large effect size ($t = 3.9306$, $df = 15$; $P = .005$) at the 3-month follow-up. No participant reported a clinically significant increase in symptoms, and no adverse events were reported. Eighty-five percent of participants ($n = 17$) registered at least 1 exercise and 65% ($n = 13$) returned at least 5 of 8 homework assignments. Treatment satisfaction was acceptable.

**Discussion** | We aimed to evaluate the potential utility of this online self-management psychological intervention for AD. We also compared it to the original, comprehensive, therapist-guided version. Significant improvements in self-rated AD symptoms (POEM scores), with large effect sizes, were reported at the 3-month follow-up. These results are similar to those reported for the original treatment. Findings suggest that a self-care intervention is feasible and potentially comparable to a comprehensive, therapist-guided version, provided that the intervention is well designed and includes clinical interviews and on-demand technical support.

A study limitation is the lack of comparison to a control group; therefore, the findings are preliminary. A randomized comparison of the interventions is needed. If this self-care treatment is shown to be noninferior and resource effective, it may be a highly useful option for patients with AD.

Dorian Kern, MSc
Björn Ljótsson, PhD
Louise Löndahl, MD, PhD
Erik Hedman-Lagerlöf, PhD
Maria Bradley, MD, PhD
Nils Lindefors, MD, PhD
Martin Kraepelien, PhD

**Author Affiliations:** Centre for Psychiatry Research, Department of Clinical Neuroscience, Karolinska Institutet & Stockholm Health Care Services, Region Stockholm, Stockholm, Sweden (Kern, Hedman-Lagerlöf, Lindefors, Kraepelien); Division of Psychology, Department of Clinical Neuroscience, Karolinska Institutet, Solna, Sweden (Kern, Löndahl); Dermatology and Venerology Unit, Department of Medicine Solna, Karolinska Institutet, Stockholm, Sweden (Löndahl, Bradley).

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**Corresponding Author:** Dorian Kern, MSc, Centre for Psychiatry Research, Norra stationsgatan 69, 113 64 Stockholm, Sweden (dorian.kern@ki.se).

**Author Contributions:** Mr Kern had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**Concept and design:** Kern, Ljótsson, Löndahl, Hedman-Lagerlöf, Lindefors, Kraepelien.

**Acquisition, analysis, or interpretation of data:** Kern, Ljótsson, Löndahl, Bradley, Kraepelien.

**Drafting of the manuscript:** Kern, Ljótsson, Kraepelien.

**Critical revision of the manuscript for important intellectual content:** All authors.

**Statistical analysis:** Kern.

**Obtained funding:** Lindefors.

**Administrative, technical, or material support:** Kern, Löndahl, Kraepelien.

**Supervision:** Ljótsson, Hedman-Lagerlöf, Lindefors, Kraepelien.

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**Outcomes of COVID-19 and Vaccination in Patients With Moderate to Severe Atopic Dermatitis Treated With Tralokinumab**

Atopic dermatitis (AD) is an inflammatory skin disorder mainly caused by Th2 cytokines, especially interleukin (IL) 13. Tralokinumab, an IgG4 monoclonal antibody that neutralizes IL-13, has demonstrated safety and efficacy in clinical trials for treatment of adults with moderate to severe AD.1-2 Concerns arose during the COVID-19 pandemic that immunomodulatory drugs may increase disease susceptibility or severity or interfere with SARS-CoV-2 vaccination. The aim of the study was to assess outcomes of COVID-19 and SARS-CoV-2 vaccination among adult patients with AD treated with tralokinumab in the ECZTECT trial (NCT03587805).

**Methods** | This case series included a subset of adults enrolled through April 30, 2021, in the ongoing ECZTECT trial who received subcutaneous tralokinumab, 300 mg, every 2 weeks plus optional topical corticosteroids after a 600-mg loading dose and reported COVID-19 as an adverse event during routine clinic visits. The ECZTECT trial was approved by institutional review boards at participating institutions, and all participants provided written informed consent; approval extended to this post hoc case series. We followed the reporting guideline for case series.

**Results** | Among 1442 patients enrolled in the ECZTECT trial through April 30, 2021, 77 adults had confirmed COVID-19 (Table 1). Many patients had established or probable risk
factors for severe illness according to the Centers for Disease Control and Prevention classification: 4 (5%) were 60 years or older, 10 (13%) had hypertension, 42 (55%) had asthma, and 51 (66%) had a body mass index of 25 or greater (overweight or obesity).

