patients with skin cancer, while reducing access to care for all.[3] The decrease in DEU activity suggests a change in the ways of general population, perhaps due to fear of long waiting times or crowd. Determining if this loss was either due to patients fears in healthcare facilities or to other factors needs to be investigated. Unfamiliarity and lack of trust with technology tools for consultations are also possible reasons. In conclusion, while it helped substitute many in-person consultations when necessary, TD did not to take off during the COVID-19 pandemic. Development of TD usage remains essential to exploit its full capacities.

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Conflicts of interest

None of the authors have conflict of interest to declare (you will find for each authors the Conflict of Interest forms completed).

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Lack of association between seborrheic dermatitis and SARS-CoV-2 outcomes

To the Editor,

Seborrheic dermatitis (SD) is a common form of dermatitis. Immune dysregulation is presumed to play a role in SD pathogenesis, with increased prevalence of SD in patients with older age, immunosuppression, and neuropsychiatric disease.[1,2] These characteristics have also been found to be associated with worse SARS-CoV-2 outcomes. Several pro-inflammatory cytokines associated with greater SARS-CoV-2 morbidity, e.g. interleukin-1, 6, and tumor necrosis factor-alpha, contribute to SD pathogenesis.[1] A recent report of a severely ill SARS-CoV-2 patient developing SD suggests possible associations between these two conditions.[3] However, few studies examined potential associations between SD and SARS-CoV-2 outcomes. We investigated the relationship between SD and SARS-CoV-2 outcomes among adults with dermatologic disease.

The study was approved by the George Washington University institutional review board. We retrospectively analyzed medical records for patients treated at George Washington University Hospital and Medical Faculty Associates for SARS-CoV-2. Patients received standard-of-care dermatologic examination. Socio-demographics were compared between those with vs. without diagnosed SD and severe-critical vs. mild-moderate COVID-19 using chi-square and student's t-test for categorical and continuous variables, respectively. Binary logistic regression models were constructed with SARS-CoV-2 outcomes as dependent variables and SD as the binary independent variable. Multivariable models adjusted for socio-demographics and comorbidities. Crude and adjusted odds ratios (OR) and 95% confidence intervals (CI) were estimated. P-values were corrected using the approach of Benjamini-Hochberg.

Among 430 SARS-CoV-2 positive adults with skin disease, 39 (9.10%) had diagnosed SD, similar to the prevalence of SD in Turkish SARS-CoV-2 patients (11.8%).[4] Most (76.9%) SD patients were non-white. There were no significant differences between patients with vs. without SD with regard to sex, race, insurance status, history of smoking, cancer, immunosuppressant use, acquired immunodeficiency syndrome, diabetes mellitus (DM), congestive heart failure, obstructive lung disease, hypertension or chronic kidney disease ($P \geq 0.49$ for all). SARS-CoV-2 severity was associated with older age ($P < 0.0001$) and DM ($P < 0.0001$).

In multivariable models adjusting for the abovementioned covariables, SD was not associated with hospitalization (adjusted odds ratio [95% confidence interval]: 0.26 [0.08–0.86], corrected *P*-value = 0.1686), acute level of care at initial medical care (0.68 [0.33–1.42], $P = 0.5840$), severe-critical SARS-CoV-2 (0.80 [0.27–2.33], $P = 0.8618$), requirement of supplemental

Table 1 Association of seborrheic dermatitis with COVID-19 severity and hospitalization

