

CORRESPONDENCE

Low incidence of COVID-19 in hidradenitis suppurativa: How to interpret it?

Dear Editor,

We read with great interest the publication of Giamarellos-Bourboulis et al.¹ that discussed the anti-COVID-19 measurements for hidradenitis suppurativa (HS). The incidence of COVID-19 in HS patients is low as reported in several retrospective studies. In a cohort of more than 8000 HS patients in the United States,² there were 39 cases of COVID-19, eight of these were hospitalized due to respiratory complications and one died in intensive care. Interestingly, the majority of these COVID-19 patients were not treated with systemic therapy for HS and no specific risk factors were identified. Meanwhile, only eight cases of mild COVID-19 occurred in a cohort of 75 Spanish patients³ and no cases of COVID-19 occurred among a cohort of 96 Italian patients.⁴ This prompted us to investigate why the incidence of COVID-19 is so low in the HS population and whether there are any risk factors that could increase susceptibility to COVID-19. We conducted the first monocentric Belgian prospective study to date between the period of March 2020 and February 2021 aiming to characterize patients who will develop COVID-19. Patients were contacted by phone at 3 time points in order to cover the pandemic period (March 2020, October 2020 and February 2021). We collected demographic data and detailed medical history. In order to assess the risk factors more precisely, we added the ISARIC-WHO Forms to collect detailed data on individuals presenting with COVID-19 (<https://isaric.org/research/covid-19-clinical-research-resources/covid-19-crf/>). One hundred thirty five HS patients were included in the study and the characteristics are summarized in Table 1. The mean age (mean \pm standard deviation) was 39.3 ± 11.8 years with a female predominance (64.4%), and the majority (63.7%) were of North European ethnicity. 69.5% of the patients were smokers while 70.6% were alcohol consumers. The mean body mass index (BMI) was 29 ± 6.9 kg/m². The main comorbidities that we have identified were dyslipidaemia (16.3%), hypertension (10.4%), diabetes (4.4%), metabolic syndrome (4.4%) and ischaemic heart disease (2.2%). The proportion of Hurley stage 1, 2 and 3 was 47.1%, 38.6% and 14.3%, respectively. We assessed the disease activity with the dynamic International Hidradenitis Suppurativa Severity Score System (IHS4) and the Dermatology Life Quality Index (DLQI), and we observed moderate scores of 6 ± 13.8 and 10.3 ± 9.1 , respectively. All the patients were receiving a systemic therapy for HS with 30.4% treated by biotherapy, mainly adalimumab (95.1%). Of the 135 HS patients, 8/135 developed mild COVID-19 flu-like symptoms (Fever/cough/fatigue) and tested positive for SARS-CoV-2 by PCR.

TABLE 1 Characteristics of hidradenitis suppurativa (HS) population

	COVID+ (N = 8)	COVID- (N = 127)
Age (mean \pm standard deviation, years)	30.3 \pm 7.4	39.2 \pm 11
Gender (%)		
Female	87.5	62.2
Male	12.5	34.6
Ethnicity (%)		
North European	50	65.2
Mediterranean	25	15
North African	12.5	6.3
Sub-Saharan African	12.5	5.5
Asian	0	0.8
Other	0	5.5
Occupational status (%)		
Full time employment/student	87.5	61.3
Unemployed	12.5	10.9
On disability benefit	0	13.4
On sick leave	0	10.1
Retired	0	4.2
Educational level (%)		
High school	62.5	30.8
Vocational school	12.5	35.8
College or university (<4 years)	25	18.3
Primary school	0	4.2
College or university (more than 4 years)	0	10.8
Respect of COVID measurements (%) (hand washing/avoid touching mucosa/mask covering/social distancing/lock-down)		
Yes	87.5	92.6
No	12.5	7.4
Comorbidities (%)		
Dyslipidemia	0	17.3
Hypertension	0	11
Diabetes	0	4.7
Cardiac dysrhythmia or conduction disorder	0	5.5
Ischemic heart disease	0	2.4

(Continues)

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TABLE 1 (Continued)

	COVID+ (N = 8)	COVID- (N = 127)
Metabolic disease	12.5	3.9
Smoking (%)		
Never	62.5	71.7
Current smoker	12.5	28.3
Quite smoker	25	0
Alcohol (%)		
Never	50	72.9
Rarely	50	27.1
BMI (mean ± standard deviation, kg/m ²)	30.6 ± 6.7	28.9 ± 6.9
Biological therapy (%)		
No	62.5	68.6
Yes	37.5	31.4
If yes, which one		
Adalimumab	66.7	95
Infliximab	33.3	2.5
Ustekinumab	0	2.5
Hurley (%)		
1	0	47.1
2	62.5	39.7
3	37.5	13.2
DLQI (mean ± standard deviation)	9 ± 10.1	10.17 ± 9.1
IHS4 (mean ± standard deviation)	5.7 ± 15.5	7 ± 14.8

Abbreviations: BMI, Body Mass Index; COVID+, patients who experienced COVID-19; COVID-, patients who did not experienced COVID-19; DLQI, Dermatology Life Quality Index; IHS4, International Hidradenitis Suppurativa Score.

No patients developed severe COVID-19 requiring hospitalization. Metabolic syndrome was the only comorbidity reported (1/8) and, intriguingly, only one of the patients was a current smoker. Patients were Hurley 2 (5/8) or Hurley 3 (3/8). The inflammatory activity of the disease was moderate with an IHS4 of 5.75 ± 15.5 . Patients were being treated by systemic antibiotherapy (5/8), adalimumab (2/8) and infliximab (1/8). Despite the diagnosis of COVID-19, HS therapy was maintained with no adverse effect on COVID-19 symptoms. The patients observed the general COVID-19 preventative measures except 3/8 patients did not always wear masks. Our data confirmed the low incidence of COVID-19 among patients with HS. The inflammatory activity of the disease does not seem to influence the susceptibility to SARS-CoV-2 infection. TNF- α blockers do not seem to increase the risk of COVID-19 as also reported by Marzano et al.⁵ The cessation of TNF- α blockers may cause a flare of the disease with potential formation of antidrug antibodies and a reduced efficacy. In conclusion, the unknown intrinsic inflammatory properties of HS do not represent a risk factor for COVID-19 and the therapy should be maintained during the pandemic periods (Data S1).

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CONFLICT OF INTEREST


None.

AUTHOR CONTRIBUTIONS

Mathilde Dewigne: Literature review, and collection and data analysis. Carmen Orte Cano and Véronique del Marmol: Design of the study. Mathieu Daoud: Collection of the data and design of the study. Farida Benhadou: Design of the study and data analysis, literature review and writing of the manuscript.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

Data S1. The table recapitulates the main characteristics of the patients who developed COVID-19 disease in comparison to the patients who did not develop COVID-19 disease.