
Factors associated with patient-reported importance of skin clearance among adults with psoriasis and atopic dermatitis



Alexander Egeberg, MD, PhD, and Jacob P. Thyssen, MD, PhD, DMSc
Hellerup, Denmark

Background: Factors that are associated with patient-reported importance of obtaining complete or almost complete clearance of psoriasis and atopic dermatitis (AD) are unknown.

Objectives: To investigate the importance of and factors associated with obtaining complete or almost complete clearance of psoriasis or AD.

Methods: A cross-sectional study of 4016 and 3842 adults with psoriasis and AD.

Results: Patients with AD reported significantly greater importance of almost complete or complete skin clearance compared with patients with psoriasis. For both patient groups, almost complete was more important than complete skin clearance. Increasing disease severity and itch and skin pain were significantly associated with perceived importance of skin clearance for patients with both diseases. AD and psoriasis located on the face or neck and psoriasis located on the palms, soles, or genitals were significantly associated with patient-perceived importance of almost complete skin clearance. Only 7% and 27% of patients with severe AD and psoriasis, respectively, were currently receiving a systemic therapy.

Limitations: Specific reasons for infrequent use of systemic treatments was not examined.

Conclusion: Patients with psoriasis or AD expressed a strong request for almost complete or complete skin clearance. Patient education and effective therapies should be used to reduce disease severity. (J Am Acad Dermatol 2019;81:943-9.)

Key words: atopic dermatitis; Danish Skin Cohort; epidemiology; psoriasis; treatment goals.

Psoriasis and atopic dermatitis (AD) are common chronic inflammatory skin diseases in children and adults. With the advent of novel systemic therapies, including biologics, the management of these diseases has radically improved. This has been most evident for psoriasis, but with the introduction of dupilumab to treat adults with

moderate to severe AD, new hope has emerged for these patients as well.

Physicians' expectations for higher levels of drug efficacy have increased overall.^{1,2} However, although clinical trials of newer biologics for psoriasis have shown complete skin clearance in more than half of patients,³ expectations of a satisfactory

From the Department of Dermatology and Allergy, Herlev and Gentofte Hospital, University of Copenhagen, Hellerup, Denmark.

Funding sources: Supported by funding from the Danish Psoriasis Foundation (Psoriasisforeningen).

Disclosure: Dr Egeberg has received research funding from Pfizer, Eli Lilly, the Danish National Psoriasis Foundation, and the Kgl Hofbundtmager Aage Bang Foundation and honoraria as a consultant and/or speaker from AbbVie; Almirall; Leo Pharma; Samsung Bioepis Co, Ltd; Pfizer; Eli Lilly and Co; Novartis; Galderma; Dermavant; Bristol-Myers Squibb; and Janssen Pharmaceuticals. Dr Thyssen has attended advisory boards for Sanofi-Genzyme, Union Therapeutics, and Eli Lilly and Co; received speaker honoraria from LEO Pharma and

Sanofi-Genzyme; and been an investigator for Sanofi-Genzyme, Eli Lilly and Co, LEO Pharma, and AbbVie.

Accepted for publication June 9, 2019.

Reprints not available from the authors.

Correspondence to: Alexander Egeberg, MD, PhD, Department of Dermatology and Allergy, Herlev and Gentofte Hospital, Kildegårdsvej 28, 2900 Hellerup, Denmark. E-mail: alexander.egeberg@gmail.com.

Published online June 13, 2019.

0190-9622/\$36.00

© 2019 by the American Academy of Dermatology, Inc.

<https://doi.org/10.1016/j.jaad.2019.06.018>

treatment response appear to differ between patients and their physicians.⁴ This is also evident from observational registry data, where, for example, the Dermatology Life Quality Index (DLQI) has differed markedly from what was expected based on clinical trial data.^{5,6}

As higher levels of skin clearance become the benchmark in psoriasis and eventually in AD, the impact of other factors such as convenience (eg, frequency of injections), differences in safety profile, effects on comorbid conditions, and cost of treatment may need to be rebalanced when deciding the most appropriate treatment. Moreover, dermatologists need insight into factors that are associated with patient-reported importance of complete or almost complete skin clearance because this may affect treatment strategies.

In this study, we examined patient-reported treatment goals in a population-based cohort of Danish adults with either psoriasis or AD and identified factors associated with patient-perceived importance of complete and almost complete clearance.

