Institute, National Institutes of Health, US Department of Health and Human Services, Bethesda, Maryland.[d]

Funding sources: Supported by the Intramural Research Program, Division of Cancer Epidemiology and Genetics, National Cancer Institute, National Institutes of Health, US Department of Health and Human Services.

Conflicts of interest: None disclosed.

IRB approval status: This study was exempt from IRB review because SEER does not have personal identifiers.

Reprints not available from the authors.

Correspondence to: Zhi-Ming Mai, MD, MPH, MPhil, PhD, Radiation Epidemiology Branch, DCEG, National Cancer Institute, NIH, DHHS, 9609 Medical Center Dr, Rm 7E522, MS 9778, Bethesda, MD 20892-9778

E-mail: zhiming.mai@nih.gov

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https://doi.org/10.1016/j.jaad.2020.03.077

Opioid prescribing in adults with and without psoriasis

To the Editor: Opioids are generally not indicated for chronic pain from musculoskeletal and skin diseases[1]; however, there is emerging literature that patients with chronic rheumatologic and dermatologic diseases are receiving opioids at a higher rate than the general population.[2-4] The objective of this study was to examine the 1-year incidence of opioid prescriptions in opioid-naive adults with and without psoriasis.

We used data from the Optum electronic health records database (January 1, 2007, through June 30, 2017). Patients were classified as having psoriasis if they had 2 diagnosis codes for psoriasis on 2 separate days or 1 diagnosis for psoriasis plus a prescription for a systemic psoriasis therapy/phototherapy on a separate day. Patients were categorized as having moderate-severe psoriasis if they had a prescription for a systemic therapy or a claim code for phototherapy during the study period. All other patients were categorized as having mild disease. Control patients were those without a diagnosis code for psoriasis or psoriatic arthritis during the study period and at least 2 encounters on separate days. To select an opioid-naive population, study time began 1 year after the second qualifying event and was continued for 12 months. Patients with an opioid prescription during the 12-month baseline period were excluded. Only patients with the full 24 months of eligibility were included. The University of Pennsylvania institutional review board approved this study as exempt.

The outcome of interest was a prescription for an oral or transdermal opioid (excluding cough suppressants) from an ambulatory encounter. Measured covariates included sex; age; ethnicity; race; and a history of alcohol abuse, cancer, depression, and psoriatic arthritis. Descriptive statistics were used to examine age, sex, comorbidity distribution, and the number of opioid prescriptions during the study period. Logistic regression was used to examine the odds of receiving an opioid prescription in adults with psoriasis compared to those without psoriasis.

There were 99,830 individuals with psoriasis and 261,418 adults without psoriasis (Table I). Psoriasis patients were older and had higher rates of all comorbidities of interest. The demographics for patients with mild psoriasis were similar to those with moderate-severe psoriasis. During the 12-month study period, 1.9% of patients with psoriasis and 0.5% of control patients received an incident prescription for an opioid (chi-square test, $P < .001$). More patients with moderate-severe psoriasis received a prescription than those with mild disease (2.3% vs 1.7%, $P < .001$). In the adjusted analysis, patients with mild psoriasis and moderate-severe psoriasis had 2.64 (95% confidence interval, 2.43-2.87) and 3.78 (95% confidence interval, 3.35-4.26) odds of receiving an incident opioid prescription compared to adults without psoriasis, respectively (Table II).

