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Title: European Task Force on Atopic Dermatitis (ETFAD): position on vaccination of adult patients with atopic dermatitis against COVID-19 (SARS-CoV-2) being treated with systemic medication and biologics

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The coronavirus disease 2019 (COVID-19) pandemic is caused by rapid spread of different strains of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The severity of infection ranges from mild, or even asymptomatic, to very severe. Signs and symptoms include fatigue, fever, exanthemas, upper respiratory illness, loss of smell and taste, pneumonia, severe acute respiratory syndrome, and multi-organ failure. Risk factors for a severe or lethal course include age, male gender, obesity, diabetes, cardiovascular disease, and immune suppression[1]. At the start of the pandemic, the ETFAD shared their position on continuation of systemic immune-modulating treatments, including immuno-suppressive therapy, in atopic dermatitis (AD) patients during the time of the pandemic[2].

Safe and effective vaccines are urgently needed to control the pandemic and achieve herd immunity. More than 50 COVID-19 vaccine candidates are currently in trials. mRNA vaccines lead to production of antigens by host cells, and two (RNA-1273 and BNT162b2) were recently approved in EU member states to vaccinate adults against COVID-19. A viral vector-based vaccine (AZD1222) has been approved in the United Kingdom, but not yet in the EU.

National strategic guidelines and recommendations are being developed and utilized to vaccinate initially those with increased risk factors for a severe course, as well as those being employed in critical positions. This article provides the position of ETFAD members regarding COVID-19 vaccination of adult patients with AD being treated with systemic immuno-suppressive medication and biologics. A separate article discusses how dermatologist may manage allergic issues. Vaccination particularly against pneumococcus and influenza, should be performed as recommended in the guidelines[3].

The ETFAD acknowledges that

- There is currently no evidence to suggest that AD is an independent risk factor for acquiring SARS-CoV-2, or of having a more severe course of COVID-19, above and beyond other important co-morbid conditions, such as obesity, cardiovascular disease, and diabetes.
- AD is not a contraindication to vaccination. It is unclear whether SARS-CoV-2 vaccination could cause brief AD worsening, but this is not suspected since the vaccination response is mainly T helper cell 1 skewed[4].
- Systemic immunosuppressants and JAK-inhibitors used to treat AD may attenuate the vaccination response[5], but no attenuation is expected for dupilumab[6].

Based on the listed uncertainties and AD disease characteristics[3, 7], the risk-benefit ratio of all currently approved vaccines appears better than the risk of an infection with SARS-CoV-2, also for AD patients. There is no clear evidence to recommend that systemic AD medication is paused before or after COVID-19 vaccination. Temporary 2-week discontinuation of methotrexate slightly improved the immunogenicity of seasonal influenza vaccination in patients with rheumatoid arthritis[5], but this may not be relevant to mRNA-based vaccines. Clinicians may therefore consider pausing immunosuppressant possible during vaccination, typically from the vaccination day until 1 week after for JAK inhibitors and cyclosporine, or until 2 weeks after for methotrexate and azathioprine, to possibly improve chances or appropriate vaccination response. Alternatively, the lowest dose possible may be used, e.g. 2.5 mg/kg/day cyclosporine, 1 mg/kg/day azathioprine, and 7.5 mg/week methotrexate. The ETFAD recommends to strictly follow guidelines and decisions issued by the local and national health authorities in each country. While patients on immunosuppressive drugs for AD will need a case-by-case approach considering the specific drug and vaccine product, inadequate antibody response in selected individuals is not a major concern and the risk/benefit of vaccination is considered favorable for the overall AD population. At least 3 weeks are recommended between the two COVID-19 vaccine doses, which increases the risk of AD flares and loss of AD control if the systemic AD medication is paused or reduced in dose for longer periods. Measurement of antibodies against SARS-CoV-2 can be done in cases with particular importance of successful immunization. If a live vaccine against COVID-19 is registered in the future, our recommendations for the use of this vaccine may be different. We encourage registration of COVID-19 AD patients in the ETFAD-supported SECURE-AD register (www.secure-derm.com), which also captures AD patients' experiences of SARS-CoV-2 vaccination[8].

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