MATERIALS AND METHODS

All appropriate study approvals were obtained (reference 2012-58-0004, journal number VD-2018-286, I-Suite no. 6528).

The Danish Skin Cohort is a prospective cohort comprising data on adults with psoriasis and AD seen and diagnostically verified by dermatologists in hospital centers and a number of private clinics in Denmark. This cohort has been described in detail elsewhere.⁷ Briefly, patient disease severity was categorized based on the proportion of body surface area (BSA) that was affected by psoriasis (for patients with psoriasis). BSA data were also available for AD, but patients' current Patient-Oriented SCORing Atopic Dermatitis (PO-SCORAD) scores were used for patients with AD, as this is a more well-established severity measure in AD. Consequently, patients were classified as having minimal disease (psoriasis with a BSA of 0 or AD with a PO-SCORAD of 0), having mild disease (psoriasis with a BSA <3 or AD with a PO-SCORAD <25), moderate disease (psoriasis with a BSA of 3-10 or AD with a PO-

SCORAD of 25-50), and severe disease (psoriasis with a BSA of ≥ 10 or AD with a PO-SCORAD >50).

Between May 15, 2018, and July 15, 2018, all patients with psoriasis were asked the following questions in a structured manner: "How important is it to you that your skin becomes almost clear of psoriasis (ie, almost unaffected skin)?" and "How

important is it to you that your skin becomes completely clear of psoriasis (ie, completely unaffected skin)?" Patients with AD were asked identical questions during the same time period, with the word *psoriasis* replaced by *AD*. The questions were asked in the native language in Denmark, Danish, in which the phrase *almost clear* corresponds to "becomes clear of most-but-not-all" and *completely clear* corresponds to "becomes completely

clear of all." Patients answered these questions using a numeric rating scale (NRS) from 0 (*not important*) to 10 (*most important*). Similarly, patients were asked to rate their current itch (within the last 3 days) and skin pain (within the last 7 days) using the NRS. Data on asthma, rhinitis, and psoriatic arthritis are also recorded for all individuals in the Danish Skin Cohort. Through individual-level linkage with the Danish National Patient Register and the Register of Medicinal Products Statistics, complete information on pharmacologic treatments was obtained for all study participants.^{8,9}

Statistical analysis

Summary statistics were created and presented as frequencies with percentages for categorical variables and means with standard deviations for continuous variables. Furthermore, interquartile ranges were estimated for nonnormally distributed continuous outcome variables. Associations between disease severity and treatment goals were assessed using linear regression models adjusted for age, sex, and socioeconomic status. Analyses were performed using SAS statistical software, version 9.4 (SAS Institute Inc. Cary, NC), and Stata software, version 13.0 (StataCorp, College Station, TX).

RESULTS

The cohorts comprised 3842 and 4016 adult patients with dermatologist-verified AD and psoriasis, respectively (Table I). There was a strong female

CAPSULE SUMMARY

- New effective drugs have become available to treat adults with psoriasis and atopic dermatitis, but many patients remain undertreated or have uncontrolled disease with their current therapy.
- We identified factors that are associated with patient-reported importance of obtaining complete or almost complete skin clearance.

Abbreviations used:

AD:	atopic dermatitis
BSA:	body surface area
DLQI:	Dermatology Life Quality Index
NRS:	numeric rating scale
PO-SCORAD:	Patient-Oriented SCORing Atopic Dermatitis

predominance, particularly among patients with AD. Patients with psoriasis were slightly older than patients with AD (59.4 vs 48.8 years, respectively; $P < .0001$). Patients with psoriasis had a higher mean body mass index (27.5 vs 25.9 kg/m², respectively; $P < .0001$), and a higher prevalence of smoking compared with patients with AD (25.5% vs 16.9%, respectively). Overall, 71.7% and 81.5% of patients with psoriasis and AD, respectively, reported an NRS score of 8 or higher for importance of almost complete skin clearance, whereas 60.0% and 65.9%, respectively, reported this for importance of obtaining complete skin clearance.

