Cost-per-responder analysis of delgocitinib topical cream versus dupilumab subcutaneous injection for moderate to severe atopic hand eczema in the United States

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Conclusion

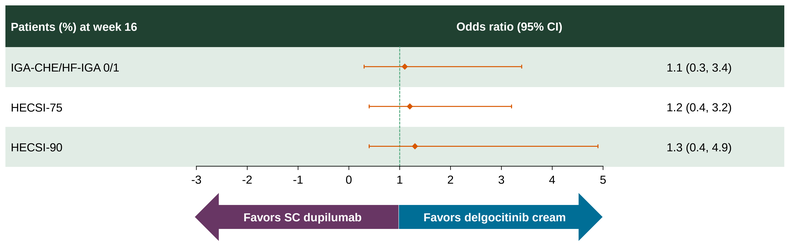
Delgocitinib topical cream demonstrated superior cost-effectiveness compared to dupilumab subcutaneous injection in the management of moderate to severe atopic hand eczema (AHE) in the United States.

As the first targeted treatment approved for chronic hand eczema (CHE) in the United States, delgocitinib topical cream addresses a critical unmet need, offering value to both patients and healthcare payers.

Background (Synopsis)

- Chronic hand eczema (CHE) is a painful, pruritic, inflammatory, non-infectious skin disease of the hands and wrists with an estimated global one-year prevalence of 9%.[1,2] CHE imposes a substantial socioeconomic burden due to both medical costs and lost productivity along with significant impairment of quality of life.[3,4]
- CHE etiology is multifactorial, involving triggers and factors that are both exogenous (irritants, allergens, and pathogens) and endogenous (immune dysregulation and skin barrier dysfunction), leading to heterogenous disease with multiple subtypes including atopic hand eczema (AHE).[1,5]
- Delgocitinib, a topical pan-JAK inhibitor, is the first and only FDA-approved treatment for moderate to severe CHE (including AHE and other subtypes) in the United States.[6,7] Dupilumab is a subcutaneous Interleukin-4 alpha antagonist approved for the treatment of moderate to severe atopic dermatitis (AD) including AHE.[8]
- Due to a lack of head-to-head data, a matching-adjusted indirect comparison (MAIC) comparing efficacy of delgocitinib versus dupilumab in patients with AHE has been performed and published. The MAIC used delgocitinib individual patient data from the DELTA 1 and 2 trials,[7] and aggregated dupilumab data from the LIBERTY-AD-HAFT trial (52% of patients in the LIBERTY-AD-HAFT trial also had AD on other body parts in addition to hands). The efficacy was measured using IGA-CHE/HF-IGA, HECSI-75, and HECSI-90.[9,10] Results showed odds ratios in favor of delgocitinib, although these were not significant **(Figure 1)**.
- Understanding the cost-effectiveness of the different treatments used to treat AHE is essential for informed decision-making.

Figure 1. Results from the matching-adjusted indirect comparison[10]



Objective

- The objective of this study was to evaluate the cost-effectiveness of delgocitinib topical cream versus dupilumab subcutaneous injection using a cost-per-responder model in adults with moderate to severe AHE in the United States.

Methods

- A cost-per-responder (CPR) model from a US third-party payer perspective was developed to compare delgocitinib with dupilumab in adults with moderate to severe AHE who had an inadequate response to topical corticosteroids or for whom topical corticosteroids are not advisable.
- The model used a flare-based approach to reflect the fluctuating nature of AHE and applies a 1-week cycle length to be able to capture the changes in treatments and disease flare-ups in sufficient detail. A 3-year time horizon was used, and a 3% annual discount rate was applied.[11]
- Treatment efficacy was sourced from the MAIC comparing efficacy for delgocitinib versus dupilumab. CPR was assessed at week 16 using IGA-CHE/HF-IGA, HECSI-90, and HECSI-75 **(Table 1)**.
- CPR was derived by dividing the sum of all costs by the proportion of patients achieving an adequate response to the selected outcome measure. Cost per patient was derived as the average cost incurred by the patient over the selected time horizon.
- Delgocitinib consumption was estimated per year based on clinical trial consumption per week and 3.2 flares per year.[12,13] Dupilumab consumption followed a continuous regimen per the label: 600 mg induction, then 300 mg every 2 weeks.[8]
- The model included drug acquisition costs for both treatments, as well as monitoring costs for dupilumab, i.e., 1 annual physician visit **(Table 1)**.
- Deterministic sensitivity analyses (DSA) were performed to assess the robustness of CPR results across the listed key parameters: efficacy of dupilumab and delgocitinib, average treatment duration per flare, flare frequency per year, delgocitinib dosage per application, and discount rate. The parameters were varied by +/-20%.

