

**LETTER**

# The development of dermatologic diseases in patients recovered from COVID-19

Dear Editor,

The novel coronavirus disease (COVID-19) caused by SARS-CoV-2 will be remembered as a pandemic that has brought serious destruction in human history. This disease, which progresses with severe lung involvement and failure, can be transmitted through droplets as well as body fluids containing aerosols.<sup>1</sup> Although SARS-CoV-2 is indeed not a dermatotropic virus, to date, numerous studies on cutaneous symptoms associated with COVID-19 have been published in the literature.<sup>2,3</sup> However, there are limited data on the role of this new coronavirus in the etiopathogenesis and triggering of dermatological diseases. Most recent studies reported a significant increase in certain skin diseases such as herpes zoster, pityriasis rosea, urticaria, telogen effluvium, alopecia areata, and herpes labialis after the pandemic.<sup>4,5</sup> Herein, we first reported dermatological diseases that develop after diagnosis of COVID-19 which confirmed by real-time polymerase-chain test (RT-PCR) test. Skin diseases caused by physical changes such as mask (eg, maskne, eczema) were beyond our goal.

As time progresses in the pandemic, the number of patients who have had or recovered COVID-19 increases. Thus, these patients ultimately apply to dermatology outpatient clinics for their skin

disturbances. Our cases were including patients who have had or recovered from COVID-19 and applied to the dermatology outpatient clinics between May 2020 and December 2020. In these cases, dermatological diseases did not exist before COVID-19 and had a strong temporal relationship with COVID-19. The characteristics of the patients are summarized in Table 1. Among 33 cases with RT-PCR-confirmed COVID-19, herpes zoster developed in eight cases, pityriasis rosea in eight cases, urticaria in seven cases, telogen effluvium in six cases, alopecia areata in two cases, and herpes labialis in two cases. The average occurrences time was 10.75 weeks for herpes zoster disease, 3.25 weeks for pityriasis rosea, 2.86 weeks for urticaria, 11.7 weeks for telogen effluvium, and 7 weeks for alopecia areata.

COVID-19 is an autoinflammatory and autoimmune process that develops as a result of immune system dysfunction along with viral infection.<sup>6</sup> As time passes, data that shows autoimmunity develops more in COVID-19 patients is getting stronger.<sup>6,7</sup> Previous cases that reported developing urticaria and alopecia areata after COVID-19 can be considered in this regard.<sup>8,9</sup> Given our cases, we believe that autoimmune and autoinflammatory skin diseases such as urticaria and

**TABLE 1** The characteristics of COVID-19 patients who have developed dermatologic diseases

Number	Age	Gender	Diagnosis	The time duration for diagnosis after COVID-19
1	57	Male	Herpes zoster	4 weeks
2	42	Female	Herpes zoster	18 weeks
3	36	Male	Herpes zoster	14 weeks
4	61	Female	Herpes zoster	12 weeks
5	62	Male	Herpes zoster	16 weeks
6	38	Female	Herpes zoster	3 weeks
7	43	Female	Herpes zoster	11 weeks
8	49	Male	Herpes zoster	8 weeks
9	26	Female	Pityriasis rosea	1 week
10	29	Female	Pityriasis rosea	2 weeks
11	19	Male	Pityriasis rosea	4 weeks
12	17	Female	Pityriasis rosea	2 weeks
13	37	Male	Pityriasis rosea	6 weeks
14	25	Male	Pityriasis rosea	3 weeks
15	22	Male	Pityriasis rosea	5 weeks

(Continues)

**TABLE 1** (Continued)

Number	Age	Gender	Diagnosis	The time duration for diagnosis after COVID-19
16	41	Male	Pityriasis rosea	3 weeks
17	48	Female	Urticaria	2 weeks
18	41	Female	Urticaria	4 weeks
19	42	Male	Urticaria	2 weeks
20	36	Female	Urticaria	3 weeks
21	27	Female	Urticaria	1 week
22	29	Male	Urticaria	2 weeks
23	52	Female	Urticaria	6 weeks
24	36	Female	Telogen effluvium	12 weeks
25	38	Female	Telogen effluvium	16 weeks
26	26	Female	Telogen effluvium	10 weeks
27	31	Female	Telogen effluvium	14 weeks
28	42	Male	Telogen effluvium	10 weeks
29	43	Female	Telogen effluvium	8 weeks
30	43	Male	Alopecia areata	6 weeks
31	39	Female	Alopecia areata	8 weeks
32	33	Male	Herpes labialis	2 weeks
33	33	Male	Herpes labialis	2 weeks

alopecia areata after COVID-19 can be triggered by cytokine-related viral effects. There are certain clinical shreds of evidence that SARS-CoV-2 may activates the herpes virus family.<sup>4</sup> Moreover, the common occurrence of herpes zoster in young people in our patients may strengthen the thesis that other viral infections are triggered by COVID-19. It can be considered that this viral interaction may be responsible for the development of HHV-6-related skin diseases including herpes labialis, herpes zoster, and pityriasis rosea as in our cases. In addition, a previous study reported that there are an increased number of stress-related hair diseases such as telogen effluvium and alopecia areata during the COVID-19 pandemic period, in concordance with our result.<sup>10</sup>

In conclusion, the COVID-19 still includes great mysteries for dermatology. The certain dermatological diseases that developed after COVID-19 were addressed in this report. Larger sample-based further studies are required to solve mysteries in COVID-19-related dermatological diseases.

#### CONFLICTS OF INTEREST

The authors declare no conflict of interest.

#### DATA AVAILABILITY STATEMENT

The datasets generated during and/or analyzed during the current study are not publicly available due to privacy and ethical restrictions but are available from the corresponding author on reasonable request.

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