Association between disease severity and treatment goals

Atopic dermatitis. The mean (standard deviation) score (NRS from 0-10) was 8.6 (2.3) for almost complete and 7.7 (2.8) for complete skin clearance in patients with AD (Fig 1). A higher PO-SCORAD was significantly associated with higher patient-perceived importance of almost complete ($\beta = 0.018$; 95% confidence interval [CI], 0.012-0.023; $P < .0001$) and complete skin clearance ($\beta = 0.018$; 95% CI, 0.011-0.025; $P < .0001$) (Table II). There was no significant difference in patients with or without concurrent asthma or rhinitis in patients with AD. After adjustment for age, sex, and BSA, severity of itch was significantly associated with importance of almost complete ($\beta = 0.07$; 95% CI, 0.04-0.10; $P < .0001$) and complete skin clearance ($\beta = 0.08$; 95% CI, 0.04-0.12; $P < .0001$) in AD. Similarly, increasing skin pain displayed significant associations with importance of almost complete ($\beta = 0.07$; 95% CI, 0.04-0.10; $P < .0001$) and complete skin clearance ($\beta = 0.10$; 95% CI, 0.06-0.13; $P < .0001$) in AD.

Psoriasis. For patients with psoriasis, mean NRS scores were 8.0 (2.7) for almost complete and 7.2 (3.1) for complete skin clearance. Increasing BSA was significantly associated with higher patient-perceived importance of almost complete ($\beta = 0.018$; 95% CI, 0.011-0.021; $P < .0001$) and complete skin clearance ($\beta = 0.022$; 95% CI, 0.016-0.028; $P < .0001$) respectively. When comparing patients across severity strata (ie, mild psoriasis vs

Table I. Characteristics of the study population

Characteristics	Atopic dermatitis	
	(n = 3842)	Psoriasis (n = 4016)
Age in years, mean (SD)	48.8 (14.5)	59.4 (14.4)
Women, n (%)	2648 (68.9)	2240 (55.8)
BMI in kg/m ² , mean (SD)	25.9 (5.6)	27.5 (6.5)
Weight in kg, mean (SD)	76.0 (17.5)	81.6 (19.3)
Current smoker, n (%)	650 (16.9)	1022 (25.5)
Psoriatic arthritis, n (%)	—	847 (21.1)
Rheumatologist verified	—	660 (16.4)
Asthma, n (%)	1470 (38.3)	503 (12.5)
BSA, mean (SD)	11.9 (21.4)	10.0 (18.0)
PO-SCORAD, mean (SD)	20.2 (15.6)	—
Total IgE in 10 ³ IU/L, median (IQR)	215 (41-1420)	39 (12-192)

BMI, Body mass index; BSA, body surface area; IgE, immunoglobulin E; IQR, interquartile range; PO-SCORAD, Patient-Oriented SCORing Atopic Dermatitis; SD, standard deviation.

mild AD, moderate psoriasis vs moderate AD, and severe psoriasis vs severe AD), patients with AD in all strata reported significantly greater importance of obtaining almost complete ($P < .0001$) and complete ($P < .01$) skin clearance compared with patients with psoriasis. There was no significant difference in patients with psoriasis with or without concurrent psoriatic arthritis. After adjustment for age, sex, and BSA, severity of itch was significantly associated with importance of almost complete ($\beta = 0.14$; 95% CI, 0.10-0.17; $P < .0001$) and complete skin clearance ($\beta = 0.17$; 95% CI, 0.13-0.21; $P < .0001$) in psoriasis, and increasing skin pain was associated with importance of almost complete ($\beta = 0.14$; 95% CI, 0.10-0.17; $P < .0001$) and complete skin clearance ($\beta = 0.17$; 95% CI, 0.13-0.21; $P < .0001$).

Association between affected body locations and treatment goals

Atopic dermatitis. After adjusting for differences in BSA, involvement of AD in the face or neck was significantly associated with patient-perceived importance of almost complete skin clearance in patients with AD, whereas involvement of the scalp, palms, soles, genitals, or nails was not. None of the investigated body locations displayed significant associations with importance of complete skin clearance in AD (Table III).

Psoriasis. For psoriasis, BSA-adjusted analyses showed that involvement of the face, neck, palms, soles, and genitals was significantly associated with patient-perceived importance of almost complete skin clearance, whereas scalp involvement was not. In analyses assessing the patient-perceived

