Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

suggestions for how to best fill the gaps from missed opportunities.

Away rotations have been opportunities for students to foster relationships with faculty, residents, and programs; obtain letters of recommendation; and demonstrate a strong interest in specific dermatology programs. Because of the delay in or cancellation of away rotations and research conferences, the ability for students to establish professional connections outside of their institution has become challenging. In lieu of typical in-person rotations, it has been suggested that students be offered virtual away rotations. Virtual rotations include online didactics, use of the American Academy of Dermatology's online modules, and interactive sessions led by residents and faculty.[2] According to the Dermatology Residency Program Directors, away rotations "should not be perceived as required or necessary for matching into dermatology residency," with the exception of applicants without a home dermatology program.[1]

Similarly, the Association of American Medical Colleges has officially recommended that programs conduct all residency interviews virtually via telephone or video conference. This essential recommendation adds an additional layer of difficulty for both programs and applicants as they seek ways to determine their best fit. To help standardize and optimize the process, the American Academy of Dermatology has released a proposal detailing how web-based interviews should be conducted.[3] Furthermore, the Association of American Medical Colleges has provided virtual interviewing tips to assist applicants navigating this application cycle.[4] Applicants should familiarize themselves with the technology being used during the interviews and ensure that they have a stable internet connection. The interview should be conducted in a private and well-lit space in which the applicant is clearly visible to the interviewer. Additionally, applicants should wear professional clothing and come prepared with relevant interview materials just as they would for an in-person residency interview.

Among the uncertainty and anxiety surrounding this unusual application cycle, some residency programs are pushing for reexamination of the characteristics used to stratify and select applicants. It has been suggested that applicants be evaluated by a holistic process, taking into consideration the personal and professional journey that led them to dermatology. An emphasis should be placed on seeking out applicants who "exhibit selflessness or grit and will enhance the robustness and diversity of our workforce."[5] Dermatology applicants and residencies must remain understanding, flexible, and willing to adapt, as all of medicine must do in these unprecedented times.

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Risk of COVID-19 in dermatologic patients receiving long-term immunomodulatory therapy

To the Editor: As the coronavirus disease 2019 (COVID-19) pandemic has rapidly spread around the globe, concern has been raised regarding susceptibility of patients receiving immunomodulatory therapies to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Although

Table I. Baseline characteristics of patients receiving immunosuppressive therapy

Characteristic	All patients (n = 412)	Patients with positive and presumed-positive results (n = 5)
Demographics		
Mean age (SD), y	48.2 (15.9)	48.4
Men, No. (%)	196 (48)	2 (40)
Women, No. (%)	216 (52)	3 (60)
Live in Massachusetts, No. (%)	382 (93)	5 (100)
Medications, No. (%)		
Biologics		
TNFα inhibitor	117 (28.4)	2 (40)
IL-17 inhibitor	29 (7)	0
IL-23 inhibitor	30 (7.3)	0
IL-12/23 inhibitor	54 (13.2)	1 (20)
JAK inhibitor	12 (2.9)	0
Traditional immunosuppressives No. (%)		
Methotrexate	48 (11.7)	1 (20)
Cyclosporine	5 (1.2)	0
Mycophenolate mofetil	8 (1.9)	0
Other immunomodulatory therapies, No. (%)		
IL-4Rα inhibitor	65 (15.8)	0
Apremilast	26 (6.3)	1 (20)
Multiple medications (combination of multiple biologics, traditional immunosuppressives, and other immunomodulatory therapies)	18 (4.4)	0
COVID-19 outcomes, No. (%)		
COVID-related hospitalization	1 (0.2)	1 (20)
Any cause of death	0	0
Degree of contact with others, No. (%)		
	n = 260	n = 5
None (patient generally not leaving home)	158 (60.8)	1 (33)
Patient with minimal degree of contact at work	31 (11.9)	0
Patient with minimal degree of contact at home	31 (11.9)	1 (33)
Patient with minimal degree of contact both at work and home	9 (3.5)	0
Patient with high degree of contact at work and home	22 (8.5)	1 (33)
Household member with high degree of contact at work	9 (3.5)	0
COVID-19 symptoms/testing, No. (%)		
	Patients self-reporting symptoms (n = 25)*	Patients with positive and presumed-positive results (n = 5)
Patients with symptoms and positive COVID-19 PCR test result	2 (8)	2 (40)
Patients with symptoms and negative COVID-19 PCR test result	9 (36)	1 (20)†
Patients with symptoms who were not tested for COVID-19	14 (56)	2 (40)†