Presented at the 2025 Fall Clinical Dermatology Conference, Wynn Las Vegas, NV (US), October 23–26, 2025

Methods (continued)

Table 1. Overview of key inputs

	Values	Source
Drug acquisition cost*		
Delgocitinib (1 tube, 30 g), $	1,986.00	14
Dupilumab (2 pens, 300 mg), $	3,993.46	15
Monitoring		
Physician visit, $	88.95	16
Efficacy, delgocitinib		
HECSI-75 at week 16, %	54.10	10
HECSI-90 at week 16, %	32.70	9
IGA-CHE/HF-IGA at week 16, %	35.40	10
Efficacy, dupilumab		
HECSI-75 at week 16, %	46.90	10
HECSI-90 at week 16, %	18.80	9
IGA-CHE/HF-IGA at week 16, %	40.30	10

Note: **Wholesale Acquisition Cost (WAC).*

Results

Cost-per-responder results

- Delgocitinib demonstrated a lower CPR than dupilumab in each of the 3 years regardless of the endpoint used to define responders **(Figure 2, A-C)**.
- In year 1, the CPR was 74% ($35,038 vs. $133,993), 87% ($36,671 vs. $287,229), and 84% ($18,100 vs. $115,136) lower for delgocitinib compared to dupilumab for IGA-CHE/HF-IGA, HECSI-90, and HECSI-75, respectively.
- Over the 3-year period, the total cost per IGA-CHE/HF-IGA responder was $102,082 for delgocitinib and $380,903 for dupilumab, resulting in a total savings of $278,821 (73%) per responder. For the analysis using HECSI-90, the total 3-year CPR was $106,839 for delgocitinib and $816,510 for dupilumab, resulting in savings per responder of $709,671. Furthermore, the cost per HECSI-75 responder was $52,735 for delgocitinib and $327,300 for dupilumab, resulting in savings of $274,565.

Cost-per-patient results

- Delgocitinib resulted in a lower CPP regardless of the endpoint used to define responders **(Table 2)**.
- For delgocitinib, the total 3-year CPP ranged from $28,530 to $36,137 depending on the endpoint used to define responders. For dupilumab, the total 3-year CPP was $153,504.
- Over a 3-year period, treatment with delgocitinib resulted in savings per patient of between $117,367 and $124,974 compared to dupilumab.

Table 2. Cost-per-patient results, $

		Year 1	Year 2	Year 3	Total
IGA-CHE/HF-IGA	**Delgocitinib**	12,403	12,042	11,691	36,137
	Dupilumab	53,999	50,488	49,017	153,504
	Increment	-41,596	-38,446	-37,326	-117,367
HECSI-75	**Delgocitinib**	9,792	9,507	9,230	28,530
	Dupilumab	53,999	50,488	49,017	153,504
	Increment	-44,207	-40,981	-39,787	-124,974
HECSI-90	**Delgocitinib**	11,991	11,642	11,303	34,936
	Dupilumab	53,999	50,488	49,017	153,504
	Increment	-42,008	-38,846	-37,714	-118,567

Note: *The total cost per patient is based on the drug acquisition cost and the monitoring cost (dupilumab only).*

Results

Figure 2. Cost-per-responder results, $

Abbreviations
AD: Atopic dermatitis; AHE: Atopic hand eczema; CHE: Chronic hand eczema; CPP: Cost per patient; CPR: Cost per responder; DSA: Deterministic sensitivity analyses; FDA: Food and Drug Administration; HF-IGA: Hand and Foot Investigator's Global Assessment; IGA-CHE: Investigator's Global Assessment for Chronic Hand Eczema; HECSI: Hand Eczema Severity Index; JAK: Janus kinase; MAIC: Matching-adjusted indirect comparison; SC: Subcutaneous; WAC: Wholesale Acquisition Cost.

Acknowledgments
This study was sponsored by LEO Pharma Inc. (New Jersey, US).

Disclosures
The authors are employees of LEO Pharma Inc., LEO Pharma A/S, and EY-Parthenon P/S. EY Parthenon P/S is a paid vendor of LEO Pharma Inc. and LEO Pharma A/S.

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