In summary, using electronic health records from the United States, we determined that adults with psoriasis were more likely to receive an incident opioid prescription than those without psoriasis. Limitations to this analysis include the analysis of prescribed, not filled, opioids. Additionally, we did not have information about the indication, dose, or dispensed quantity. More research is needed to characterize opioid use among patients with psoriasis

Table I. Baseline characteristics of the study population

Characteristics	Control individuals n = 261,418	All psoriasis n = 99,830	Mild psoriasis n = 80,057	Moderate-severe psoriasis n = 19,773
Female, n (%)	138,136 (53.0)	51,243 (51.4)	40,878 (51.2)	10,365 (52.5)
Age, y, mean (SD)	38.9 (23.9)	50.0 (18.3)	50.3 (18.7)	48.8 (16.4)
Race, n (%)				
White	149,916 (57.3)	77,739 (77.9)	62,356 (77.9)	15,383 (77.8)
African American	24,222 (9.3)	3693 (3.7)	3022 (3.8)	671 (3.4)
Asian	6259 (2.4)	2408 (2.4)	1900 (2.4)	508 (2.6)
Other/unknown	81,021 (31.0)	15,990 (16.0)	12,779 (16.0)	3211 (16.2)
Ethnicity, n (%)				
Hispanic	18,138 (6.9)	4847 (4.9)	3977 (5.0)	870 (4.4)
Not Hispanic	150,345 (57.5)	78,522 (78.7)	62,837 (78.5)	15,685 (79.3)
Unknown	92,935 (35.6)	16,461 (16.5)	13,243 (16.5)	3218 (16.3)
Medical comorbidities, n (%)				
Alcohol abuse	3093 (1.2)	4667 (4.7)	4110 (5.1)	557 (2.8)
Cancer	4663 (1.8)	7261 (7.3)	6103 (7.6)	1158 (5.9)
Depression	7784 (3.0)	17,993 (18.0)	15,236 (19.0)	2757 (13.9)
Psoriatic arthritis	N/A	8726 (8.7)	3523 (4.4)	5203 (26.3)
Received ≥1 opioid prescription, n (%)	1249 (0.5)	1845 (1.9)	1388 (1.7)	457 (2.3)

N/A, Not applicable; *SD*, standard deviation.

Table II. Factors associated with receipt of an opioid prescription among patients with psoriasis compared to those without psoriasis

Factor	OR (95% CI)
Female sex	1.10 (1.02-1.18)
Age, per 1-year increase	1.01 (1.01-1.01)
Race	
White	Reference
African American	1.18 (1.03-1.35)
Asian	0.52 (0.38-0.71)
Other	0.39 (0.35-0.44)
Psoriasis severity	
Mild	2.64 (2.43-2.87)
Moderate-severe	3.78 (2.36-4.26)
Medical comorbidities	
Alcohol abuse	1.15 (0.96-1.38)
Cancer	1.12 (0.97-1.29)
Depression	1.67 (1.52-1.84)
Psoriatic arthritis	0.99 (0.84-1.16)

CI, Confidence interval; *OR*, odds ratio.

and understand why patients with psoriasis are receiving prescriptions for opioids.

Megan H. Noe, MD, MPH, MSCE,[a] Daniel B. Shin, PhD,[b] Mackenzie R. Wehner, MD, MPhil,[b,c,d] David J. Margolis, MD, PhD,[b,e] and Joel M. Gelfand, MD, MSCE[be]

From the Department of Dermatology, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts[a]; Department of Dermatology, University of Pennsylvania, Philadelphia[b]; Department of Health Services Research, The University of Texas M.D. Anderson Cancer Center, Houston[c]; Department of Dermatology, The University of Texas M.D. Anderson Cancer Center, Houston[d]; and Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania, Philadelphia.[e]

Funding sources: Supported in part by a Center Core Center of Excellence Grant from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (P30 AR069589). Dr Noe is supported by a Career Development Award (K23-AR073932) from the National Institute of Arthritis and Musculoskeletal and Skin Diseases. Dr Wehner was supported by a National Institute of Arthritis and Musculoskeletal and Skin Diseases/National Institutes of Health Dermatology Research Training grant (T32 AR7465; principal investigator: Sarah E. Millar).

