

Of the 8398 surveys sent out, 263 were completed. Respondents were mostly female (84%) and white (88%), older (mean age = 53.6), 57.8% with PsO/PsA, 4.9% with PsA alone, 37.3% with PsO alone, and 54.4% had previously used biologics. Few reported their HCP discussed the impact of having PsO/PsA (18.6%) or PsO/PsA treatments (20.2%) on COVID-19 infection risk. Increased perception of COVID-19 as a threat to personal health was associated with disease type but not treatment type. Individuals with PsA perceived COVID-19 as a higher threat to their personal health than patients with PsO alone (baseline $F(1, 259) = 7.12$, $P < 0.05$, and follow-up $F(1, 252) = 7.83$, $P \leq 0.05$; one-way ANOVA results). Past biologic use did not affect perceived threat of COVID-19 on personal health (baseline, $P = 0.104$; follow-up $P = 0.160$).

Biologic users were, however, more concerned treatments may increase risk of COVID-19 infection at baseline ($M = 3.78$, $SD = 1.23$ vs. $M = 2.28$, $SD = 1.41$; $t(260) = -9.11$, $P \leq 0.001$) and follow-up ($M = 3.45$, $SD = 1.40$ vs. $M = 2.12$, $SD = 1.40$; $t(252) = -7.53$, $P \leq 0.001$) and contribute to worse COVID-19 outcomes at baseline ($M = 4.03$, $SD = 1.20$ vs. $M = 2.39$, $SD = 1.44$; $t(259) = -9.84$, $P \leq 0.001$) and follow-up ($M = 3.60$, $SD = 1.41$ vs. $M = 2.21$, $SD = 1.43$; $t(252) = -7.77$, $P \leq 0.001$; two-tailed independent sample t -tests). Among all respondents, concerns about treatments decreased at follow-up:

- Increase risk of COVID-19 due to PsO/PsA or its treatments? ($M = 3.10$, $SD = 1.51$ vs. $M = 2.85$, $SD = 1.55$, $t(263) = 3.04$, $P \leq 0.001$).
- Worsen outcomes if infected due to PsO/PsA or its treatments? ($M = 3.10$, $SD = 1.51$ to $M = 2.85$, $SD = 1.55$, $t(263) = 3.04$, $P \leq 0.001$; paired samples t -test).

In summary, in two surveys administered early in the COVID-19 pandemic, US patients with psoriatic disease reported that few COVID-19-related discussions had occurred between them and their HCP. Respondents with PsA and biologic users reported a greater concern that treatments increase risk of SARS-CoV-2 infection and may cause worse COVID-19 outcomes. These survey results resemble comparable studies,²⁻⁴ suggesting patients are concerned how treatments and disease status may influence risk of COVID-19 infection and outcomes. Guidance on managing psoriatic disease during the COVID-19 pandemic published by the NPF may improve patient-provider communication about these important topics.^{5,6}




Low-survey completion rate and a sample consisting of individuals engaged with a patient advocacy organization may contribute to selection bias. The COVID-19 pandemic could have increased barriers to e-mail communication, contributing to the lack of communication between patients and HCPs. Treatment status was also not objectively defined. Lastly, survey items had not undergone psychometric testing, and the survey sample may not be representative of the estimated psoriatic patient population.

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Conflicts of interest

George Gondo, Dr. Stacie Bell, Jane Slayden and Georgia Ullmann are employees of the National Psoriasis Foundation. Dr. Andy Blauvelt has served as a consultant and investigator for AbbVie, Ammirall, Arena, Athenex, Boehringer Ingelheim, Bristol-Myers Squibb, Dermavant, Eli Lilly and Company, Evommune, Forte, Galderma, Incyte, Janssen, Leo, Novartis, Pfizer, Rapt, Regeneron, Sanofi Genzyme, Sun Pharma, and UCB Pharma.

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References

- 1 Geldsetzer P. Use of rapid online surveys to assess people's perceptions during infectious disease outbreaks: a cross-sectional survey on COVID-19. *J Med Internet Res* 2020; **22**: e18790.
- 2 Michaud K, Wipfler K, Shaw Y *et al*. Experiences of patients with rheumatic diseases in the united states during early days of the COVID-19 pandemic. *ACR Open Rheumatol* 2020; **2**: 335–343.
- 3 Wolf MS, Serper M, Opsasnick L *et al*. Awareness, attitudes, and actions related to COVID-19 among adults with chronic conditions at the onset of the U.S. outbreak: a cross-sectional survey. *Ann Intern Med*. 2020; **173**: 100–109.
- 4 Antony A, Connelly K, De Silva T *et al*. Perspectives of patients with rheumatic diseases in the early phase of COVID-19. *Arthritis Care Res* 2020; **72**: 1189–1195.
- 5 Gelfand JM, Armstrong AW, Bell S *et al*. National psoriasis foundation COVID-19 task force guidance for management of psoriatic disease during the pandemic: version 1. *J Am Acad Dermatol* 2020; **83**: 1704–1716.
- 6 Gelfand JM, Armstrong AW, Bell S *et al*. National Psoriasis Foundation COVID-19 task force guidance for management of psoriatic disease during the pandemic: version 2 - advances in psoriatic disease management, COVID-19 vaccines, and COVID-19 treatments. *J Am Acad Dermatol* 2021. <http://doi.org/10.1016/j.jaad.2020.12.058>.