COVID-19 severity was predominantly considered to be mild (n = 52 of 77 [68%]) or moderate (n = 23 [30%]) according to the investigator’s clinical judgment (Table 2). Two patients (3%) had severe symptoms, with multiple risk factors associated with severe COVID-19; both patients recovered after hospitalization (1 [1%] with sequelae). Neither case was reported as associated with tralokinumab treatment. Two COVID-19 cases (1 mild [1%], 1 moderate [1%]) were reported by investigators as possibly associated with tralokinumab treatment; both occurred in patients younger than age 30 years and resolved within 22 days. There were no deaths from COVID-19. All patients continued tralokinumab therapy after COVID-19, and 60 (78%) did not interrupt treatment.

Seventy-six of 77 patients (99%) with confirmed COVID-19 were unvaccinated at the time of infection. One patient (1%) was partially vaccinated (received 1 of 2 doses) at the time of infection. As of April 30, 2021, 231 adult patients (16%) in the ECZTEND trial had received 1 or more SARS-CoV-2 vaccine doses; of these, 93 (40%) were fully vaccinated, and 136 (59%) were partially vaccinated (data for 2 patients [1%] could not be confirmed). No patients report adverse events followed by permanent discontinuation of tralokinumab treatment after vaccination.

Discussion | In this case series of adults with moderate to severe AD enrolled in the ECZTEND trial, confirmed COVID-19 infections were predominantly mild or moderate (97%), and all but 1 occurred in unvaccinated patients. No new safety signals or evidence for reduced effectiveness of SARS-CoV-2 vaccines administered during tralokinumab treatment were reported, in accordance with previous work that reported that non-live vaccines could be safely administered during tralokinumab treatment and elicit normal immune responses.

### Table 1. Baseline Demographic and Clinical Characteristics for Patients in the ECZTEND Trial With Confirmed COVID-19 Through April 30, 2021

| Characteristic                             | Patients with COVID-19, No. (%) (n = 77) |
|--------------------------------------------|------------------------------------------|
| Age, mean (SD) [range], y                  | 38 (13) [19-70]                          |
| Age, ≥60 y                                 | 4 (5)                                    |
| Sex                                         |                                          |
| Male                                       | 37 (48)                                  |
| Female                                     | 40 (52)                                  |
| Raceb                                      |                                          |
| American Indian or Alaska Native           | 1 (1)                                    |
| Asian                                      | 4 (5)                                    |
| Black or African American                  | 8 (10)                                   |
| White                                      | 62 (81)                                  |
| Otherc                                     | 2 (3)                                    |
| Ethnicityb                                 |                                          |
| Hispanic or Latino                         | 7 (9)                                    |
| Not Hispanic or Latino                     | 70 (91)                                  |
| Geographic region                          |                                          |
| North America                              | 19 (25)                                  |
| Europe                                     | 58 (75)                                  |
| Baseline BMI, mean (SD)                    | 28 (7)                                   |
| Disease historyd                           |                                          |
| Down syndrome                              | 1 (1)                                    |
| Cancer                                     | 1 (1)                                    |
| Chronic kidney disease                     | 1 (1)                                    |
| Lung disease                               | 2 (3)                                    |
| Diabetes                                   | 2 (3)                                    |
| Hypertension                               | 10 (13)                                  |
| Asthma                                     | 42 (55)                                  |
| Overweight or obesity (BMI ≥25)            | 51 (66)                                  |

Abbreviation: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared).

| Event                                      | Patients with COVID-19, No. (%) (n = 77)* |
|--------------------------------------------|------------------------------------------|
| Disease course                             |                                          |
| Mild                                       | 52 (68)                                  |
| Moderate                                   | 23 (30)                                  |
| Severe                                     | 2 (3)                                    |
| Fatal                                      | 0                                        |
| Disease duration, median (IQR), d          | 15 (10-18)                               |
| Recovery                                   |                                          |
| Full                                       | 74 (96)                                  |
| With sequelae (supplemental oxygen when discharged to home) | 1 (1)                                    |
| Not recovered by April 30, 2021            | 2 (3)                                    |
| Serious adverse events                     |                                          |
| Hospitalization                            | 3 (4)                                    |
| Duration of hospitalization (from admission to discharge), mean (range), d | 8 (5-10)                                 |
| Possibly associated with treatment         | 2 (3)                                    |
| Tralokinumab continuationb                 |                                          |
| No dose interruption                       | 60 (78)                                  |
| Dose interruption                          | 17 (22)                                  |
| Vaccination status at time of COVID-19 infection |      |
| Unvaccinated                               | 76 (99)                                  |
| Partially vaccinated                       | 1 (1)                                    |

* Totals may not equal 100 because of rounding.

b Demographic data were collected based on an interview with the trial participant, including self-reporting of race and ethnicity.

c Other included South American and Philippine.

d Additional risk factors (eg, pregnancy, organ transplant, and HIV) fall under trial exclusion criteria. No patients with confirmed COVID-19 had a history of cerebrovascular disease, heart conditions, or liver disease.
Elevated Th2 cytokines, including IL-13, have been associated with severe COVID-19, and neutralization of IL-13 in SARS-CoV-2-infected mice reduced death and disease severity. A large prospective registry study showed that dupilumab, which inhibits IL-13 and IL-4, attenuated COVID-19 responses and was associated with milder infections. The current analysis suggests that tralokinumab treatment may not be associated with increased COVID-19 severity or worse clinical outcomes.

