

Treatment Patterns and Economic Burden in Moderate to Severe Chronic Hand Eczema in the United States: A Real-World Retrospective Claims Analysis

April W. Armstrong¹, Rebecca Burne², Aseel Bin Sawad³, Anais Lemyre², Marjolaine Gauthier-Loiselle², Annie Guerin², Tanzania Vinson³, Brent Milovac³, Sanjeev Balu³

¹ University of California, Santa Monica, California

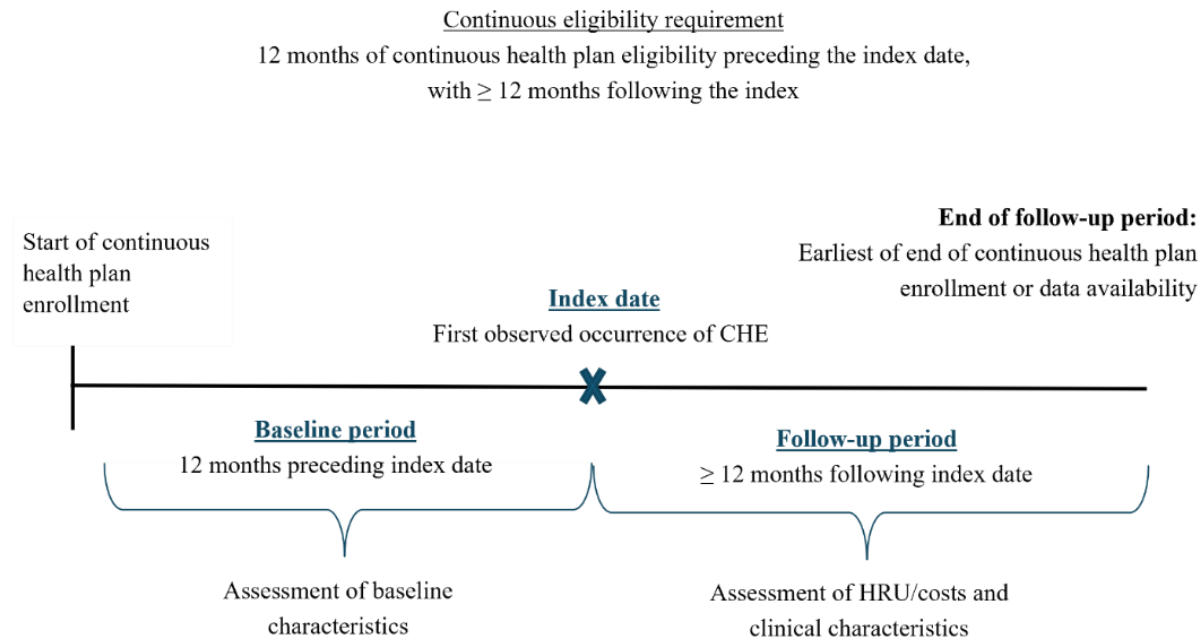
² Analysis Group, ULC, Montreal, Québec, Canada

³ LEO Pharma Inc., Madison, New Jersey

Corresponding author: Rebecca Burne (e-mail: rebecca.burne@analysisgroup.com)

SUPPLEMENTARY MATERIAL

Supplementary Figure S1: Study design^a



Abbreviations: CHE: Chronic Hand Eczema; HRU: healthcare resource utilization; SNOMED CT: Systematized Nomenclature of Medicine–Clinical Terminology.

Note:

[a] The index date was defined as the first occurrence of a SNOMED CT code for CHE or any hand eczema (including acute hand eczema, as well as hand eczema not specified as chronic or acute).

Supplementary Figure S2: Sankey diagram of topical and systemic treatment use in the moderate to severe CHE subgroup, by study period^a



Abbreviations: CHE: Chronic Hand Eczema; CS: corticosteroid; N: number.

Note:

[a] Treatment characteristics were reported separately for each year following the index date out of patients with sufficient follow-up (i.e., 1 full year of follow-up, 2 full years of follow-up, 3 full years of follow-up).

