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Psoriasis, COVID-19 and shielding

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The COVID-19 pandemic has presented clinicians managing immune-mediated inflammatory diseases (IMIDs) such as psoriasis, with many challenges. Patients with severe psoriasis have an increased prevalence of risk factors for severe COVID-19 including obesity, hypertension, diabetes and male sex.[1] Moreover, many systemic treatments for psoriasis are known to increase the risk of severe infection. Therefore, it is understandable that in the early stages of the pandemic, patients on conventional targeted systemic therapies were considered to be at higher risk of severe COVID-19 infection. In addition to risk-mitigating behaviours such as social distancing recommended by the World Health Organization, those who were thought to be more vulnerable, for instance those on immunosuppressants, were advised to adopt stricter measures of social isolation including distancing themselves from other members of their household.[2,3] There was a pressing need to establish whether patients on immunosuppressive or immunomodulatory medications should continue on their medications.

By early 2020, international registries for patients with IMIDs, such as PsoProtect and SECURE-AD Registry, had been established for healthcare professionals to record cases of COVID-19 and the impact of systemic treatments on outcomes of the infection. Registry data have shown that patients on targeted systemic treatment such as biologics do not appear to be at increased risk of severe COVID-19 compared with those on standard systemic agents or no treatment.[4] Counterintuitively, patients receiving treatments that block cytokines such as tumour necrosis factor and interleukin-17A appear to have a lower rate of hospitalization from COVID-19.[5] This could be due to immunomodulatory effects of these drugs on the overproduction of cytokines that contribute to deleterious consequences of severe COVID-19 infection. An alternative explanation is behavioural – perhaps patients on biologics are less likely to be exposed to the virus because of particularly effective shielding.

PsoProtectMe and the CORE-UK study (COVID-19 Rheumatology Register) are online self-reporting registries for patients with psoriasis and rheumatoid arthritis, respectively, to record their experiences and behaviour during this pandemic. In this issue of the *BJD*, Mahil *et al.* characterize the shielding behaviours in 3720 participants with IMIDs from 74 countries, and report on how these differ by treatment type.[6] Patients were divided into three treatment groups: standard systemic agents (e.g. methotrexate), targeted systemic treatments (biologics and Janus kinase inhibitors) and no systemic treatment. Of the 3720 participants, 2262 reported shielding behaviour. Of those shielding, 1632 were based in the UK and, interestingly, only 899 of them reported having been specifically advised to shield. Along with male sex, obesity and comorbidity burden, the investigators found that the use of targeted systemic treatment was most strongly associated with increased shielding behaviour, compared with standard systemic therapy or no therapy. The reasons for this are unclear, and further studies would be useful to ascertain if there are differences in patient perception of risk across different treatment groups and why this might be. Shielding correlated positively with anxiety and depression, and inversely with larger households and cigarette smoking, suggesting individual factors contribute, as well as the advice received.

Despite the limitations of online self-reporting, for instance access to and literacy in information technology, as well as recall bias, this study provides valuable information both for clinicians caring for patients with IMIDs during this pandemic, and for public health agencies responsible for advising patients on risk-mitigating behaviour. Registries such as PsoprotectMe are vital in helping clinicians understand more about the complicated relationships between psoriasis, its treatments, patient behaviours and COVID-19 infection.

G. Becher [1] and A.D. Burden [2]

[1]*West Glasgow Ambulatory Care Hospital, Glasgow, UK and* [2]*Institute of Infection, Immunity and Inflammation, University of Glasgow, UK*
Email: gbecher@doctors.net.uk

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Psychiatric conditions in children with atopic dermatitis

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It is well-known that children with atopic dermatitis (AD) have a reduced health-related quality of life that is of a similar magnitude to children with cerebral palsy and diabetes mellitus.[1,2] It is also known that children with AD have an increased risk of attention deficit hyperactivity disorder (ADHD).[3] Less is known about other psychiatric comorbidities in children with AD.

Two recent systematic reviews and meta-analyses[4,5] found an association between AD and depression among adults and children, with a stronger association in adults when comparing patients with AD with healthy controls.[4,5] However, AD was not significantly associated with depression when comparing patients with AD with patients who had other skin disorders.[5] A significant association between AD and suicidal ideation was also reported.[4,5] The majority of the studies in the systematic reviews were cross-sectional (15 of 23[4] and 36 of 36[5]). The Danish review also included analyses of the association between AD and anxiety, and found a positive association when comparing healthy controls with adults and children with AD together (including only one study in children).[4] Information on the longitudinal relationship between AD and depression as well as other psychiatric conditions is scarce, particularly for children.

In this issue Vittrup *et al*., based on well-defined national registries, describe the longitudinal association between hospital-diagnosed AD from birth up to the age of 18 and hospital-diagnosed psychiatric disorders, consultation with a psychiatrist or psychologist, or use of psychotropic drugs among all children born in Denmark between 1995 and 2012.[6] The control group consisted of 10 matched individuals without hospital-diagnosed AD during the study period (but with possible AD or psychiatric diagnosis in primary care) per child with hospital-diagnosed AD. As previously shown, they confirmed a positive association between hospital-diagnosed AD and hospital-diagnosed ADHD as well as medication used for ADHD.

Unlike previous studies, they did not find any association between hospital-diagnosed AD and hospital-diagnosed depression, anxiety or self-harming behaviour. The longitudinal design of this study probably minimizes the risk of ascertainment bias (having one diagnosis and contact with healthcare increases the risk of picking up more diagnoses on the same visit, which might introduce bias in cross-sectional studies)[7] and is an important contribution to epidemiological studies analysing the association between AD and psychiatric conditions. However, Vittrup *et al*. did show a significant association between hospital-diagnosed AD and the use of antidepressants or anxiolytics. Even though this is in line with the findings of the systematic reviews,[4,5] it is somewhat contradictory. Including milder cases of both AD and psychiatric disorders (seen in primary care) in the control group might have diluted the association between hospital-diagnosed AD and psychiatric conditions. Another explanation, suggested by the authors, is that psychiatric disorders in children with hospital-diagnosed AD might be transient or milder.

In a population-based setting, when compared with healthy controls, children with hospital-diagnosed AD have an increased association with treatment for psychiatric conditions, but not with receiving a psychiatric hospital diagnosis. This is an important contribution for the exploration of psychiatric comorbidities among patients with AD. Further research should focus on the mechanisms behind this association.

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E.K. Johansson [1,2]

[1]*Dermatology and Venereology Unit, Department of Medicine Solna, Karolinska Institutet, Stockholm, SE-171 77, Sweden and* [2]*Dermatology, Theme Inflammation and Aging, Karolinska University Hospital, Stockholm, SE-171 76, Sweden*
Email: emma.johansson@ki.se

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