Outcome	Seborrheic dermatitis *n* (%)		Crude OR (95% CI)	Corrected *P*-value	Adjusted OR (95% CI)	Corrected *P*-value
	Yes	No				
Hospitalization†						
No	35 (89.74)	262 (71.39)	1.00 (ref)	–	1.00 (ref)	–
Yes	4 (10.26)	105 (28.61)	0.29 (0.10–0.82)	0.1686	0.26 (0.08–0.86)	0.1686
Visit type†						
Outpatient	19 (48.72)	144 (37.02)	1.00 (ref)	–	1.00 (ref)	–
Inpatient	20 (51.28)	245 (62.98)	0.62 (0.32–1.20)	0.4632	0.68 (0.33–1.42)	0.5840
Oxygen therapy†						
No	37 (94.87)	317 (82.55)	1.00 (ref)	–	1.00 (ref)	–
Yes	2 (5.13)	67 (17.45)	0.26 (0.06–1.09)	0.2338	0.24 (0.05–1.11)	0.2338
COVID-19 Severity†						
Asymptomatic-Mild	34 (87.18)	322 (82.99)	1.00 (ref)	–	1.00 (ref)	–
Severe-Critical	5 (12.82)	66 (17.01)	0.72 (0.27–1.90)	0.7856	0.80 (0.27–2.33)	0.8618
Hospital duration†						
1–6 days	3 (75.00)	59 (57.84)	1.00 (ref)	–	1.00 (ref)	–
≥7 days	1 (25.00)	43 (42.16)	0.46 (0.05–4.55)	0.7856	0.36 (0.03–4.08)	0.6918
Course‡						
Recovered	37 (97.37)	347 (94.29)	1.00 (ref)	–	1.00 (ref)	–
Chronic complications	0 (0.00)	13 (3.53)	<0.001 (<0.001–>999.999)	0.9999	<0.001 (<0.001–>999.999)	0.9999
Death	1 (2.63)	8 (2.17)	1.17 (0.14–9.63)	0.9999	0.76 (0.06–9.38)	0.9999

Adjusted OR and 95% CI were generated for age [continuous], sex [male/female], race [white/non-white], immunosuppressant use [yes/no], smoking [yes (current-former)/no (never)], BMI [continuous], insurance status [public/private], diagnosis of cancer [yes/no], AIDS [yes/no], diabetes mellitus [yes/no]. *P*-values were corrected using the approach of Benjamini-Hochberg. Corrected *P*-values are presented.

†Binary logistic regression models were constructed with seborrheic dermatitis diagnosis as the independent variable and COVID-19 outcomes as the dependent variables. Dependent variables included hospitalization (yes vs. no), visit type (inpatient vs. outpatient), oxygen therapy (yes vs. no), COVID-19 severity (severe-critical vs. asymptomatic-mild) and hospital duration (1–6 days vs. ≥7 days).

‡Multinomial logistic regression models were constructed with seborrheic dermatitis diagnosis as the independent variable (yes/no) and COVID-19 course as the dependent outcome variable (chronic complications or death vs recovered). Crude odds ratios (OR) and 95% confidence intervals (CI) were generated for unadjusted models.

oxygen therapy (0.24 [0.05–1.11], $P = 0.2338$), extended hospital stay (0.36 [0.03–4.08], $P = 0.6918$), lingering COVID-19 symptoms (<0.001 [<0.001–999.999], $P = 0.9999$) or death (0.76 [0.06–9.38], $P = 0.9999$) (Table 1). Similar results were observed in bivariable models. Intubation, extracorporeal membrane oxygenation, and coagulation events were rare events with inadequate frequency to be modeled. Taken together, the results indicate that SD is not associated with poorer SARS-CoV-2 outcomes compared to other skin diseases, despite its underlying associations with immune dysregulation and use of immunosuppressants.

Study strengths include testing multiple COVID-19 outcomes and controlling for confounders in multivariable analyses. Limitations include that the cohort was derived from a single center, with racial homogeneity and no data on SD characteristics or SARS-CoV-2 variants. Nevertheless, SD was not associated with worse SARS-CoV-2 outcomes.

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Data availability statement

Data are available upon request from the authors.

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Subacute cutaneous lupus erythematosus induction after SARS-CoV-2 vaccine in a patient with primary biliary cholangitis

Dear Editor,

We describe a subacute cutaneous lupus erythematosus (SCLE) case developed after vaccination with mRNA COVID-19 vaccine.[1]

A 30-year-old Italian woman presented due to the sudden occurrence of papules and plaques on her face and upper back. The eruption started following a day spent outdoors, ten days after receiving the SARS-CoV-2 mRNA vaccine second dose (Pfizer, Cominarty). At the time of our consultation, we observed purplish, erythematous, and scaly papules and plaques on the upper back (Fig. 1a), cheeks, temples, and forehead (Fig. 2a). The rest of the skin was unaffected.