Supplementary Table S1: Patient demographics and clinical characteristics by eczema/dermatitis subtype

	Moderate to severe CHE by eczema/dermatitis subtype ^a					
	Multiple subtypes	Atopic dermatitis subtype	Allergic contact dermatitis subtype	Irritant contact dermatitis subtype	Unspecified contact dermatitis subtype	Other and unspecified dermatitis subtype
	N = 2,834	N = 1,642	N = 1,035	N = 595	N = 1,238	N = 5,871
Patient characteristics on the index date^b						
Age (years), mean ± SD [median]	48.1 ± 15.1 [50.0]	47.2 ± 15.4 [49.0]	48.7 ± 14.7 [50.0]	49.3 ± 15.4 [52.0]	48.9 ± 15.2 [50.0]	48.2 ± 15.2 [50.0]
Female, n (%)	1,859 (65.6)	1,123 (68.4)	682 (65.9)	392 (65.9)	788 (63.7)	3,759 (64.0)
Race, n (%)						
White	1,818 (64.1)	1,022 (62.2)	694 (67.1)	417 (70.1)	756 (61.1)	3,845 (65.5)
Hispanic or Latino	290 (10.2)	160 (9.7)	100 (9.7)	52 (8.7)	140 (11.3)	604 (10.3)
Black or African American	293 (10.3)	188 (11.4)	95 (9.2)	57 (9.6)	132 (10.7)	507 (8.6)
Asian or Pacific Islander	155 (5.5)	102 (6.2)	44 (4.3)	28 (4.7)	76 (6.1)	311 (5.3)
Other	108 (3.8)	61 (3.7)	35 (3.4)	19 (3.2)	44 (3.6)	251 (4.3)
Unknown	170 (6.0)	109 (6.6)	67 (6.5)	22 (3.7)	90 (7.3)	353 (6.0)
Region, n (%)						
South	1,199 (42.3)	666 (40.6)	441 (42.6)	219 (36.8)	530 (42.8)	2,398 (40.8)
West	523 (18.5)	326 (19.9)	158 (15.3)	136 (22.9)	202 (16.3)	1,158 (19.7)
Midwest	676 (23.9)	382 (23.3)	242 (23.4)	146 (24.5)	320 (25.8)	1,444 (24.6)
Northeast	436 (15.4)	268 (16.3)	194 (18.7)	94 (15.8)	186 (15.0)	871 (14.8)
Healthcare plan type, n (%)						
Commercial	2,183 (77.0)	1,273 (77.5)	794 (76.7)	442 (74.3)	933 (75.4)	4,497 (76.6)
Medicare	382 (13.5)	211 (12.9)	145 (14.0)	88 (14.8)	174 (14.1)	825 (14.1)
Medicaid	267 (9.4)	157 (9.6)	94 (9.1)	64 (10.8)	130 (10.5)	545 (9.3)
Unknown	2 (0.1)	1 (0.1)	2 (0.2)	1 (0.2)	1 (0.1)	4 (0.1)
Clinical characteristics during the 12-month baseline period						
Comorbidities frequently associated with eczema, n (%)						
Allergic rhinitis	502 (17.7)	301 (18.3)	188 (18.2)	101 (17.0)	230 (18.6)	923 (15.7)
Asthma	397 (14.0)	253 (15.4)	150 (14.5)	87 (14.6)	179 (14.5)	720 (12.3)

Moderate to severe CHE by eczema/dermatitis subtype^a

	Multiple subtypes	Atopic dermatitis subtype	Allergic contact dermatitis subtype	Irritant contact dermatitis subtype	Unspecified contact dermatitis subtype	Other and unspecified dermatitis subtype
	N = 2,834	N = 1,642	N = 1,035	N = 595	N = 1,238	N = 5,871
Anxiety	617 (21.8)	355 (21.6)	226 (21.8)	129 (21.7)	260 (21.0)	1,252 (21.3)
Depression	460 (16.2)	274 (16.7)	159 (15.4)	95 (16.0)	202 (16.3)	966 (16.5)
Quan-CCI, mean ± SD [median]	0.6 ± 1.2 [0.0]	0.6 ± 1.1 [0.0]	0.5 ± 1.0 [0.0]	0.6 ± 1.3 [0.0]	0.6 ± 1.3 [0.0]	0.6 ± 1.2 [0.0]