IL, Interleukin; *JAK*, Janus kinase; *PCR*, polymerase chain reaction; *TNF*, tumor necrosis factor.

*Symptoms include any patient-reported symptom of cough, fever, diarrhea, body aches, loss of smell, or dyspnea. These patients would meet COVID-19 testing criteria at our institution while receiving immunosuppression.

†Patient was evaluated by a primary care physician who believed that the patient had COVID-19.

general guidance has been put forth, data regarding infection rate and outcomes in immunosuppressed patients are still rare.[1] Recent articles, including the work by Gisondi et al,[2] suggest that outcomes of patients receiving systemic immunomodulatory therapies who are infected with SARS-CoV-2 are similar to those of the general population. These findings may relate to the aberrant cytokine and inflammatory responses in severe COVID-19, which may be treated or partially blunted by cytokine-targeted therapy.[3] Given the substantial outbreak of COVID-19 in our community, we tested whether, in addition

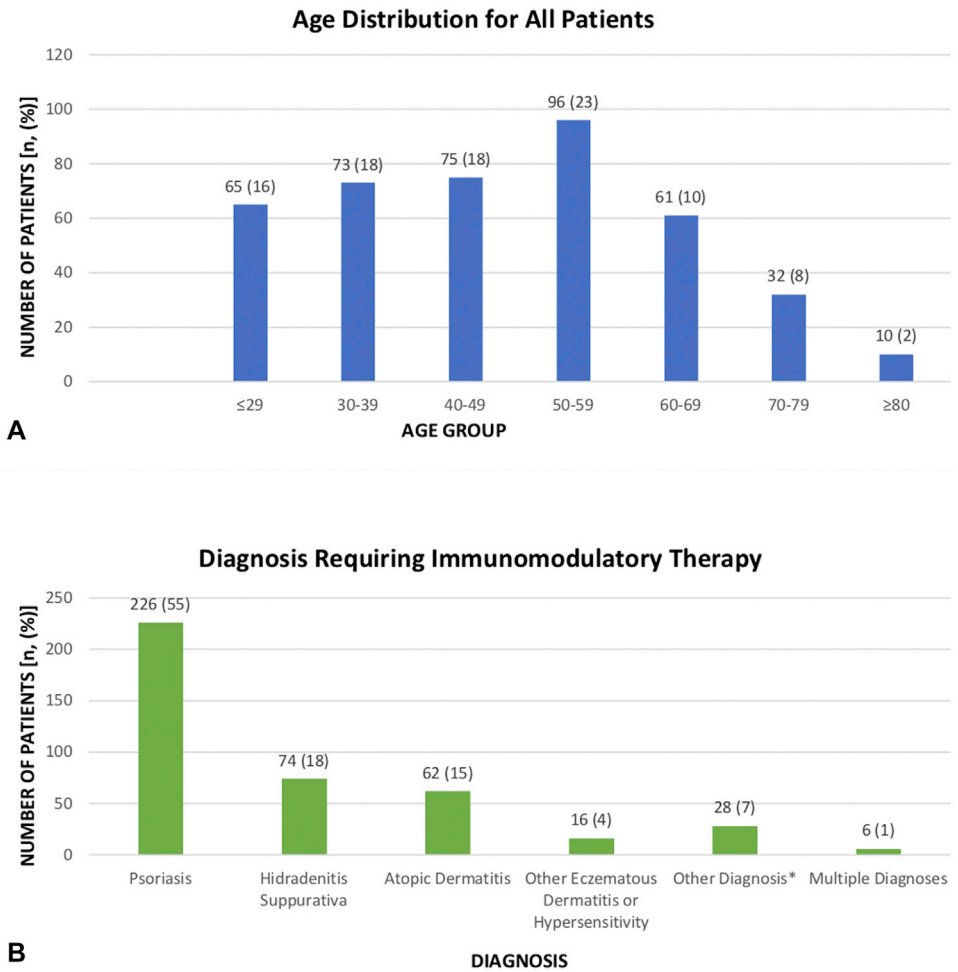

Fig 1. **A**, Age distributions of all patients receiving immunomodulatory therapy. **B**, Underlying diagnoses being treated. *Other diagnoses included bullous pemphigoid (6), pyoderma gangrenosum (4), alopecia areata (2), lichen planopilaris (2), unspecified pruritus (2), vasculitis (2), acne keloidalis nuchae (1), discoid lupus erythematosus (1), granuloma annulare (1), lichen planus (1), lichen simplex chronicus (1), morphea (1), pemphigus vulgaris (1), pityriasis lichenoides (1), pityriasis rubra pilaris (1), and systemic lupus erythematosus (1).

to similar outcomes, patients receiving systemic immunomodulatory therapy had infection rates similar to those of the general population.

We performed a retrospective cross-sectional analysis of patients treated across all providers at Beth Israel Deaconess Department of Dermatology. Our clinical practice has 412 patients receiving systemic immunomodulatory medications, including biologics and traditional immunosuppressives, prescribed within the past year. Patients were surveyed by a clinic telephone call, by a telemedicine visit, or through an outreach wellness check-in call from March 15 to May 8, 2020, corresponding to the peak incidence of new cases of COVID-19 in Massachusetts.

Of our 412 patients, 327 were successfully contacted, with approximately 80% contacted after April 19, 2020. We were not able to identify any hospitalizations in Boston-area hospitals for the other 85 patients. Results are shown in Table I, with age distributions and conditions requiring immunomodulatory therapy displayed in Fig 1. There were no statistical differences in age, sex, or medications between the patients who were reached and those who were not.

