




Occupational dermatoses have been the epidemic within the COVID-19 pandemic. Robust risk assessment and appropriate preventative strategies need to be implemented within the National Health Service. Staff occupational dermatology clinics appear effective in ensuring the wellbeing of frontline staff as we move forward in the 'new normal'.

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## COVID-19 in patients with hidradenitis suppurativa

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DEAR EDITOR, Information on hidradenitis suppurativa (HS) and COVID is scarce. HS is a chronic inflammatory cutaneous disease associated with comorbidities such as obesity, metabolic syndrome, smoking and cardiovascular disease, which are known to negatively affect COVID outcomes.<sup>1,2</sup>

This retrospective cohort study aimed to evaluate the outcomes of patients with HS who had confirmed COVID-19. We used the Research Patient Data Registry, a clinical data registry

from various Partners Healthcare System (PHS) affiliated hospitals in the Boston area. This area was highly affected between the months of March and May in 2020. As of 25 June 2020, of around 12 330 confirmed COVID cases in PHS, approximately 24.0%, 7.7% and 4.5% were admitted to hospital, a critical care unit and/or died, respectively.

Among more than 8000 patients who had a diagnosis of HS (International Classification of Disease 10th revision code L73.2) and more than 100 patients who were on biological therapy, we identified 58 patients with confirmed COVID-19 (positive reverse-transcriptase polymerase chain reaction) between 15 March and 25 May 2020. After reviewing their medical records on an electronic medical record system (Epic, Verona, WI, USA), we excluded 19 patients because HS could not be confirmed or was inactive for more than 3 years.

Demographic and clinical data are reviewed in Table 1. The majority of our patients with HS were female and of either Hispanic or African American race/ethnicity. They were relatively young and most were obese. Around one-third of these patients had diabetes, hypertension and/or were past or current smokers. Overall, 26%, 44%, 23% and 8% of patients had involvement of one, two, three and four or more anatomical sites, respectively. The majority of patients were not on any current systemic treatment for HS when COVID was diagnosed. These patients had been treated with topical antibiotics or steroids, intralesional steroids, incision and drainage and/or local surgery, in addition to prior courses of systemic antibiotics that had been discontinued before diagnosis of COVID-19.

In terms of hospitalization, we found that more male patients required hospital admission. The proportions of patients within each ethnic group who required hospitalization were not significantly different [17% (two of 12) of African American patients, 20% (two of 10) of Hispanic patients and 25% (four of 16) of white patients]. Mean age, proportion of patients on systemic antibiotics for HS and diagnosis of diabetes were all increased in patients requiring hospitalization, but these trends were not statistically significant. Two patients who were pregnant (4 weeks and 18 weeks) had mild disease.

In our sample, eight patients were admitted to the hospital (for an average of 22 days, range 1–66). A 60-year-old patient died. He had hypertension, diabetes and peripheral artery disease. He was not on systemic treatments for HS. Rates of hospital and intensive care unit admission and death were not increased in our study sample when compared with the entire PHS population with confirmed COVID-19 at that time. Only one patient was on a biologic (infliximab). He had mild COVID and did not require hospitalization. Patients received follow-up calls for an average of 34 days (range 2–69) after the diagnosis of COVID.

There has been some debate on whether patients with HS would have an increased risk of severe COVID because of an overlap between comorbidities associated with HS and prognostic factors of COVID-19.<sup>2</sup> An international registry has been developed in an attempt to collect more comprehensive data on HS severity, therapy and COVID-19 outcomes.<sup>3</sup> There has also been concern regarding potential racial disparities

**Table 1** Demographic and clinical characteristics of patients with confirmed COVID-19 who had hidradenitis suppurativa (HS)

	Total (n = 39)	Not hospitalized (n = 31)	Hospitalized (n = 8)	P-values <sup>a</sup>
<b>Demographic data</b>				
Age (years)	42.1 ± 12.6	40.5 ± 10.9	48.0 ± 17.3	0.14
Female sex	31 (80)	27 (87)	4 (50)	<b>0.04</b>
<b>Race/ethnicity</b>				
Black/African American	12 (31)	10 (32)	2 (25)	
Non-Hispanic				0.90
Asian, non-Hispanic	1 (3)	1 (3)	0	
White, non-Hispanic	16 (41)	12 (39)	4 (50)	
Hispanic	10 (26)	8 (26)	2 (25)	
<b>Clinical data</b>				
BMI (kg m <sup>-2</sup> )	34.4 ± 7.5	33.8 ± 7.2	36.9 ± 8.9	0.30
Current or past smoking	11 (28)	8 (26)	3 (38)	0.66
Diabetes	12 (31)	7 (23)	5 (63)	0.08
Hypertension	14 (36)	10 (32)	4 (50)	0.42
Asthma	11 (28)	8 (26)	3 (38)	0.66
Cardiovascular disease	5 (13)	3 (10)	2 (25)	0.27
Renal disease	1 (3)	0	1 (13)	0.21
Anxiety/depression	14 (36)	11 (36)	3 (38)	1.00
Pregnant	2 (5)	2 (7)	0	1.00
<b>Current HS therapy</b>				
Biologic	1 (3)	1 (3)	0	1.00
Systemic antibiotic	7 (18)	4 (13)	3 (38)	0.14
Topical therapy	7 (18)	6 (19)	1 (13)	1.00
<b>COVID outcomes</b>				
Supplemental oxygen			4 (10)	
ICU admission			3 (8)	
Orotracheal intubation			3 (8)	
Death			1 (3)	

