COVID-19 SPECIAL FORUM

Prevalence and characteristics of dermatological manifestations in COVID-19 positive dermatologists: Report from a web-based survey in India

Dear editor,

The available literature on dermatological manifestations of COVID-19 indicates a variation in prevalence and characteristics of mucocutaneous findings among different population groups. An early descriptive Chinese study reported a prevalence of 0.2%, however, a recent Spanish study reported a prevalence of 45.7%. Some of the possible reasons for this disparity could be a lack of awareness of cutaneous changes in the beginning of the pandemic, inadequate skin examination and underdiagnosis by non-dermatologists, lack of dermatologists at the frontline or ethnic variation. Indeed, studies that describe changes in patients with skin of colour (SOC) are limited and the available literature suggests that vasculitic lesions are uncommon in this population.

We conducted a web-based survey among Indian dermatologists who were confirmed cases of COVID-19. The idea behind this purposive sampling technique was the expectation that dermatologists can provide unique information as they would be unlikely to miss mucocutaneous signs and symptoms in themselves.

A predesigned web-based google form was circulated among Indian dermatologists and those who had COVID-19 were asked to fill the form. All data were deidentified. The survey included questions on age, gender, COVID-19 diagnosis type (suspected vs. laboratory confirmed), COVID-19 severity, mucocutaneous signs and symptoms with characteristics and timing. Data were analysed by using SPSS V.21.0.

A total of 74 dermatologists took part in the survey. Three forms were incompletely filled and hence were excluded from analysis. The responders belonged to the following age groups: 20–40 years (65.7%), 40–60 years (28.6%) and >60 years (5.7%); with a male:female ratio of 1:0.9. The laboratory test used to confirm COVID-19 infection was RT-PCR in 80.3%, rapid antigen test in 9.8% and COVID-19 IgG antibody titre in 4.2%. One dermatologist was diagnosed by pulmonary changes on computed tomography scan, while three were contacts of a confirmed COVID-19 case and did not take confirmatory tests themselves. The spectrum of disease severity ranged from asymptomatic (8.5%), mild (49.3%), moderate (35.2%), severe

Table 1 Characteristics of responders with mucocutaneous manifestations

| No | Age group (years)/Gender | COVID-19 diagnostic test type | Severity of COVID-19 | Characteristics of mucocutaneous changes | Mucocutaneous symptoms | Site involved | Onset of dermatologic findings relative to systemic COVID-19 symptoms | Duration of mucocutaneous changes |
|----|--------------------------|-------------------------------|----------------------|-----------------------------------------|------------------------|--------------|---------------------------------------------------------------|----------------------------------|
| 1  | 20–40/female             | RT-PCR                        | Mild                 | Urticaria                               | Itching                | Lower Limb   | Preceded                                                      | >7 days                          |
| 2  | 20–40/female             | RT-PCR                        | Moderate             | 1. Macular erythema                     | Both asymptomatic      | 1. Upper limb | Both followed                                                 | 2–5 days                         |
|    |                          |                               |                      | 2. Non-specific mucosal lesions         |                        | 2. Oral mucosa |                                                               |                                  |
| 3  | 20–40/male               | RT-PCR                        | Severe               | Morbilliform rash                       | Asymptomatic           | Foot         | Simultaneous                                                  | 2–5 days                         |
| 4  | 20–40/male               | RT-PCR                        | Moderate             | Glossitis and Papillitis                | Asymptomatic           | Oral Mucosa   | Simultaneous                                                  | 5–7 days                         |
| 5  | 20–40/male               | RAT                            | Mild                 | 1. Urticaria                            | 1. Itching             | 1. Foot       | Simultaneous                                                  | 2–5 days                         |
|    |                          |                               |                      | 2. Non-specific mucosal lesions         | 2. Asymptomatic        | 2. Oral mucosa |                                                               |                                  |
| 6  | 20–40/female             | RT-PCR                        | Mild                 | Oral ulcer                             | Burning sensation      | Oral mucosa   | Preceded                                                      | <2 days                          |
| 7  | 40–60/male               | RT-PCR                        | Moderate             | Glossitis and papillitis                | Burning sensation      | Oral Mucosa   | Simultaneous                                                  | 2–5 days                         |
| 8  | 40–60/male               | RT-PCR                        | Severe               | Urticaria                              | Itching                | Entire body   | Simultaneous                                                  | 5–7 days                         |
| 9  | 20–40/male               | RT-PCR                        | Moderate             | Macular erythema                       | Asymptomatic           | Chest         | After                                                         | 2–5 days                         |
| 10 | 40–60/female             | RT-PCR                        | Moderate             | Morbilliform rash                      | Itching                | Entire body   | Simultaneous                                                  | 2–5 days                         |
| 11 | 20–40/male               | RT-PCR                        | Moderate             | Glossitis and papillitis                | Burning sensation      | Oral mucosa   | Simultaneous                                                  | 2–5 days                         |
| 12 | >60/male                 | RT-PCR                        | Moderate             | Urticaria                              | Burning sensation      | Oral Mucosa   | Simultaneous                                                  | 2–5 days                         |
| 13 | 20–40/female             | RT-PCR                        | Mild                 | Mucosal ulcer and gingivitis           | Burning sensation      | Oral Mucosa   | Simultaneous                                                  | 2–5 days                         |

