

## Correspondence

### COVID-19 and biologic therapies in dermatology: seroprevalence survey and severity analysis in a tertiary hospital in Spain

Dear Editor,

Herein, we report our real-life experience with dermatologic patients treated with biologic therapies during the months of peak incidence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections in a tertiary hospital in Valladolid, a medium-sized city in central Spain. We conducted a SARS-CoV-2 seroprevalence survey, and we analyzed the severity of SARS-CoV-2 infections among patients treated with biologic therapies.

The incidence of coronavirus disease 2019 (COVID-19) infections grew rapidly in Spain, quickly becoming one of the most affected countries in Europe, with 1,259,366 cases reported to date November 4, 2020.<sup>1</sup> As a consequence, concern began to grow among dermatologists regarding the safety of biologic therapies due to their immunosuppressive effect. It is still unknown whether patients treated with these therapies are more susceptible of contracting SARS-CoV-2 or of suffering a more severe course of the disease.<sup>2</sup> The studies reported to date seem to indicate that biologic therapies do not worsen the prognosis in comparison to the general population. When analyzing the added risk that these patients might have, it must be taken into account that a big percentage of SARS-CoV-2 infections have an asymptomatic course.<sup>3</sup> Therefore, it is essential to perform systematic studies that actively search for asymptomatic cases.

For this reason, we conducted a systematic seroprevalence study taking into account all the patients undergoing biologic treatment in our department. All the patients had been treated with biologic therapies for more than 1 year, except for two, which had been undergoing treatment for over 6 months. This included patients with psoriasis, hidradenitis, urticaria, and atopic dermatitis undergoing treatment with infliximab, adalimumab, etanercept, ustekinumab, secukinumab, ixekizumab, omalizumab, and dupilumab. The data collection process was as follows. First, we listed all the patients mentioned above (138 patients). We then excluded patients that did not want to participate in the study and those who had stopped treatment during the pandemic, finally obtaining 99 patients ( $n = 99$ ). Second, we conducted telephone interviews with all the patients. We asked them about comorbidities and about whether they had any COVID-19-related symptoms or a confirmed diagnosis of the infection by reverse-transcription polymerase chain reaction (RT-PCR). Finally, we performed an enzyme-linked immunosorbent assay (ELISA) serological test for SARS-CoV-2

on every patient. The statistical analysis of these data was performed using Stata (version 14).

Our sample traits included the following (Table 1). The mean age was 54 years ( $\pm 13.6$ ), and 62% were men. The most common dermatologic disease was psoriasis (83%). Almost half of the patients were undergoing treatment with ustekinumab (42%). The most prevalent comorbidities were tobacco use (38%), dyslipidemia (36%), hypertension (27%), and obesity (27%); diabetes (17%) and respiratory diseases (16%) were less common.

Out of the 99 patients, four had high IgG titers (a positive result) for SARS-CoV-2, which corresponded to 4.1% (95% CI 1.4–9.3) of the sample (Table 2). One of the patients was admitted to the hospital, but the reason for hospital admission was progression of Alzheimer's disease. He tested positive for SARS-CoV-2 by RT-PCR, but he did not show symptoms related to COVID-19 nor compatible blood tests or radiology exam. Therefore, COVID-19 was considered an incidental finding. Another patient had COVID-19-related symptoms but did not require hospital admission. The remaining two patients were asymptomatic.

Seroprevalence in our sample was 4.04%, which was very similar to the general population of Valladolid (4.4%).<sup>3</sup> Performing a serological test on every patient allows for a realistic comparison between patients treated with biologic therapies and the

**Table 1** Clinical and demographic characteristics of patients undergoing biologic therapies

Characteristics ( $n = 99$ )	
Sex	
Male	61
Female	38
Age	54 ( $\pm 13.6$ )
Drugs	
Infliximab	2
Adalimumab	24
Etanercept	1
Ustekinumab	41
Secukinumab	10
Ixekizumab	11
Omalizumab	9
Dupilumab	1
Dermatologic disease	
Psoriasis	82
Hidradenitis	7
Urticaria	9
Atopic dermatitis	1

**Table 2** Summary of COVID-19 positive cases

Age	Disease	Drug/Date initiated	Comorbidities	COVID-19			
				Symptoms	IgG	PCR	Severity
70	Psoriasis	Adalimumab/ 9/23/2011	HTN, Alzheimer's disease	Asymptomatic	+	+	Hospital admission <sup>a</sup>
74	Psoriasis	Ustekinumab/ 10/22/2019	HTN	Fever, cough	+	+	Ambulatory care
44	Psoriasis	Secukinumab/ 7/31/2017	None	Asymptomatic	+	Not tested	Asymptomatic
58	Psoriasis	Ustekinumab/ 1/13/2016	Obesity, dyslipidemia, COPD	Asymptomatic	+	–	Asymptomatic

COVID-19, coronavirus disease 2019; HTN, hypertension; COPD, chronic obstructive pulmonary disease; +, positive; –, negative.


<sup>a</sup>The reason for hospital admission was not COVID-19 but progression of Alzheimer's disease.


general population. The result indicates that there does not seem to be a higher susceptibility to becoming infected among these patients. In our series, positive cases did not have more complications or higher morbimortality than other COVID-19 cases. This finding goes in line with previous literature.<sup>4,5</sup>

In conclusion, our results do not show an increased morbimortality for COVID-19 in patients treated with biologic therapies. Further research with larger samples is necessary to completely elucidate if biologic therapies increase the risk of becoming infected by SARS-CoV-2 or of suffering a more severe course of the disease, but the evidence compiled to date has not found relevant differences.

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