Abbreviations: CHE: Chronic Hand Eczema; ICD-10-CM: International Classification of Diseases, Tenth Revision, Clinical Modification; n/N: number; Quan-CCI: Quan-Charlson Comorbidity Index; SD: standard deviation; SNOMED CT: Systematized Nomenclature of Medicine–Clinical Terminology.

Notes:

[a] Subtypes were defined based on ICD-10-CM diagnoses for eczema/dermatitis and are non-mutually exclusive. Patients with a recorded diagnosis code for only 1 eczema/dermatitis subtype were classified in said subtype (L20.x-L30.x). Additionally, patients with ≥2 subtypes were classified in all identified subtypes and in multiple subtypes.

[b] The index date was defined as the first date with a recorded SNOMED CT code for CHE or for any hand eczema.

Supplementary Table S2: Treatment characteristics by eczema/dermatitis subtype

	Moderate to severe CHE by eczema/dermatitis subtype ^a					
	Multiple subtypes	Atopic dermatitis subtype	Allergic contact dermatitis subtype	Irritant contact dermatitis subtype	Unspecified contact dermatitis subtype	Other and unspecified dermatitis subtype
	N = 2,834	N = 1,642	N = 1,035	N = 595	N = 1,238	N = 5,871
Treatment characteristics during the entire follow-up period						
Follow-up period length, mean ± SD [median]						
Number of years	3.5 ± 1.7 [3.3]	3.6 ± 1.7 [3.3]	3.5 ± 1.7 [3.3]	3.6 ± 1.7 [3.5]	3.4 ± 1.7 [3.2]	3.5 ± 1.7 [3.2]
≥1 year of follow-up	2,834 (100.0)	1,642 (100.0)	1,035 (100.0)	595 (100.0)	1,238 (100.0)	5,871 (100.0)
≥2 years of follow-up	2,175 (76.7)	1,275 (77.6)	797 (77.0)	470 (79.0)	918 (74.2)	4,464 (76.0)
≥3 years of follow-up	1,575 (55.6)	913 (55.6)	588 (56.8)	352 (59.2)	648 (52.3)	3,212 (54.7)
Topical therapy, n (%)						
Any topical therapy	2,512 (88.6)	1,486 (90.5)	914 (88.3)	508 (85.4)	1,049 (84.7)	4,923 (83.9)
Topical corticosteroids	2,470 (87.2)	1,455 (88.6)	902 (87.1)	501 (84.2)	1,033 (83.4)	4,838 (82.4)
Topical calcineurin inhibitors	399 (14.1)	302 (18.4)	158 (15.3)	82 (13.8)	164 (13.2)	520 (8.9)
Topical PDE-4 inhibitors	172 (6.1)	144 (8.8)	67 (6.5)	26 (4.4)	51 (4.1)	236 (4.0)
Topical retinoids	53 (1.9)	36 (2.2)	22 (2.1)	13 (2.2)	16 (1.3)	108 (1.8)
Topical JAK inhibitors	55 (1.9)	49 (3.0)	16 (1.5)	8 (1.3)	25 (2.0)	62 (1.1)
Number of fills ^b , mean ± SD [median]	5.5 ± 6.5 [3.0]	6.3 ± 7.1 [4.0]	5.8 ± 6.4 [4.0]	5.5 ± 6.2 [3.0]	5.4 ± 6.3 [3.0]	4.5 ± 5.7 [3.0]
Systemic therapy, n (%)						
Any systemic therapy	2,516 (88.8)	1,458 (88.8)	918 (88.7)	520 (87.4)	1,092 (88.2)	5,190 (88.4)
Systemic (oral or injectable) corticosteroids	2,455 (86.8)	1,404 (85.5)	901 (87.1)	510 (85.7)	1,076 (86.9)	5,080 (86.5)
Immunosuppressants	134 (4.7)	85 (5.2)	40 (3.9)	33 (5.5)	50 (4.0)	262 (4.5)
Monoclonal antibodies	208 (7.3)	200 (12.2)	69 (6.7)	24 (4.0)	63 (5.1)	216 (3.7)
Dupilumab	204 (7.2)	196 (11.9)	68 (6.6)	23 (3.9)	62 (5.0)	212 (3.6)
Tralokinumab	5 (0.2)	5 (0.3)	1 (0.1)	1 (0.2)	2 (0.2)	5 (0.1)
Retinoids	42 (1.5)	26 (1.6)	18 (1.7)	8 (1.3)	15 (1.2)	75 (1.3)
Oral JAK inhibitors	14 (0.5)	9 (0.5)	5 (0.5)	4 (0.7)	7 (0.6)	20 (0.3)
Upadacitinib	12 (0.4)	7 (0.4)	4 (0.4)	4 (0.7)	5 (0.4)	18 (0.3)
Abrocitinib	2 (0.1)	2 (0.1)	1 (0.1)	0 (0.0)	2 (0.2)	2 (0.0)