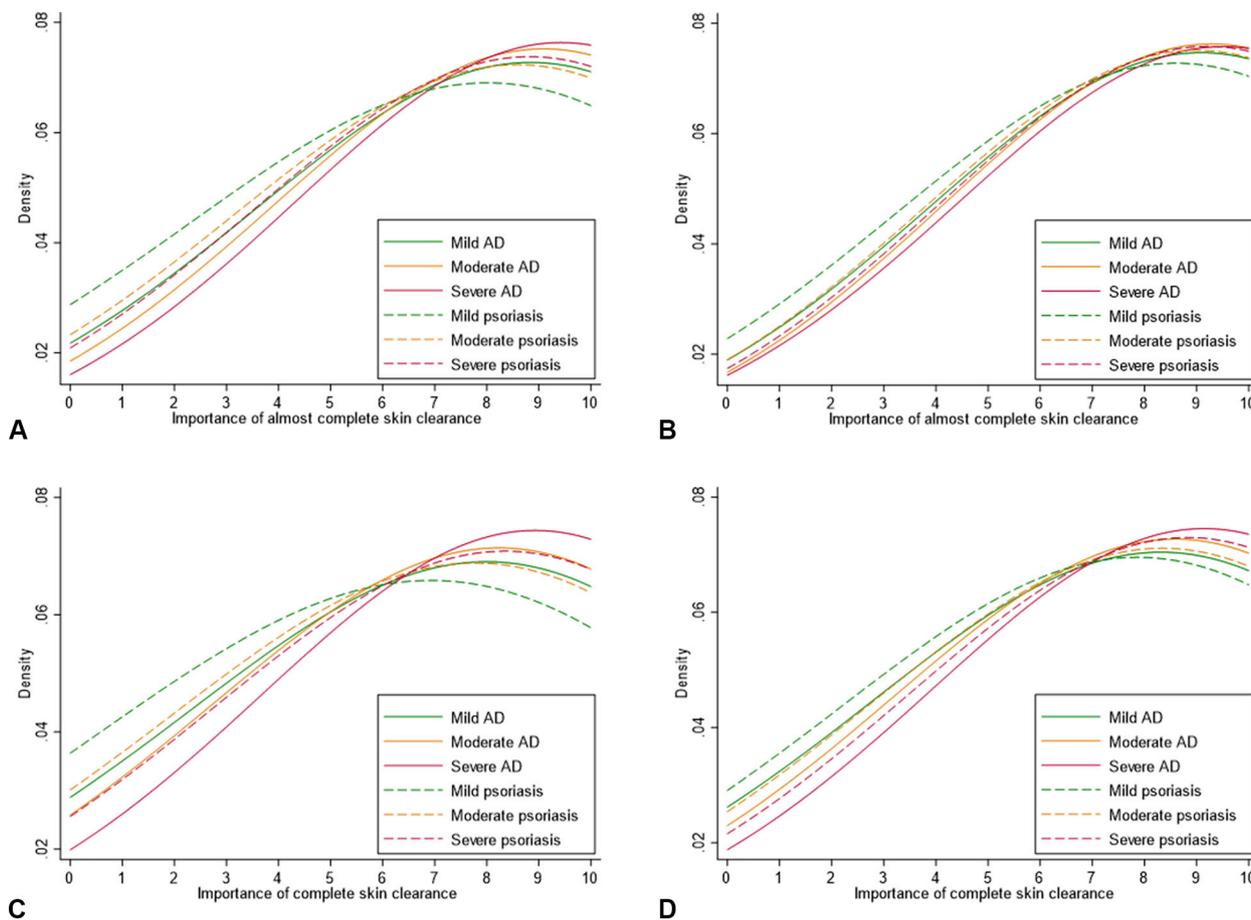


Fig 1. Patient-reported importance of obtaining almost complete and complete skin clearance among patients with psoriasis and atopic dermatitis. **A**, Importance of almost complete clearance (unweighted). **B**, Importance of almost complete clearance (weighted by DLQI). **C**, Importance of complete clearance (unweighted). **D**, Importance of complete clearance (weighted by DLQI). Results are on a numeric rating scale where 0 is least important and 10 is most important. *AD*, Atopic dermatitis; *DLQI*, Dermatology Life Quality Index.

importance of complete skin clearance, only involvement of palms and soles remained statistically significant.

Treatment goals in patients with AD and psoriasis with or without systemic treatment

Modest proportions of patients with psoriasis and AD were currently treated with systemic medication or biologics.

AD. The most frequently used systemic treatment was methotrexate, which was used in 1% to 4% of patients with AD (those with minimal and with mild, moderate, or severe disease, respectively) (Fig 2). Among patients with currently severe AD, only 7% were receiving any systemic therapy. For AD, the NRS for almost complete skin clearance was 9.0 (2.0) and 8.6 (2.3) among patients that did and did not receive systemic treatment, respectively ($P < .05$).

