Overall, livedo racemosa with a large branch pattern, nodules, or ulcerations in a context of neurovascular events, recurrent fever, low immunoglobulin M levels, and pediatric onset is suggestive of DADA2. Although cPAN on skin biopsy is suggestive of DADA2, its absence or the presence of thrombotic features does not exclude the diagnosis.

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Characteristics of dermatologists sanctioned by the Office of Inspector General: A cross-sectional database analysis

To the Editor: Sanctions such as medical license suspension are a distant yet ominous threat to physicians. Given that few data exist, we analyzed the nature of serious action against dermatologists and the characteristics of disciplined dermatologists.

Dermatologists subject to significant disciplinary action were identified by using the Office of Inspector General (OIG)'s List of Excluded Individuals and Entities (LEIE).[1] This is a list of individuals barred from receiving payment from federally funded health care programs subsequent to disciplinary action pursuant to sections 1128 and 1156 of the Social Security Act. Data on medical license termination or suspension must be reported by state medical licensing boards, and this information is relayed to the OIG. Additionally, individuals

Table I. Demographic information for dermatologists on the Office of the Inspector General's LEIE

Physician characteristics (N = 35)	Physician count, n (%)
Sex	
Male	29 (82.9)
Female	6 (17.1)
Medical education	
US MD	26 (74.3)
US DO	2 (5.7)
International medical school	3 (8.6)
Unknown	4 (11.4)
Age at time of exclusion, years	
<40	0 (0.0)
41-50	7 (20.0)
51-60	13 (37.1)
61-70	6 (17.1)
>71	9 (25.7)
Geographic location at time of exclusion	
New England: CT, ME, MA, NH, RI, VT	3 (8.6)
Mid-Atlantic: NJ, NY, PA	2 (5.7)
East North Central: IL, IN, MI, OH, WI	5 (14.3)
West North Central: IA, KS, MN, MO, NE, ND, SD	0 (0.0)
South Atlantic: DE, FL, GA, MD, NC, SC, VA, DC, WV	13 (37.1)
East South Central: AL, KY, MS, TN	1 (6.7)
West South Central: AR, LA, OK, TX	3 (8.6)
Mountain: AZ, CO, ID, MT, NV, NM, UT, WY	2 (5.7)
Pacific: AK, CA, HI, OR, WA	6 (17.1)

DO, Doctor of osteopathic medicine degree; *LEIE*, List of Excluded Individuals and Entities; *MD*, doctor of medicine degree.

are directly identified via OIG investigators. Any individual guilty of committing a qualifying infraction delineated by the Act will be added to the list unless an appeal is accepted by the OIG. Credible publicly available sources, including the LEIE, Centers for Medicare and Medicaid Services, National Provider Identifier registry, state medical license verification portals, and court documents, were used to collect demographic information and details of disciplinary action against excluded dermatologists. The study was exempted by the University of Connecticut Health Center institutional review board.

Dermatologists comprised 35 (0.52%) of the 6649 physicians on the LEIE (Table I). Men (29, 82.9%), US doctor of medicine degree graduates (26, 74.3%), and those older than 50 years (28, 80%) composed the majority of excluded dermatologists. Nine (25.7%) dermatologists were excluded for program-related crimes, and 13 (37.1%) were excluded for license revocation, suspension, or surrender (Tables II and III).

Dermatologists were underrepresented on the LEIE compared to the proportion in the general physician population, consistent with findings that physician discipline is not distributed equally by specialty.[2,3] Men and older physicians had higher representation on the LEIE compared to the national dermatologist workforce, which is also consistent with existing literature.[2-4] Differences in practice style, patient interaction, and propensity for precarious and/or aggressive behavior have been proposed as the basis of these sex and age discrepancies.[2] Additionally, the higher proportion of older disciplined physicians could be related to the accumulation of inappropriate habits and discipline.[2]

The majority of disciplinary cases involved multiple infraction categories, indicating that unlawful behavior does not always occur in isolation. Although the counts and nature of these infractions vary, dermatologists on the LEIE demonstrated multiple and/or egregious offenses involving clear wrongdoing. Cases related to quality of care involved gross deviations from the standard of care rather than accidental medical shortcomings (eg, consistently performing Mohs surgery for lesions not confirmed by biopsy). Avoiding behaviors that have caused OIG exclusions, practicing in line with standard of care, and avoiding grossly immoral personal conduct are sensible strategies to prevent serious disciplinary action.

This study highlights the importance of clinical competency, integrity, and professionalism among practicing dermatologists. Knowledge of the causes for serious disciplinary action allows dermatologists to reflect on their current practices and, if necessary, remediate deficiencies to mitigate deleterious impacts on patient care. Limitations of this study include missing data for several physicians and the potentially subjective categorization of infractions.

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Table II. Exclusion type regarding physicians on the Office of the Inspector General's LEIE as of December 1, 2019

LEIE exclusion type* (N = 35 dermatologists)	Physicians, n (%)
Mandatory exclusions	
Conviction of program-related crimes (criminal offenses related to Medicare/Medicaid fraud)	9 (25.7)
Felony conviction relating to health care fraud (other than program-related crimes)	3 (8.6)
Felony conviction relating to controlled substance	6 (17.1)
Permissive exclusions	
License revocation, suspension, or surrender	13 (37.1)
Fraud, kickbacks, and other prohibited activities	3 (8.6)
Breach of settlement agreement	1 (2.9)

LEIE, List of Excluded Individuals and Entities.
*LEIE exclusion type was obtained directly from information in the LEIE database.