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Is SARS-CoV-2 screening test indicated for psoriasis patients candidate to biologic therapy?

Dear Editor,

Patients and physicians may be concerned about starting a biologic treatment during the COVID-19 pandemic. Whether biologics enhance the risk of being infected with SARS-CoV-2 or whether the disease course is worsened remains to be ascertained. So far, no negative signal emerged for an increased risk

of severe COVID-19 associated with biologics when compared with the general population.^{1,2}

However, a universal screening for SARS-CoV-2 has been advocated for IBD patients who initiate a biologic treatment.^{3,4} In this paper, we evaluate the *pros* and *cons* of a universal SARS-CoV-2 testing for psoriatic patients candidate to a biologic therapy. We consider the test options and then discuss their application in the above-mentioned scenario.

Symptomatic patients

In a patient with respiratory symptoms, fever or anosmia/ageusia a SARS-CoV-2 testing with RT-PCR test should be performed. In case of positivity, our personal suggestion is to keep a cautionary behaviour and to postpone the initiation of biological therapy after the acute phase has disappeared and testing for SARS-CoV-2 has been repeatedly negative.

Asymptomatic patients

The prevalence of positive molecular testing in asymptomatic patients might be relevant. In areas with a high prevalence of SARS-CoV-2 infection, it seems reasonable to test patients prior to a biologic therapy, even when asymptomatic.

However, current molecular and serological diagnostic tests for COVID-19 have some limitations.

Nucleic acid amplification tests (NAAT) have only moderate sensitivity (likely between 63% and 78%), resulting in false-negative results.⁵ Overall, this low sensitivity hampers the use of NAAT for a universal testing strategy in order to risk stratify patients. Moreover, it is important to consider the pretest probability from patient's contact history and his home town epidemiological data.

Serologic tests are commonly used to support clinical diagnosis or screening a patient for a certain treatment, by determining recent or prior infection. COVID-19 serological tests are relatively inexpensive and accessible and can be useful in various ways.

However, there are several limitations that hamper the application of serologic test in screening of asymptomatic patients before a biologic therapy.

First, serologic tests are not useful for diagnosis of acute cases in the first week of illness,⁶ and as of now, there are lacking data on the magnitude and duration of antibody responses after asymptomatic or mild infections.⁶

Secondly, some currently available serologic tests have a sub-optimal specificity. A laboratory test with a specificity <100% may be of scarce utility in low-prevalence settings.

If we hypothesize a COVID-19 prevalence of 5%, the positive predictive value of a test with a 98% specificity dramatically declines to 71%, with almost one third of positive results being false-positive.

Lastly, to date, the assumption that antibodies to SARS-CoV-2 confer protection from reinfection needs to be confirmed.

A recent consensus paper from the European Crohn's and Colitis Organization recommended that all patients with a IBD flare should be tested to exclude SARS-CoV-2 infection before starting a treatment.⁴ However, the International Organization for Inflammatory Bowel Diseases (IOIBD)⁷ and the British Society of Gastroenterology⁸ suggest to test for SARS-CoV-2 patients with active IBD when needing inpatient endoscopic, radiologic or surgical procedures, but no specific recommendation for outpatients' management are proposed.

In fact, even though there is an agreement on recommending a SARS-CoV-2 testing when admitting a patient, the clinical meaningfulness of testing an outpatient candidate to a biologic therapy may be less obvious. Accordingly, NICE,⁹ National Psoriasis Foundation¹⁰ and EULAR¹¹ recommendations do not mention the need of testing for asymptomatic patients before starting a biologic.

The need to screen patients for SARS-CoV-2 before starting a biologic treatment advocated by some gastroenterology experts and scientific societies^{3,4} is mainly due to the fact that COVID-19 may present with only fever and gastrointestinal symptoms, mimicking an IBD flare.⁴

In conclusion, the optimal management of psoriatic patients in the era of this pandemic is challenging. There are several unresolved issues surrounding the use of the COVID-19 diagnostic tests. NAAT remains the most useful test for diagnosis of acute COVID-19 infections, but it has some drawbacks.

We believe that, at the moment and with the currently available diagnostic test, there is not enough evidence to support a universal molecular testing for SARS-CoV-2 in asymptomatic patients candidate to biologic therapy. We need to proceed with caution and provide intensive patient education, and decisions on a case by case basis can only be proposed.