As one of the hot spots of viral spread in the United States, Boston and the surrounding areas are ideal locations for studying effects of viral transmission. At data collection, slightly greater than 1% of Massachusetts residents had received a diagnosis of COVID-19, and slightly fewer than 10% of these patients required hospitalization.[4] These numbers were similar in our patient population, with only 5 infections and 1 hospitalization, suggesting that the

risk of both COVID-19 and poor outcomes is minimally affected by dermatologic immunomodulatory medications. However, many patients were successfully isolating to a large degree, and the low infectious rates appear to be due, at least in part, to enhanced social distancing efforts. As has been proposed previously,[5] our findings suggest that when combined with patient education and encouragement to minimize exposure risks, systemic immunomodulatory therapies for dermatologic indications can be safely continued during the COVID-19 pandemic.

Limitations include the unknown number of asymptomatic infections, lack of available confirmatory COVID-19 testing in some cases, and the effect of social distancing as a confounding factor on infection rates. Also, our practice consists of only adult patients. Despite these limitations, we did not observe evidence of increased infectious risk, and we hope that these data will inform treatment decisions for patients who need these medications despite the ongoing COVID-19 pandemic.

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The presence and distribution of novel coronavirus in a medical environment

To the Editor: Coronavirus disease 2019 (COVID-19) has constituted a global pandemic,[1] and infections of medical staff with severe acute respiratory syndrome-coronavirus-2 (SARS-Cov-2) are a major concern because the number of infected medical staff in Spain has exceeded 10,000.[2] A significant undertaking is to explore possible routes of infection for medical staff to strengthen their protection, reduce the infection rate, and effectively control the epidemic.[3]

Because of daily disinfection and cleaning, the presence and distribution of SARS-COV-2 in a medical environment may differ from that in other environments. To detect COVID-19 in a medical environment, samples from surfaces of personal protective equipment, medical facilities, and the belongings of patients with confirmed disease