This study has limitations. First, asymptomatic or mild COVID-19 may not have been recognized. Second, the series lacked a comparison group of COVID-19 in patients with AD not treated with tralokinumab.

This work provides clinically relevant information on adults with AD treated with tralokinumab who were diagnosed with COVID-19 or received SARS-CoV-2 vaccination during the COVID-19 pandemic. New SARS-CoV-2 variants, evolving vaccination guidelines, and COVID-19 treatments may affect decision-making in the future.

Andrew Blauvelt, MD, MBA
Andrew Pink, PhD
Margitta Worm, MD
Richard G. B. Langley, MD
Boni E. Elewski, MD
Le Gjerum, MD, PhD
Emma Guttman-Yassky, MD, PhD

Author Affiliations: Oregon Medical Research Center, Portland (Blauvelt); St John’s Institute of Dermatology, Guy’s Hospital, London, United Kingdom (Pink); Division of Allergy and Immunology, Department of Dermatology, Venerology and Allergology, Charité–Universitätsmedizin Berlin, Berlin, Germany (Worm); Division of Clinical Dermatology and Cutaneous Science, Dalhousie University, Halifax, Nova Scotia, Canada (Langley); Department of Dermatology, The University of Alabama at Birmingham, Birmingham (Elewski); LEO Pharma, Ballerup, Denmark (Gjerum); Kimberly and Eric J. Waldman Department of Dermatology, Icahn School of Medicine at Mount Sinai, New York, New York (Guttman-Yassky).

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Corresponding Author: Andrew Blauvelt, MD, MBA, Oregon Medical Research Center, 9495 SW Locust St, Ste G, Portland, OR 97223 (ableuvelt@oregonmedicalresearch.com).

Author Contributions: Dr Blauvelt had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Blauvelt, Langley, Gjerum, Guttman-Yassky.
Acquisition, analysis, or interpretation of data: All authors.
Critical revision of the manuscript for important intellectual content: All authors.
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Supervision: Blauvelt, Pink, Elewski, Guttman-Yassky.

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OBSERVATION

Treatment of Warts With Needle-Free Injection of Fluorouracil

Warts are a very common infectious skin disease caused by human papillomavirus. Although several pharmacological and physical therapies, including salicylic acid, cryosurgery, fluorouracil (FU), and bleomycin, are available, the treatment of warts remains a challenge because of unsatisfying results and painful process. In this article, we describe 2 patients with warts who were successfully treated with needle-free injection of FU. To our knowledge, this method for warts has not been previously reported.

Report of Cases | Case 1. A 22-year-old man presented for an evaluation of multiple warts on the finger that he had noticed for more than 6 months. Physical examination revealed three 5 mm in diameter, hyperkeratotic, yellow papules on the middle finger of the right hand (Figure 1A; taken by dermoscope, as for Figure 1B), which were then diagnosed as warts. The patient was treated with an intraleional injection of FU with a needle-free injector (Injex; Rösch AG Medizintechnik). The warts were first wiped with alcohol and then superficially pared with a scalpel to remove the associated callus without reaching the bleeding point; 0.05 mL of a mixture of FU (10 mL, 0.25 g) and lidocaine (5 mL, 0.1 g) was then injected vertically into each wart. The patient’s visual analog scale pain score was 2 of 10. Two weeks later, round black scabs formed at the injection site, 1 of which had fallen off with no residue underneath (Figure 1B). After 2 treatments, the warts on the patient’s finger were healed completely without scarring or hyperpigmentation (Figure 1C; taken 3 weeks after the second treatment). No recurrence occurred during a 6-month follow-up.

Case 2. A 25-year-old man presented with an 8 mm in diameter wart of 2 months’ duration on the big toe of his right foot (Figure 1D). He received the same treatment as the first patient and reported a visual analog scale score of 1 of 10. After 2 treatments of 0.08 mL each, the wart was cleared thoroughly and did not recur for 6 months (Figure 1, E and F).

Discussion | There are several treatment options available for warts, but the clinical efficacy of them is not satisfactory, not to mention the pain, erythema, ulceration, and crusting caused by most of them. Although 93% of patients could experience complete resolution with treatment with a conventional needle...