For AD, the NRS of complete skin clearance was 8.3 (2.4) in patients treated with systemic therapies and 7.6 (2.8) among patients not currently receiving any systemic therapy ($P < .01$).

Psoriasis. Similar to AD, methotrexate was the most frequently used systemic treatment and was used in 11% to 14% of patients with psoriasis. Among patients with severe psoriasis, 27% were currently receiving a systemic treatment. The mean NRS for importance of almost complete skin clearance was 8.2 (2.6) among patients currently receiving a systemic therapy and 7.9 (2.8) among those who did not currently receive any systemic treatment ($P < .05$). For complete skin clearance, the NRS was 7.4 (3.0) among patients with psoriasis receiving systemic treatment and 7.1 (3.1) among those not currently receiving any systemic treatment ($P < .05$).

Table II. Association between disease severity and treatment goals

Characteristics	Almost complete skin clearance			Complete skin clearance		
	β	95% CI	P value	β	95% CI	P value
Atopic dermatitis						
PO-SCORAD	0.018	0.012 to 0.023	<.0001	0.018	0.011 to 0.025	<.0001
Age	-0.014	-0.020 to -0.007	<.0001	0.003	-0.004 to 0.011	.4019
Male sex	-0.273	-0.451 to -0.095	.0027	-0.215	-0.433 to 0.003	.0534
Socioeconomic status						
Lowest group	-0.2654	-0.544 to 0.013	.0617	-0.082	-0.422 to 0.257	.6341
Below average	-0.2015	-0.476 to 0.073	.1506	0.025	-0.311 to 0.361	.8836
Average	(reference)			(reference)		
Above average	-0.1631	-0.412 to 0.086	.1993	-0.231	-0.536 to 0.073	.1360
Highest group	-0.2355	-0.478 to 0.006	.0564	-0.718	-1.014 to -0.423	<.0001
Psoriasis						
Body surface area	0.016	0.011 to 0.021	<.0001	0.022	0.016 to 0.028	<.0001
Age	-0.028	-0.035 to -0.022	<.0001	-0.012	-0.020 to -0.005	.0011
Male sex	-0.507	-0.688 to -0.326	<.0001	-0.615	-0.823 to -0.406	<.0001
Socioeconomic status						
Lowest group	0.006	-0.282 to 0.293	.9697	0.069	-0.261 to 0.399	.6803
Below average	-0.073	-0.346 to 0.201	.6024	0.084	-0.231 to 0.399	.6001
Average	(reference)			(reference)		
Above average	0.010	-0.267 to 0.288	.9434	-0.329	-0.649 to -0.010	.0435
Highest group	-0.178	-0.468 to 0.113	.2313	-0.732	-1.067 to -0.397	<.0001

CI, Confidence interval; PO-SCORAD, Patient-Oriented SCORing Atopic Dermatitis.

Table III. Association between affected location and treatment goals*

Location	Almost complete skin clearance			Complete skin clearance		
	β	95% CI	P value	β	95% CI	P value
Atopic dermatitis						
Scalp	0.140	-0.045 to 0.324	.1384	0.056	-0.169 to 0.280	.6274
Face	0.402	0.234 to 0.570	<.0001	0.115	-0.090 to 0.320	.2718
Neck	0.456	0.228 to 0.634	<.0001	0.207	-0.010 to 0.424	.0617
Palms	0.035	-0.169 to 0.239	.7377	0.159	0.089 to 0.406	.2100
Soles	-0.031	-0.375 to 0.313	.8584	-0.205	-0.623 to 0.213	.3356
Genitals	0.247	-0.056 to 0.549	.1097	0.080	-0.288 to 0.448	.6700
Nails	0.080	-0.229 to 0.388	.6121	0.083	-0.292 to 0.457	.6652
Psoriasis						
Scalp	0.123	-0.061 to 0.308	.1909	-0.118	-0.330 to 0.093	.2729
Face	0.287	0.053 to 0.521	.0164	0.125	-0.143 to 0.394	.3601
Neck	0.313	0.017 to 0.609	.0381	0.165	-0.174 to 0.504	.3402
Palms	0.481	0.235 to 0.728	.0001	0.737	0.455 to 1.018	<.0001
Soles	0.492	0.289 to 0.724	<.0001	0.643	0.376 to 0.909	<.0001
Genitals	0.434	0.188 to 0.681	.0005	0.150	-0.133 to 0.432	.2985
Nails	0.238	0.035 to 0.441	.0216	0.015	-0.217 to 0.248	.8984

CI, Confidence interval.

