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Under-representation of people of African ancestry in publications on the cutaneous manifestations of COVID-19: coincidence or physiology?

To the Editor,

Recent publications have highlighted the rarity of patients with dark skin among COVID-19-related skin eruptions.[1] Indeed, very few patients of non-European descent were reported among 318 cases of COVID-19-related perniosis[2] and there was a virtual absence of 'Covid toes' among a large population of African-American and Hispanic patients during the COVID-19 outbreak in New York City.[3]

These results prompted us to review the clinical charts and photographs of 80 patients referred by general practitioner, private practice dermatologists or emergency services to our department for chilblain-like lesions during the first wave of COVID-19 outbreak in Paris, between 9 April and 16 April 2020. None of the patients were of sub-Saharan African descent or had Fitzpatrick's skin phototype of 5 or 6. These findings contrast with the usual visits to our institution – 30% of our outpatient population are of sub-Saharan African descent, with phototype 5 or 6.

Two recruitment biases may be cited as reasons for the 'ethnic' differences in relation to COVID-19-chilblain-like lesions, but none of them seems plausible. Poor visibility of erythema and inadequate training in recognizing skin manifestations in richly pigmented skin is unlikely to be pertinent in this setting, given that chilblain-like lesions are usually symptomatic and hence unlikely to be missed/neglected by either patients or doctors. Socio-economic factors precluding access to dermatological care cannot explain the virtual absence of chilblain-like lesions in African-American and Hispanic patients in New York.[4] Finally, data from all the published studies support ethnic differences in relation to the incidence of COVID-19-related chilblain-like lesions. Vascular skin reactions of poor prognosis, such as ecchymosis or necrosis, were not reported in the study by Lester *et al.*[1] nor in a short case series of COVID toes in people of Fitzpatrick skin types III to V.[5]

In most of the published series, chilblains appeared to affect young patients with discrete to mild symptoms of COVID-19 and no microbiological or serological evidence of SARS-CoV-2 infection. This has led Hebert et al. to refute any link between SARS-CoV-2 infection and such lesions.[6] According to these authors, several biases could contribute to the concomitance of COVID-19 and chilblains outbreaks; however, such biases could hardly account for the aforementioned differences between patients of diverse ethnic backgrounds.

It is noteworthy that patients of African descent not only show fewer, if any, chilblain-like lesions, but also have a poorer prognosis when infected by the SARS-CoV-2.[4] This could suggest a pathophysiological link between a more effective immune response to SARS-CoV-2 infection and the development of acral vascular lesions. According to this hypothesis, the restriction of chilblain outbreaks primarily to people of European ancestry may be due to genetic factors (e.g. those impacting immune response) that predispose to the development of both chilblains and milder forms of COVID-19.

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Conflicts of Interest

C. Cassius state no conflict of interest; L Frumholtz state no conflict of interest; A de Masson state no conflict: O Dadzie state no conflict of interest; A. PETIT state no conflict of interest.

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Adverse skin reactions related to PPE among healthcare workers managing COVID-19

To the Editor,

The current COVID-19 pandemic has taken a massive toll on healthcare workers (HCWs).[1] In order to mitigate the virus spread, HCWs are bound to adopt stringent preventive measures such as hand hygiene practices and use of personal protective equipments (PPE) in the form of protective masks, gloves, gowns, goggles or face shield, and respirators (i.e. N95 or FFP2 standard or equivalent) which make them susceptible to several adverse skin reactions.[2] We herein report PPE-related skin reactions and associated risk factors observed among healthcare workers managing COVID-19.

An online questionnaire was disturbed using Google Forms, after approval from institutional ethics committee, from 5 November to 5 December 2020, to all the doctors and nurses working in GMCH Chandigarh, India. Univariate and multivariate analysis were performed to assess associations between adverse skin reactions and the various variables. A total of 750 healthcare workers were administered the questionnaire out of which 503 participated in the study with a response rate of 67%. Out of the total, 308 (61.2%) participants were female, 194 (38.6%) males and 1 transgender. 395 (78.5%) participants were doctors, and 108 (21.5%) were staff nurses. 489 (97.21%) participants reported self-perceived adverse skin reactions after using PPE. This was consistent with previous studies reporting this rate between 70 and 97%.[3–5] Of note, this rate was staggeringly higher than what was reported before this pandemic (20-50%).[6] The most commonly affected site was nose (76%) followed by cheeks (61.1%), hands (49.8%), chin (8.1%) and neck (4.4%). Erythema was the most commonly reported sign (67%) followed by maceration (21%), exfoliation (17.3%) and acne (7.3%). Dryness (46%) and itching (45%) were the most common symptoms (Table 1). These clinical findings were in accordance with the findings of the previous studies.[4,7–9] A high frequency of nose lesions accounted to PPE use has been reported previously in studies.[4,7,8] Subjects working for >6 hours per day had higher

Table 1 Clinical characteristics of self-perceived adverse skin reactions (n = 503)

Clinical features	No of participants (Percentage)
Symptoms	
Dryness	233 (46.3%)
Itching	228 (45.3%)
Pain	160 (31.8%)
Signs	
Redness	338 (67.2%)
Erosions/ ulcer	114 (22.7%)
Maceration	107 (21.3%)
Desquamation	87 (17.3%)
Fissures	87 (17.3%)
Acne	87 (17.3%)
Affected sites	
Nose	371 (75.8%)
Cheek	299 (61.1%)
Hands	244 (49.8%)
Chin	40 (8.1%)
Neck	22 (4.4%)
Trunk	02 (0.4%)
Axilla	01 (0.2%)
Groin	05 (1%)