treatment pathways of patients with moderate to severe atopic dermatitis were very heterogeneous. The high proportion of patients exposed to multiple lines of therapy, frequent progression across lines of therapy, combined with the small proportion receiving and staying on advanced therapies, indicates potential underutilization of targeted therapies, and unmet need for long-term symptom reduction.

Limitations of this work include dispensing claims for prescription treatments as a proxy for disease severity, and the lack of capture of over-the-counter treatments. Additionally, since treatments are collapsed when claims occur within 30 days of one another, some treatments that appear concomitant may represent switching. Next steps for this work include further refinement and validation of the moderate to severe AD phenotype, including differentiating between patients with mild, moderate, and severe disease along with exploring comorbid conditions related to similar pathways. Further refinement of severity phenotypes may enable more targeted analyses of treatment patterns across AD severity levels.

Figure 1:

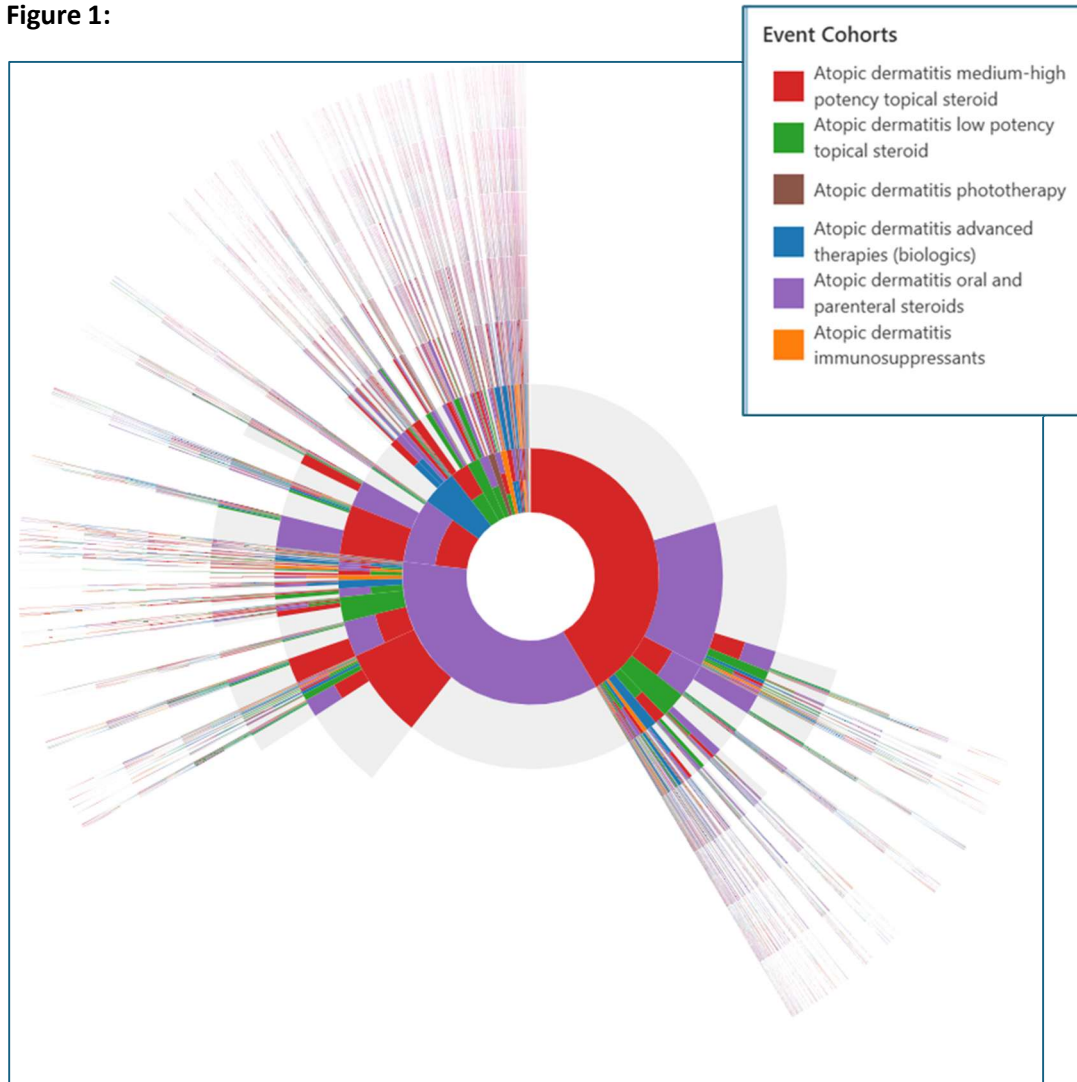


Table 1:

Treatment	Line of Therapy	Persons	Percent of Pathway	Percent of Cohort
medium-high potency topical steroid	1	928,350	54.6%	51.3%
oral and parenteral steroids	1	801,369	47.1%	44.2%
advanced therapies (biologics)	1	105,607	6.2%	5.8%
phototherapy	1	26,452	1.6%	1.5%
immunosuppressants	1	24,939	1.5%	1.4%
oral and parenteral steroids	2	451,511	26.6%	24.9%
medium-high potency topical steroid	2	418,963	24.6%	23.1%
advanced therapies (biologics)	2	102,616	6.0%	5.7%
immunosuppressants	2	38,743	2.3%	2.1%
phototherapy	2	20,078	1.2%	1.1%
oral and parenteral steroids	3	214,293	12.6%	11.8%
medium-high potency topical steroid	3	191,633	11.3%	10.6%
advanced therapies (biologics)	3	78,209	4.6%	4.3%
immunosuppressants	3	33,598	2.0%	1.9%
phototherapy	3	11,233	0.7%	0.6%
oral and parenteral steroids	4	79,134	4.7%	4.4%
medium-high potency topical steroid	4	76,193	4.5%	4.2%
advanced therapies (biologics)	4	54,043	3.2%	3.0%
immunosuppressants	4	23,260	1.4%	1.3%
phototherapy	4	6,646	0.4%	0.4%
oral and parenteral steroids	5	38,843	2.3%	2.1%
medium-high potency topical steroid	5	38,429	2.3%	2.1%
advanced therapies (biologics)	5	32,578	1.9%	1.8%
immunosuppressants	5	13,501	0.8%	0.8%
phototherapy	5	3,682	0.2%	0.2%

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