

## 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.<sup>1</sup> An early descriptive Chinese study reported a prevalence of 0.2%, however, a recent Spanish study reported a prevalence of 45.7%.<sup>2,3</sup> 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.<sup>4-6</sup> 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,<sup>7</sup> 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 <sup>6</sup>	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 2. Non-specific mucosal lesions	Both asymptomatic	1. Upper limb 2. Oral mucosa	Both followed	2–5 days
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 2. Non-specific mucosal lesions	1. Itching 2. Asymptomatic	1. Foot 2. Oral mucosa	Simultaneous	2–5 days
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/female	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	Itching	Upper limb	Simultaneous	2–5days
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%.<sup>2,3</sup> 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.<sup>8,9</sup> While studies from Brazil and India have found vasculitic lesions to be uncommon.<sup>4-6</sup> In a previous Indian study, none of the asymptomatic, mild or moderate cases developed vasculitic lesions.<sup>10</sup> 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.

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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).