Disclosure: Dr Margolis receives research funding as the principal investigator via the Trustees of the University of Pennsylvania (R01-AR060962, R01- AR070873, and R01-DK116199) and from the National Institutes of Health and Valeant Pharmaceuticals (PEER study) and Sunovion Pharmaceuticals (none of this funding was used for this study), and he has consulting activities primarily as a member of data monitoring boards or scientific advisory boards with Leo, Johnson and Johnson, Pfizer, Sanofi, Kerecis, and Cell Constructs (none of these activities are associated with the outcomes of this study).

Dr Gelfand served as a consultant for Bristol-Myers Squibb, Boehringer Ingelheim, GlaxoSmithKline, Janssen Biologics, Novartis Corp, UCB (Data Safety and Monitoring Board), Sanofi, and Pfizer Inc, receiving honoraria; receives research grants (to the Trustees of the University of Pennsylvania) from AbbVie, Janssen, Novartis Corp, Celgene, Ortho Dermatologics, and Pfizer Inc; and received payment for continuing medical education work related to psoriasis that was supported indirectly by Lilly, Ortho Dermatologic, and Novartis. Drs Noe, Shin, and Wehner have no conflicts of interest to declare.

IRB approval status: Not applicable.

Reprints not available from the authors.

Correspondence to: Megan Noe, MD, MPH, MSCE, Department of Dermatology, Brigham and Women's Hospital, 221 Longwood Ave, Boston, MA 02115

E-mail: mnoe2@bwh.harvard.edu

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https://doi.org/10.1016/j.jaad.2020.03.080

The adverse effect profile of acitretin in a pediatric dermatology population—Longitudinal cohort study and recommendations for monitoring

To the Editor: The clinical benefit of acitretin has been amply shown in the treatment of disorders of keratinization in childhood, particularly in psoriasis and ichthyosis. The adverse effects (AEs) of acitretin are well studied in adults, and monitoring guidelines were issued by the British Association of Dermatologists.[1] However, AEs in childhood are less well studied, particularly in non-psoriasis cohorts.

A retrospective case note review was undertaken of all 174 patients prescribed acitretin between 1993 and 2015. Patient variables collected were diagnosis; demographics; age at starting acitretin; length of time monitored while receiving acitretin (as measured by age at stopping treatment or age of transfer to adult services if still receiving the medication); starting, maximal, and final doses; and AEs. Children were usually seen by a dermatologist on a three-monthly basis and none were lost to follow-up in the study period. Clinical AEs were defined as any reported clinical symptom that had arisen since starting and could be attributed to acitretin. Laboratory AEs were defined as hepatic transaminase levels twice the upper limit of the normal range for age, and/or alkaline phosphatase levels at least 1.2-fold the upper limit of normal range for age, and/or triglyceride levels greater than 2.3 mmol/L. Primary outcome measures (clinical and laboratory AEs) were modeled with respect to 5 patient variables (sex, diagnosis, age at starting, dose/kg at starting, and length of time receiving acitretin) by multiple logistic regression (SPSS, version 22; SPSS Inc, Chicago, IL). A Bonferroni correction for multiple testing was applied, reducing the level of significance to $P < .005$. Response to treatment was not a primary outcome but has been recorded here for comparability with other studies.

Cohort data are shown in Table I. There were no fatal or irreversible AEs documented due to acitretin. Clinical AEs were reported in 24%, leading to permanent cessation of treatment in 10% of the total cohort, although this overlapped with lack of adequate response to the medication—in other words, the balance of beneficial and adverse clinical AEs was important and not easily measurable. Laboratory AEs occurred in 22%, leading to permanent cessation in 4% of the total cohort. Importantly, laboratory AEs were very rare after 2 years of uneventful treatment (Supplemental Figure 1; available via Mendeley at https://data.mendeley.com/datasets/x7cp29vtgk/draft?a=11828aec-97a2-46f7-8dd2-49a213c6ddc0). Reduced bone density was seen in 3 patients with ichthyosis, a known risk factor for vitamin D deficiency, but was not routinely screened for. There were no significant associations between clinical or laboratory AEs and the 5 patient variables. Half of those children who had acitretin stopped for any AE subsequently had the drug restarted.