BMI, body mass index; ICU, intensive care unit. <sup>a</sup>Comparison between patients on any systemic therapy and nonsystemic therapy, using two-sided Student's t-test or Fisher's exact test for continuous and categorical variables, respectively. Data are presented as mean ± SD or n (%).

affecting COVID outcomes.<sup>2,4</sup> In our sample, as expected, we had an increased proportion of patients of African American or Hispanic race/ethnicity; however, these patients did not have an increased risk of hospitalization. The only patient who died during our study was of older age, in addition to having other known risk factors for severe COVID.<sup>5</sup>

One Spanish study reported detailed data on eight patients with HS and suspected COVID-19, including two patients on biological therapies. None of these patients were hospitalized or had poor COVID outcomes.<sup>6</sup> An Italian survey of 96 patients with HS that was conducted by mail or phone call did not detect COVID-related deaths or hospitalization.<sup>7</sup> Although the risk factors for poor COVID outcomes, such as diabetes and hypertension, were more common among our patients, we feel that belonging to a younger age group protected patients with HS from a severe COVID outcome. Additional studies are required to confirm this finding.

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## Prevalence of mucocutaneous manifestations in 666 patients with COVID-19 in a field hospital in Spain: oral and palmoplantar findings

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DEAR EDITOR, Coronavirus disease 2019 (COVID-19) has been associated with several cutaneous manifestations.<sup>1-3</sup> A temporary field hospital was implemented during the pandemic peak in Madrid, Spain, to attend patients with COVID-19 who had mild-to-moderate pneumonia. A team of dermatologists working as medical volunteers performed a cross-sectional study between 10 and 25 April 2020 to evaluate cutaneous findings of such patients.

A total of 666 patients with COVID-19 fulfilled the inclusion criteria: either positive real-time reverse-transcription polymerase chain reaction (RT-PCR) testing for SARS-CoV-2, or bilateral pneumonia. Mean age was 55.7 years; with a slight female predominance (58%). Notably, 47.1% were from Latin America.

Overall, 304 (45.7%) of our patients presented with one or more mucocutaneous manifestations. Oral cavity findings were seen in 78 cases (25.7%), including transient lingual papillitis (11.5%), glossitis with lateral indentations (6.6%) (Figure 1a), aphthous stomatitis (6.9%), glossitis with patchy depapillation (3.9%) (Figure 1b) and mucositis (3.9%). Burning sensation was reported in 5.3% of patients, and taste disturbances (dysgeusia) were commonly associated.

Palmoplantar involvement was observed in 121 patients (39.8%) and included diffuse desquamation in 77 (25.3%), often favouring the weight-bearing areas, and reddish-to-brown acral macules on palms and soles in 46 (15.1%) (Figure 1c, d). Mild pruritus was occasionally reported. Fungal cultures of plantar desquamation performed in nine patients ruled out superficial mycoses. Histological study from the acral macules was performed in four patients, showing a mild-to-moderate lymphocytic infiltrate surrounding the blood vessels and eccrine sweat glands. Seven per cent of the patients reported burning sensation (erythrodysesthesia) at the beginning of the disease.

Urticaria (6.9%), rash (2.9%) and vesicular eruptions (1.6%) were observed in a minority of patients. While urticaria and rash were observed at any stage of the COVID-19



**Figure 1** Upper panel shows COVID-19 oral mucosa findings. (a) Glossitis with lateral indentations and anterior transient lingual papillitis due to swelling of the tongue and friction with the teeth. (b) Glossitis with patchy depapillation. Lower panel shows palmoplantar findings in patients with COVID-19. (c) Reddish-to-brown acral macules with a slight desquamation on the feet of a patient. Pathology excluded racial pigmentation, showing mild-to-moderate lymphocytic infiltrate surrounding the blood vessels and eccrine sweat glands. (d) Acral macules on the palm of a patient with COVID-19 with the same histopathology.

infection, vesicular eruptions typically appeared within the first few days of symptoms. Both urticaria and vesicular eruptions appeared in younger patients than did the other mucocutaneous manifestations, with statistical significance ( $P = 0.024$ ).

Prior studies<sup>2,3</sup> have found a significantly lower prevalence of COVID-19-associated dermatoses (20% and 7.8%, respectively). The higher prevalence in our study may be due to additional findings not previously described. Although the oral cavity is frequently involved in viral infections, glossitis or papillitis have not been described in patients with COVID-19.<sup>4</sup> However, these differences could also be due to the conditions during hospitalization including ventilation masks, for example. We hypothesize that the contagion risk while examining the oral cavity might have precluded a thorough physical examination in these patients.

Palmoplantar involvement was also a frequent finding. Some patients recalled a burning sensation and redness or swelling of the hands or feet shortly after COVID-19 symptoms began. Erythrodysesthesia is a common complaint secondary to cancer chemotherapy that is thought to be related to direct drug toxicity and inflammation of the eccrine glands.<sup>5</sup> Interestingly, several outbreaks of poxvirus-related erythromelalgia have been reported in China. The first outbreak occurred in Wuhan in 1987, and all patients had