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References

- Gisondi P, Piaserico S, Naldi L *et al*. Incidence rates of hospitalization and death from COVID-19 in patients with psoriasis receiving biological treatment: a Northern Italy experience. *J Allergy Clin Immunol* 2021; **147**: 558–560.e1.
- Akiyama S, Hamdeh S, Micic D, Sakuraba A. Prevalence and clinical outcomes of COVID-19 in patients with autoimmune diseases: a systematic review and meta-analysis. *Ann Rheum Dis* 2021; **80**: 384–391.
- Zingone F, Buda A, Savarino EV. Screening for active COVID-19 infection and immunization status prior to biologic therapy in IBD patients at the time of the pandemic outbreak. *Dig Liver Dis* 2020; **52**: 604–605.
- Magro F, Rahier J-F, Aheu C *et al*. Inflammatory bowel disease management during the COVID-19 outbreak: the 10 do's and don'ts from the ECCO-COVID Taskforce. *J Crohns Colitis* 2020; **14**: S798–S806.
- Wölfel R, Corman VM, Guggemos W *et al*. Virological assessment of hospitalized patients with COVID-2019. *Nature* 2020; **581**: 465–469.
- Röltgen K, Powell AE, Wirz OF *et al*. Defining the features and duration of antibody responses to SARS-CoV-2 infection associated with disease severity and outcome. *Sci Immunol* 2020; **5**: eabe0240.
- Allez M, Fleshner P, Garry R, Lakatos PL, Rubin DT, on behalf of the IOIBD. Care of the patient with IBD requiring hospitalization during the COVID-19 pandemic. *J Crohns Colitis* 2020; **14**: S774–S779.
- Din S, Kent A, Pollok RC *et al*. Adaptations to the British Society of Gastroenterology guidelines on the management of acute severe UC in the context of the COVID-19 pandemic: a RAND appropriateness panel. *Gut* 2020; **69**: 1769–1777.
- URL <https://www.nice.org.uk/guidance/ng169/resources/covid19-rapid-guideline-dermatological-conditions-treated-with-drugs-affecting-the-immune-response-pdf-66141909147589> (last accessed: 1 December 2020).
- Gelfand JM, Armstrong AW, Bell S *et al*. National Psoriasis Foundation COVID-19 task force guidance for management of psoriatic disease during the pandemic: version 1. *J Am Acad Dermatol* 2020; **83**: 1704–1716.
- Landewé RBM, Machado PM, Kroon F *et al*. EULAR provisional recommendations for the management of rheumatic and musculoskeletal diseases in the context of SARS-CoV-2. *Ann Rheum Dis* 2020; **79**: 851–858.

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Chilblains in a child with confirmed SARS-CoV-2 infection: a red flag for late-onset skin manifestation in previously infected individuals

Dear Editor,

During the COVID-19 pandemic, an outbreak of chilblain lesions has been described worldwide. The relationship with SARS-CoV-2 infection is still debated.^{1–3} Emerging literature regarding this possible correlation focuses on two hypotheses: an endothelial infection or the result of an IFN type I-mediated immune response.^{4,5}

We present the case of a 6-year-old girl with confirmed mild COVID-19 and late-onset chilblains.

Asymptomatic SARS-CoV-2 infection occurred 2 months before our first examination. Nasopharyngeal swab RT-PCR-based SARS-CoV-2 detection was performed because both parents resulted COVID-19 positive. Three weeks after molecular testing, the patient was hospitalized for 5 days due to the onset of diffuse papulopustular rash on the trunk and upper thighs, chilblains associated with severe pain, low-grade fever and marked asthenia. At that time, nasopharyngeal swab for SARS-CoV-2 was negative, routine blood tests were within normal range including C-reactive protein (CRP) and coagulation profile, while IL-6 serum levels were slightly increased. The skin lesions disappeared within 2 weeks.

Three weeks later, on August 2020, the girl was referred to our dermatology unit because of a relapse of the painful lesions on the feet, associated with gait impairment, low-grade fever (37.2°C) and marked asthenia. Clinical examination revealed painful red-purple nodular lesions on the toes and lateral sides of the feet, associated with palmar and fingertips erythema with slight desquamation (Fig. 1). The clinical picture was suggestive of chilblain. Furthermore, the mother reported that her daughter often presented cold and sweating extremities.

RT-PCR nasopharyngeal swab for SARS-CoV-2 was repeated, being negative, while serology test confirmed the positivity of the specific SARS-CoV-2 IgG.

A 4 mm punch biopsy of a right foot lesion showed superficial and deep perivascular dermatitis. Oedema, slight perivascular lymphocytic infiltrate, some thick-walled vessels and proliferation of thin-walled vessels with swollen endothelial cells (endothelialitis) were detected in the dermis (Fig. 2). RT-PCR performed on tissue was negative for SARS-CoV-2. Laboratory assessment was normal, including routine blood test, CRP, coagulation profile (PT, aPTT, INR, fibrinogen, D-dimer), ferritin and inflammatory cytokines profile (including IL6, IL8).

The skin manifestations cleared spontaneously in 3 weeks. A chilblain relapse was observed after 3 months and negative nasopharyngeal swab RT-PCR ruled out virus re-infection.