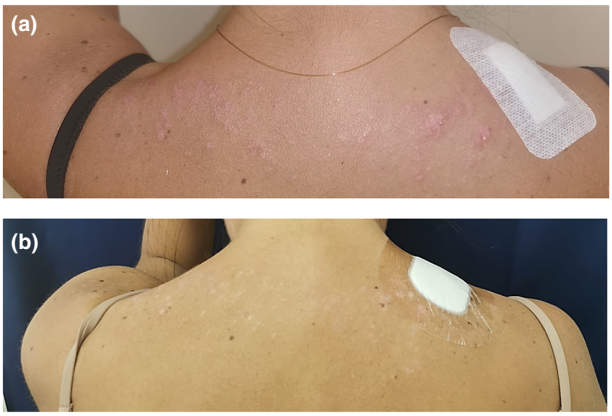

Figure 1 (a) Eruption on the upper trunk and erythematous plaques of the face. Note the small, erythematous, and slightly scaly papules of the back. (b) Complete resolution of the eruption, after three weeks of therapy, was achieved. Still, post-inflammatory hypopigmented macules are visible on the back.

She reports that she has not changed her habits, has not introduced new drugs or suffered from new diseases in the last year. However, her past medical history was complex: she was born with biliary tract atresia, operated on with Kasai surgery. She developed portal hypertension and was treated with ursodeoxycholic acid for primary biliary cholangitis. Past

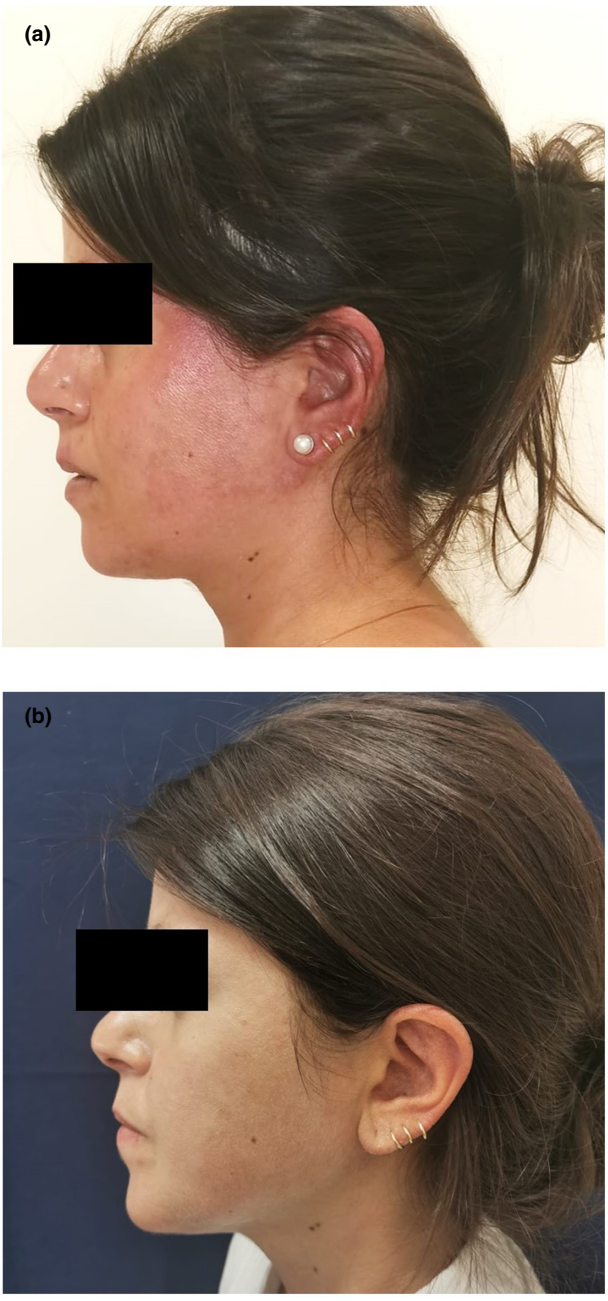

Figure 2 (a) Erythematous plaque of the face (b) Complete resolution after the therapy.