*Estimates are adjusted for percentage of affected body surface area.

DISCUSSION

Main findings

In this study of almost 8000 adult patients, we identified important factors that are associated with

patient-reported importance of obtaining complete or almost complete clearance of psoriasis or AD. Patients with AD reported overall greater patient-perceived importance of almost complete and

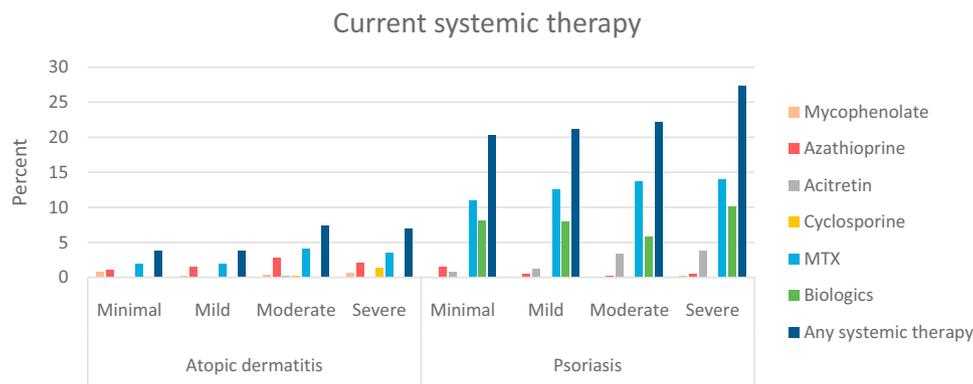


Fig 2. Current treatments among patients with psoriasis and atopic dermatitis. MTX, Methotrexate.

complete skin clearance compared with patients with psoriasis, although this was deemed important by patients with either of these conditions.

Strengths and limitations

Several strengths and limitations apply to the interpretation of these findings. By using nationwide prescription data, we captured all relevant systemic therapies and biologics given to patients participating in the study, thus limiting recall bias. Our study is further strengthened by the sheer number of patients. However, whether the limited use of systemic therapy for patients with psoriasis or AD is due to patients' reluctance to initiate systemic therapy, medical considerations (eg, contraindications), or other causes remains speculative. Similarly, the Danish health care system provides tax-supported health care, and patients receive biologics directly from the dermatologists without the need for special insurance or copay, which may decrease patients' subjective need for greater levels of skin clearance compared with if they had to pay out of pocket. Thus, it is possible that the importance of almost complete and complete skin clearance would be even higher in such patients.

Interpretation

Previous studies have shown positive associations between complete or almost complete clearance of skin disease and patient-reported outcomes.¹⁰⁻¹² Moreover, patients with AD who did not achieve high skin clearance during dupilumab therapy still experienced clinically meaningful reductions in AD severity and symptoms.¹³

However, to our knowledge, no previous studies have addressed the relative importance for patients with psoriasis and AD regarding complete or almost complete skin clearance. Our study not only fills this research gap but further identified specific factors

that may affect patients' subjective need for greater skin clearance. We showed that disease severity, itch, and certain anatomic locations were associated with perceived importance of obtaining complete or almost complete skin clearance. Our results indicate that patients who have psoriasis or AD in visible areas, such as the face and neck, may experience cosmetic concerns. Although dupilumab treatment seems to be effective across different body locations, it appears to be less potent on the face.¹⁴ Patients with psoriasis with involvement of the nails, palms, and soles may experience pain and functional complaints, explaining the observed association with self-reported importance of skin clearance. Surprisingly, itch was more strongly associated with importance of skin clearance in patients with psoriasis than in those with AD. Although speculative, pruritus is experienced in nearly all patients with AD, whereas this is seen in greater variation among patients with psoriasis, possibly explaining the difference in pruritus impact between these diseases. Patients receiving systemic therapy or biologics expressed greater importance of skin clearance than patients who were not receiving systemic therapy. This could be an indicator that these patients may be more affected by their disease but also that they may be more motivated to obtain skin clearance because they are willing to take systemic medications (including biologics) and accept the risk of potentially serious adverse effects. Unlike in countries such as the United States, it is against the law for pharmaceutical companies to advertise for prescription-based drugs to patients and other non-health care providers. Consequently, advertisements, for example, for biologics, are not shown in magazines or on television in Denmark. Although patients may readily obtain such information from the Internet, it is possible that their knowledge about novel treatment options are lower than, for example,

in the United States, which may affect patients' subjective need for skin clearance. The very small proportions of patients receiving systemic therapy also show the presence of undertreatment in patients who are candidates for systemic therapy; however, whether this low proportion is due to medical contraindication or to hesitation from patients or physicians remains unclear.