Moderate to severe CHE by eczema/dermatitis subtype^a

	Multiple subtypes	Atopic dermatitis subtype	Allergic contact dermatitis subtype	Irritant contact dermatitis subtype	Unspecified contact dermatitis subtype	Other and unspecified dermatitis subtype
	N = 2,834	N = 1,642	N = 1,035	N = 595	N = 1,238	N = 5,871
Number of fills ^b , mean ± SD [median]	6.2 ± 10.5 [3.0]	7.1 ± 11.3 [3.0]	6.2 ± 9.9 [3.0]	5.9 ± 10.3 [3.0]	6.1 ± 10.3 [3.0]	5.0 ± 8.7 [2.0]
Phototherapy						
Number of visits, mean ± SD [median]	0.5 ± 6.6 [0.0]	0.6 ± 6.7 [0.0]	0.4 ± 5.4 [0.0]	0.6 ± 6.8 [0.0]	0.3 ± 3.5 [0.0]	0.3 ± 4.8 [0.0]
≥1 visit, n (%)	52 (1.8)	41 (2.5)	16 (1.5)	14 (2.4)	19 (1.5)	64 (1.1)
Other selected medications^c, n (%)						
Pain medications	2,014 (71.1)	1,172 (71.4)	709 (68.5)	425 (71.4)	891 (72.0)	4,146 (70.6)
Sleep medications	1,516 (53.5)	897 (54.6)	547 (52.9)	325 (54.6)	658 (53.2)	2,974 (50.7)
Other psychotropic drugs	1,450 (51.2)	830 (50.5)	541 (52.3)	290 (48.7)	650 (52.5)	2,914 (49.6)

Abbreviations: CHE: Chronic Hand Eczema; ICD-10-CM: International Classification of Diseases, Tenth Revision, Clinical Modification; JAK: Janus kinase; n/N: number; PDE-4: phosphodiesterase-4; SD: standard deviation.

Notes:

[a] Subtypes were defined based on ICD-10-CM diagnoses for eczema/dermatitis and are non-mutually exclusive. Patients with a recorded diagnosis code for only 1 eczema/dermatitis subtype were classified in said subtype (L20.x-L30.x). Additionally, patients with ≥2 subtypes were classified in all identified subtypes and in multiple subtypes.

[b] The number of fills is calculated among patients with ≥1 fill for said treatment.

[c] Pain medications included analgesics anti-inflammatory, analgesics non-narcotic, analgesics opioid, analgesics topical, and other opioids. Sleep medications included sedatives and hypnotics, benzodiazepines and antihistamines. Other psychotropic drugs included anxiolytics, antidepressants, and antipsychotics.