No, Number; RAT, rapid antigen test; RT-PCR, reverse transcriptase-polymerase chain reaction.
(5.6%) to critical (1.4%). Thirteen responders (18.3%) experienced mucocutaneous symptoms during their diseases course. (Table 1) Eight responders had isolated skin changes (11.3%): urticarial lesions (5.6%;4/71), macular erythema (2.8%;2/71) and morbilliform rash (2.8%;2/71) whereas, mucosal manifestations (9.8%;7/71) included glossitis and papillitis (4.2%;3/71), oral ulcers (2.8%;2/71) and non-specific oral lesions (2.8%;2/71). One responder with oral ulcer also had gingivitis. Mucocutaneous lesions occurred either before (15.4%;2/13), concurrent with (76.9%;10/13) or after (7.6%;1/13) development of other systemic COVID-19 symptoms. Lesions lasted for 2-5 days (69.2%;9/13) in the majority; in others, duration was 5-7 days (15.4%;2/13) to less than 2 days (7.6%;1/13), or greater than 7 days (7.6%;1/13). All patients were laboratory-confirmed cases and disease severity indicated as mild (30.7%;4/13), moderate (53.8%;7/13) and severe (15.4%;2/13).

Accurate morphologic description is essential to understanding the various mucocutaneous findings and their prevalence in COVID-19. Globally, the reported prevalence varies from 0.2 to 45.7%.2,3 This large variation may be due to increased awareness among dermatologists as well as non-dermatologist physicians.

Additionally, mucocutaneous findings also vary with geography: vasculitic and pseudo-chilblain like lesions are more common in European countries and the United States.8,9 While studies from Brazil and India have found vasculitic lesions to be uncommon.4–6 In a previous Indian study, none of the asymptomatic, mild or moderate cases developed vasculitic lesions.10 Another interesting point is that despite a huge number of COVID-19 cases in India, reports describing mucocutaneous manifestations are scarce. One reason may be that dermatologists are not primary physicians for COVID-19 cases. Therefore, we conducted this survey among dermatologists with COVID-19 to reliably investigate the mucocutaneous manifestations in the Indian population. This survey is limited by a small sample size and similar surveys among dermatologists globally can aid in collecting more data.

Conflict of interest
Nil.

Financial disclosures
Nil.

References
1. Genovese G, Moltrasio C, Berti E, Marzano AV. Skin manifestations associated with COVID-19: current knowledge and future perspectives. Dermatol Ther. 2021; 46(1): 1–12.
2. Guan W, Ni Z, Hu Y et al. Clinical characteristics of coronavirus disease 2019 in China. N Engl J Med 2020; 382: 1708–1720.
3. Nuno-Gonzalez A, Martin-Carrillo P, Magaletsky K et al. Prevalence of mucocutaneous manifestations in 666 patients with COVID-19 in a field hospital in Spain: oral and palmoplantar findings. Br J Dermatol 2021; 184(1): 184–185.
4. Pangti R, Gupta S, Nischal N, Trikha A. Recognizable vascular skin manifestations of SARS-CoV-2 (COVID-19) infection are uncommon in patients with darker skin phototypes. Clin Exp Dermatol 2021; 46(1): 180–182.
5. Avancini J, Miyamoto D, Arnone M. Absence of specific cutaneous manifestations of SARS-Cov-2 in a reference center in Brazil. J Am Acad Dermatol 2021; 84(1): e67.
6. Das A, Singh V. Erythematous-edematous type of chilblain-like lesions and COVID-19: An Indian perspective. Dermatol Ther 2020; 33(6): e13912.
7. Clinical Spectrum of SARS-CoV-2 infection. https://www.covid19treatmentguidelines.nih.gov/overview/clinical-spectrum/ (Last accessed: 10-05-2021).
8. Marzano AV, Genovese G, Moltrasio C et al. Italian Skin COVID-19 Network of the Italian Society of Dermatology and Sexually Transmitted Diseases. The clinical spectrum of COVID-19-associated cutaneous manifestations: An Italian multicenter study of 200 adult patients. J Am Acad Dermatol 2021; 84(5): 1356–1363.
9. Freeman EE, McMahon DE, Lipoff JB et al. The spectrum of COVID-19-associated dermatologic manifestations: an international registry of 716 patients from 31 countries. J Am Acad Dermatol 2020; 83(4): 1118–1129.
10. Dalal A, Jakhar D, Agarwal V, Beniwal R. Dermatological findings in SARS-CoV-2 positive patients: an observational study from North India. Dermatol Ther. 2020; 33(6): e13849.

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Pityriasis rubra pilaris after Vaxzevria® COVID-19 vaccine

To the editor,
A 63-year-old Caucasian woman presented with rapidly developing lesions on both hands, elbows and feet, 9 days after she received the first dose of the Oxford-AstraZeneca COVID-19 vaccine ChAdOx1-S n-CoV19 (Vaxzevria®, AstraZeneca, Cambridge, UK).

On physical examination, she presented orange-red waxy palmoplantar keratoderma, symmetrical and sharply demarcated orange-red squamous plaques on the elbows, follicular keratotic orange-red papules on the dorsal aspect of hands and feet, and subtle erythema and fine diffuse scaling on the scalp, with associated pruritus. Onycholysis with orange border could also be seen on both great toenails (Fig. 1).