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## REFERENCES

1. Mao R, Liang J, Shen J, et al; Chinese Society of IBD, Chinese Elite IBD Union; Chinese IBD Quality Care Evaluation Center Committee. Implications of COVID-19 for patients with pre-existing digestive diseases. *Lancet Gastroenterol Hepatol*. 2020;5(5):426-428.
2. Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19). People Who Are at Higher Risk for Severe Illness. Available at: <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/high-risk-complications.html>. Accessed March 16, 2020.
3. American College of Rheumatology. A Message from the ACR about Coronavirus Disease 2019 (COVID-19). Available at: <https://www.rheumatology.org/announcements>. Accessed March 16, 2020.
4. American Academy of Dermatology. Coronavirus resource center. Available at: <https://www.aad.org/member/practice/managing/coronavirus>. Accessed March 30, 2020.

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### COVID-19 and biologics for psoriasis: A high-epidemic area experience—Bergamo, Lombardy, Italy



*To the Editor:* A severe outbreak of coronavirus disease 2019 (COVID-19) emerged in China in December 2019 and has rapidly spread worldwide. A large number of people in Italy have been infected with COVID-19, and it has become a serious public health emergency.<sup>1</sup> The first case in our hospital was identified on February 21, 2020.<sup>2</sup>

Information is still limited regarding the new coronavirus and its impact on patients receiving long-term immunosuppressive therapy. In a precoronavirus era, respiratory infection rates for biologic therapy patients were comparable to placebo.<sup>3</sup>

As suggested by the Italian Society of Dermatologists (SIdEmaST),<sup>4</sup> we advise patients treated with biologic drugs to carefully comply with hygiene rules, use protective devices, maintain social distancing, and to not spontaneously suspend ongoing therapy but to inform the dermatologist in case of symptoms. We report our experience with patients treated with biologic therapy for psoriasis in Bergamo, an area of high epidemic rates for COVID-19.

Patients being treated at the psoriasis outpatient service of the Bergamo Hospital live in Bergamo (86.2% [n = 137]), Milan (6.3% [n = 10]), Brescia (4.4% [n = 7]), Lecco (1.9% [n = 3]), and Lodi (1.3% [n = 2]), all Lombardy region areas with a high incidence rate of COVID-19 infections.<sup>5</sup>

All patients were contacted by telephone or underwent a dermatologic visit 40 to 45 days after the beginning of the COVID-19 epidemic (population characteristics are reported in Table I). Twenty-five patients (15.7%) reported contacting individuals with

**Table I.** Characteristics of patients with psoriasis on biologic therapy

Variable	All patients
Age, mean $\pm$ SD (range), y	51.5 $\pm$ 14.0 (17-84)
Sex	
Male, % (n/N)	71.7 (114/159)
Female, % (n/N)	28.3 (45/159)
Biologic therapies	
Anti-TNF- $\alpha$ (adalimumab, etanercept, golimumab), % (n/N)	33.3 (53/159)
Anti-IL-17 (secukinumab, ixekizumab, brodalumab), % (n/N)	47.8 (76/159)
Anti-IL-12/-23 (ustekinumab, guselkumab), % (n/N)	18.9 (30/159)
Contact with suspected/confirmed COVID-19 patient, % (n/N)	15.7 (25/159)
Patients with positive COVID-19 nasal swab, % (n/N)*	0.0 (0/159)
Suspected COVID-19 symptoms, % (n/N) <sup>†</sup>	18.2 (29/159)
Mild	15.7 (25/159)
Moderate	1.9 (3/159)
Severe	0.6 (1/159)
Patients who had drug suspended, % (n/N)	5.6 (9/159)

IL, Interleukin; TNF, tumor necrosis factor.

\*In March 2020 almost only hospitalized patients were tested with COVID-19 nasal swab (n = 0/1 positive nasal swab/hospitalized patients).

<sup>†</sup>Suspected COVID-19 symptoms defined as: Mild: flu-like symptoms, cough, low-grade fever, anosmia/ageusia, resolved in  $\leq 7$  days without hospitalization. Moderate: flu-like symptoms, cough, low-grade fever, anosmia/ageusia, resolved in 8-16 days without hospitalization. Severe: serious symptoms that required hospitalization; 1 patient reported serious symptoms that required hospitalization (pneumococcal pneumonia with negative COVID-19 nasal swab).

established (positive nasal swab test) or suspected COVID-19. Symptoms suggestive of COVID-19 developed in 18 of these 25 patients (72.0%; 15 mild, 3 moderate) (Table I).

