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Title: European Task Force on Atopic Dermatitis (ETFAD) statement on severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2)-infection and atopic dermatitis

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Atopic dermatitis (AD) is a complex disease with elevated risk of respiratory comorbidities.[1,2] Severely affected patients are often treated with immune-modulating systemic drugs.[3,4] On March 11th 2020, the World Health Organization declared the 2019 novel coronavirus severe acute respiratory syndrome (SARS-Cov-2) epidemic to be a pandemic. The number of cases worldwide is increasing exponentially and poses a major health threat, especially for those who are elderly, immuno-compromised, or have comorbidities. This also applies to AD patients on systemic immune-modulating treatment. In these days of uncertainty, reallocation of medical resources, curfew, hoarding, and shutdown of normal social life, patients, caregivers and doctors ask questions regarding the continuation of systemic immune-modulating treatment of AD patients. The ETFAD decided to address some of these questions here:

What do we recommend for AD patients treated with immune-modulating therapy at times of SARS-Cov-2 pandemic?

- To continue all immune-modulating treatments, including immuno-suppressive therapy, since exacerbations of underlying diseases can have a large negative impact on patients' immunity.
- To strictly follow the recommendations for patients at risk issued by the local health authorities in each European country.
- To carefully observe hygienic procedures using hand wash and disinfectants. Non-irritant soap substitutes should be used in the same way as directed for soap. Moisturizers should be applied afterwards.

Which considerations regarding comorbidities of AD and pausing of systemic therapy should be made in SARS-CoV-2 infected patients?

- Patients diagnosed with coronavirus disease (COVID-19) should undergo interdisciplinary risk assessment first. Immune-modulating therapy may or may not be paused afterwards, in accordance with current guidelines on active infections and systemic therapy.
- Immune-modulating drugs used for treating AD also affect the severity of co-morbidities such as asthma, chronic obstructive lung disease, eosinophilic esophagitis, kidney disease and severe allergies. The abrupt termination of a stable systemic treatment regimen may lead to exacerbations of AD and such comorbidities.

- If systemic treatment of AD needs to be paused, patients should be supplied with ample topical therapy, and guidance on the amount needed to prevent flares until systemic therapy can be reinstated.[3,4] Monitoring and treatment of comorbidities such as asthma is required in such a situation.

- Patients with severe and complicated AD should ideally be managed in a specialized, tertiary center.[5]

Can we predict interactions of AD, its complications, immunosuppressive and immunomodulating therapies with COVID-19?

- Severe and untreated AD is a known risk factor for disseminated viral skin disease.[6] On the other hand, many conventional systemic immune-modulating agents, such as cyclosporine, may interact with the human bodies defense mechanisms against viral disease. We currently do not know how SARS-CoV-2 affects AD patients and specifically those on immune-modulating therapies.

- Disseminated viral skin infection such as eczema herpeticum, herpes zoster infection or seasonal nasopharyngitis observed in AD patients could serve as potential model diseases for estimating the handling of SARS-CoV-2 infection by AD patients on systemic therapy, but the conclusions which can reasonably be drawn are very limited.

- Targeted treatment selectively interfering with type 2 inflammation, such as dupilumab, is not considered to increase the risk for viral infections and might thus be preferred compared to conventional systemic immuno-suppressive treatments, such as cyclosporine, in a situation such as the COVID-19 pandemic. However, this theoretical advantage is not supported by robust clinical data.

Finally, the ETFAD recommends all doctors treating AD patients to remain vigilant and updated through international, national and local guidelines, local health authorities' homepages and the WHO homepage www.who.int.

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