Table III. Infraction details regarding physicians on the Office of the Inspector General's LEIE as of December 1, 2019

Specific infraction categories and details* (N = 35 cases)	Occurrences, n (%)†
Financial	14 (40.0)
- Billed insurers for cosmetic services under a false claim of medical necessity, services that were not truly rendered, and/and services that were more highly reimbursed than services truly rendered	
- Committed tax fraud or falsification of bankruptcy	
- Violated Stark Law	
- Founded a dummy corporation and diverted funds that were being paid for laboratory services performed at another facility	
- Other unspecified health care fraud	
Quality of patient care	16 (45.7)
- Failed to comply with standards of care pertaining to minimizing patient harm, including minimizing unnecessary procedures	
- Used medications and/or medical supplies not deemed safe for patient use	
- Failed to comply with standards of care for surgical procedures including marking surgical sites and obtaining adequate margins for excisions	
- Failed to provide adequate follow-up after biopsies and procedures	
- Failed to appropriately clear patients medically before surgical procedures	
- Failed to provide adequate supervision of unlicensed employees	
- Inadvertently misdiagnosed patients or failed to detect a significant diagnosis on several instances	
- Intentionally misdiagnosed patients with the motive of providing additional procedures	
- Provided a quality of patient care generally below the standard of medical care	
- Failed to preserve medical records or obtain and/or document informed consent	
Personal	14 (40.0)
- Possessed controlled substances with intent to deliver and/or distributed controlled substances	
- Possessed controlled substances with intent for personal use	
- Authorized an inordinate amount of prescriptions for controlled substances	
- Participated in sexual misconduct and/or rape involving patients	
- Breached patient respect and confidentiality in a public forum	
- Demonstrated psychological instability and ineptitude for medical practice	
- Found guilty of murder	
Unknown due to missing information	6 (17.1)

LEIE, List of Excluded Individuals and Entities.
*Specific infraction categories and details were based on facts obtained from other credible publicly available documents that provided more details of the physician infractions leading to being listed on LEIE.
†The sum of the count of specific infraction categories is greater than 35 because each physician case may not be limited to 1 specific infraction category based on the specific facts of each case. Likewise, the sum of the percentage of specific infraction categories is greater than 100% because the denominator represents the total number of cases.

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Skin permeation and penetration of crisaborole when coapplied with emollients

To the Editor: Atopic dermatitis (AD), a chronic inflammatory skin disease characterized by eczematous lesions and pruritus, is prevalent worldwide.[1] Crisaborole ointment 2% is a nonsteroidal phosphodiesterase 4 inhibitor for the treatment of mild to moderate AD.[2] Although moisturizers are often used in combination with topical therapies to reduce xerosis and aid in skin barrier repair,[3] their effect on topical drug permeation and penetration when coapplied is not well understood. The objective of this study was to assess the effect of over-the-counter (OTC) cream and ointment moisturizers on the permeation and penetration of crisaborole.

Crisaborole was applied (10 mg/cm^2) to ex vivo healthy abdominal human skin (3 donors, 4 replicates, sliced to a thickness of 500 ± 50 μm with a dermatome) either alone, 15 minutes before, immediately after, or 15 minutes after application of OTC cream (Cetaphil; Galderma Inc, Baie d'Urfé, Montréal, Canada) or OTC ointment (Aquaphor; Beiersdorf Inc, Wilton, CT). The skin was mounted in a flow-through diffusion cell, and the receptor solution (phosphate-buffered saline) was collected at 2-hour intervals up to 24 hours. The amount of crisaborole delivered into the skin and through the skin into the receptor solution was determined by liquid chromatography–tandem mass spectrometry.

When crisaborole was applied 15 minutes before either OTC cream or ointment, there were no statistical differences in the concentration of crisaborole in the receptor solution or the dermis (Figs 1 and 2). However, when crisaborole was applied immediately after OTC cream, the concentration of crisaborole was significantly decreased by approximately 3-fold in the receptor solution (Fig 1, *A*) and 2-fold in the dermis (Fig 2, *A*) compared with crisaborole alone ($P < .05$ for both). Similar results were observed for the epidermis. Application of crisaborole 15 minutes after OTC cream resulted in no statistical difference in the concentration of crisaborole in the receptor solution (Fig 1, *A*) or in the epidermis and dermis (Fig 2, *A*). When crisaborole was applied immediately after OTC ointment, there was no statistical difference in the concentration of crisaborole in the receptor solution (Fig 1, *B*) or in the epidermis and dermis (Fig 2, *B*). However, when crisaborole was applied 15 minutes after OTC ointment, the concentration of crisaborole decreased by approximately 2-fold in both the receptor solution (Fig 1, *B*) and the epidermis (Fig 2, *B*) ($P < .05$ for both).

There are limited data regarding the effect of coapplication of moisturizers and topical treatments.[4,5] Here, we show, using an ex vivo model, that the time between applications can affect drug penetration and permeation. The current findings in an ex vivo model suggest that crisaborole should be applied at least 15 minutes before OTC ointments and creams to minimize the impact on dermal absorption of crisaborole. The current study was limited by the use of ex vivo skin from patients without AD, although this approach is a suitable tool for demonstrating the bioequivalence of topical dosage forms.[6,7] The relationship between the results in this ex vivo study and clinical efficacy, as well as the applicability to other OTC moisturizer formulations, requires further investigation.

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