Six patients contacted us to report respiratory symptoms; as a precaution, given the limited information available on the risk due to COVID-19, we temporarily discontinued therapy for up to 30 days after the symptoms resolved. One patient reported serious symptoms that required hospitalization (pneumococcal pneumonia with negative COVID-19 nasal swab). Three patients without symptoms stopped therapy on their own and reported worsening of psoriasis; all resumed treatment after receiving reassurances. Twenty-three patients reported having had symptoms consistent with COVID-19 (22 mild, 1 moderate) but did not stop therapy. There were no significant demographic or

**Table II.** Characteristics of patients with suspected COVID-19 symptoms

Variable	With suspected COVID-19 symptoms	Without suspected COVID-19 symptoms	P*
Age, mean $\pm$ SD (range), y	46.6 $\pm$ 12.7 (23-77)	52.8 $\pm$ 14.1 (17-84)	.04
Sex			
Male, % (n/N)	62.1 (18/29)	73.6 (96/130)	.20
Female, % (n/N)	37.9 (11/29)	26.2 (34/130)	.20
Cardiometabolic comorbidities, % (n/N) <sup>†</sup>	13.8 (4/29)	20.0 (26/130)	.44
Contact with suspected/confirmed COVID-19 patient, % (n/N)	62.1 (18/29)	5.4 (7/130)	<.0001
Patients who had drug suspended, % (n/N)	20.7 (6/29)	2.3 (3/130)	<.0001
	Therapy suspended	Therapy continued	
Age, mean $\pm$ SD (range), y	50.7 $\pm$ 14.6 (38-77)	45.6 $\pm$ 12.3 (23-68)	.39
Sex			
Male, % (n/N)	50.0 (3/6)	65.2 (15/23)	.49
Female, % (n/N)	50.0 (3/6)	34.8 (8/23)	.49
Suspected COVID-19 symptoms <sup>‡</sup>			
Mild, % (n/N)	50.0 (3/6)	95.7 (22/23)	
Moderate, % (n/N)	33.3 (2/6)	4.3 (1/23)	.01
Severe, % (n/N)	16.7 (1/6)	0.0 (0/23)	

\*Statistical analysis was performed by t test and  $\chi^2$  test. Significance value was set at  $P < .05$ .

<sup>†</sup>Myocardial infarction, stroke, diabetes, obesity, dyslipidemia, or nonalcoholic fatty liver disease.

<sup>‡</sup>Suspected COVID-19 symptoms defined as: Mild: flu-like symptoms, cough, low-grade fever, anosmia/ageusia, resolved in  $\leq 7$  days without hospitalization. Moderate: flu-like symptoms, cough, low-grade fever, anosmia/ageusia, resolved in 8-16 days without hospitalization. Severe: serious symptoms that required hospitalization; 1 patient reported serious symptoms that required hospitalization (pneumococcal pneumonia with negative COVID-19 nasal swab).

comorbidity differences between patients who had COVID-19—like symptoms and those who did not (Table II).

We observed a significant risk of infection in our area, especially for those who had close contacts with individuals potentially infected with COVID-19. Therefore, we think it is essential to advise and empower patients on activities that can help to limit the risk of infection. Fortunately, serious cases of COVID-19 infection have not been reported, and even patients who continued therapy showed almost exclusively mild symptoms. As a precaution, we decided on a case-by-case basis whether to discontinue therapy; however, we did not observe a more aggressive course of suspected COVID-19 symptoms in patients who continued treatment. Moreover, we observed the importance of creating an easy communication channel to provide clinical and human support for patients. Further observation on a larger number of patients is needed to investigate the risk of COVID-19 infection.

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## REFERENCES

- Grasselli G, Pesenti A, Cecconi M. Critical care utilization for the COVID-19 outbreak in Lombardy, Italy: early experience and forecast during an emergency response [e-pub ahead of print]. *JAMA*. 2020;323(16):1545-1546.
- Buoro S, Di Marco F, Rizzi M, et al. Papa Giovanni XXIII Bergamo Hospital at the time of the COVID-19 outbreak: letter from the warfront [e-pub ahead of print]. *Int J Lab Hematol*. <https://doi.org/10.1111/ijlh.13207>. Accessed April 8, 2020.

3. Lebwohl M, Rivera-Oyola R, Murrell DF. Should biologics for psoriasis be interrupted in the era of COVID-19? [e-pub ahead of print]. *J Am Acad Dermatol*. 2020;82(5):1217-1218.
4. Società Italiana di Dermatologia medica, chirurgica, estetica e delle Malattie Sessualmente Trasmesse (SIDeMaST) Infezione da Coronavirus. Vademecum per i Pazienti affetti da Psoriasi Cutanea e/o Artropatia Psoriasica. Available at: [https://www.sidemast.org/blog/infezione-da-coronavirus-vademecum-per-](https://www.sidemast.org/blog/infezione-da-coronavirus-vademecum-per-i-pazienti-affetti-da-psoriasi-cutanea-e-o-artropatia-psoriasica/)
- [i-pazienti-affetti-da-psoriasi-cutanea-e-o-artropatia-psoriasica/](https://www.sidemast.org/blog/infezione-da-coronavirus-vademecum-per-i-pazienti-affetti-da-psoriasi-cutanea-e-o-artropatia-psoriasica/). Accessed April 8, 2020.
5. EpiCentro - Istituto Superiore di Sanità. Coronavirus. Available at: <https://www.epicentro.iss.it/en/coronavirus/>. Accessed April 8, 2020.

<https://doi.org/10.1016/j.jaad.2020.04.165>