Compared with clinical trials, the use of potent systemic therapies (ie, biologics) for the treatment of psoriasis has yielded lower levels of skin clearance and, as a consequence, also a lower proportion of patients reporting a DLQI of 0 or 1 over time.⁵ However, in recent years, hitherto unseen levels of skin clearance have been reported in clinical trials of novel biologics for psoriasis and AD.³ For psoriasis, there has been a shift toward considering a 90% reduction in Psoriasis Area and Severity Index, or obtaining almost complete skin clearance, as the new criterion standard. This move is in line with findings from this study, which suggest that almost complete skin clearance is of greater importance to patients than complete skin clearance. Nonetheless, our findings emphasize the considerable undertreatment among patients with psoriasis and AD and the apparent disconnect between the use of systemic treatments and patients' needs for complete or almost complete skin clearance.

REFERENCES

1. Al-Suwaidan SN, Feldman SR. Clearance is not a realistic expectation of psoriasis treatment. *J Am Acad Dermatol*. 2000;42:796-802.
2. Puig L. PASI90 response: the new standard in therapeutic efficacy for psoriasis. *J Eur Acad Dermatol Venereol*. 2015;29:645-648.
3. Gordon KB, Strober B, Lebwohl M, et al. Efficacy and safety of risankizumab in moderate-to-severe plaque psoriasis (UltIMMa-1 and UltIMMa-2): results from two double-blind, randomised, placebo-controlled and ustekinumab-controlled phase 3 trials. *Lancet*. 2018;392:650-661.
4. Okubo Y, Tsuruta D, Tang AC, et al. Analysis of treatment goal alignment between Japanese psoriasis patients and their paired treating physicians. *J Eur Acad Dermatol Venereol*. 2018;32:606-614.
5. Egeberg A, Ottosen MB, Gniadecki R, et al. Safety, efficacy and drug survival of biologics and biosimilars for moderate-to-severe plaque psoriasis. *Br J Dermatol*. 2018;178:509-519.
6. Puig L, Augustin M, Blauvelt A, et al. Effect of secukinumab on quality of life and psoriasis-related symptoms: a comparative analysis versus ustekinumab from the CLEAR 52-week study. *J Am Acad Dermatol*. 2018;78:741-748.
7. Egeberg A, Andersen YM, Thyssen JP. Prevalence and characteristics of psoriasis in Denmark: findings from the Danish Skin Cohort. *BMJ Open*. 2019.
8. Schmidt M, Schmidt SA, Sandegaard JL, Ehrenstein V, Pedersen L, Sorensen HT. The Danish National Patient Registry: a review of content, data quality, and research potential. *Clin Epidemiol*. 2015;7:449-490.
9. Kildemoes HW, Sorensen HT, Hallas J. The Danish National Prescription Registry. *Scand J Public Health*. 2011;39:38-41.
10. Strober B, Papp KA, Lebwohl M, et al. Clinical meaningfulness of complete skin clearance in psoriasis. *J Am Acad Dermatol*. 2016;75:77-82.e7.
11. Viswanathan HN, Chau D, Milmont CE, et al. Total skin clearance results in improvements in health-related quality of life and reduced symptom severity among patients with moderate to severe psoriasis. *J Dermatolog Treat*. 2015;26:235-239.
12. Feldman SR, Bushnell DM, Klekotka PA, et al. Differences in psoriasis signs and symptom severity between patients with clear and almost clear skin in clinical practice. *J Dermatolog Treat*. 2016;27:224-227.
13. Silverberg JI, Simpson EL, Ardeleanu M, et al. Dupilumab provides important clinical benefits to patients with atopic dermatitis who do not achieve clear or almost clear skin according to the Investigator's Global Assessment: a pooled analysis of data from 2 phase III trials. *Br J Dermatol*. 2019;181:80-87.
14. Blauvelt A, Rosmarin D, Bieber T, et al. Improvement of atopic dermatitis with dupilumab occurs equally well across different anatomic regions: data from phase 3 clinical trials. *Br J Dermatol*. 2019;181(1):196-197.