excessively increase the frequency and duration of skin cleaning, which may damage the skin barrier and lead to desquamation, rhagades, and even itching or bleeding (Fig. 1). These skin problems undoubtedly increase the already heavy burdens of these HCWs. Facial skin is at high risk of exposure to virus particles and should be rinsed with clean water after rubbing with cleansers, while the risk of hair and body skin is relatively low and once-a-day cleaning is enough. Hand hygiene is extremely important. The hands should be washed before and after wearing PPE or contacting with COVID-19 patients, and after exposure to contaminated items.[7] Soap-based cleansers and synthetic cleansers can be used. Excessive washing of the skin and repeated application of disinfectants (e.g. bleach and alcohol) should be avoided.

When skin injuries occur, HCWs should check whether there is excessive pressure when using the PPE. If there are eczema-like changes, a glucocorticoid cream or ointment can be applied topically. When ulcers followed by secondary bacterial or fungal infections occur, an antibiotic ointment or antifungal drug may be applied on the skin lesions and covered with wound dressings. Dry skin caused by long-time use of PPE can be alleviated by non-irritating creams or emulsions (e.g. hand creams and skin moisturizers containing urea or ceramide) with long moisturizing time.

With COVID-19 spreading in countries all over the world, all HCWs need to be prepared for cases in their hospitals and communities. The skin care of our healthcare colleagues, which preserves the workforce vital for caring for patients with the disease, should be paid close attention to. This is an important subject that dermatologists should be working on in the battlefield against COVID-19.

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References

1 Wang FS, Zhang C. What to do next to control the 2019-nCoV epidemic? *Lancet* 2020; **395**: 391–393.
2 Zeng L, Xia S, Yuan W *et al*. Neonatal early-onset infection with SARS-CoV-2 in 33 neonates born to mothers with COVID-19 in Wuhan, China. *JAMA Pediatr* 2020. https://doi.org/10.1001/jamapediatrics.2020.0878
3 Adams JG, Walls RM. Supporting the health care workforce during the COVID-19 global epidemic. *JAMA* 2020; **323**: 1439–1440.
4 WHO. Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care. World Health Organization, 2014. URL https://apps.who.int/iris/handle/10665/112656 (last accessed: 24 Apr 2014).
5 Lan J, Song Z, Miao X *et al*. Skin damage among healthcare workers managing coronavirus disease-2019. *J Am Acad Dermatol* 2020; **82**: 1215–1216.
6 WHO. Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV), 2020. URL https://www.who.int/newsroom/detail/30-01-2020-statement-on-thesecond-meeting-of-the-international-healthregulations-(2005)-emergency-committeeregarding-the-outbreak-of-novel-coronavirus-(2019-ncov) (last accessed: 6 Feb 2020).
7 Pittet D, Allegranzi B, Boyce J. The World Health Organization guidelines on hand hygiene in health care and their consensus recommendations. *Infect Control Hosp Epidemiol* 2009; **30**: 611–622.

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Occurrence of SARS-CoV-2 during mycophenolate mofetil treatment for pemphigus

Editor

We read with great interest the article entitled 'Should SARS-CoV-2 influence immunosuppressive therapy for autoimmune blistering diseases?' published by Di Altobrando *et al*. in the JEADV.[1] This is the first report of COronaVIrus Disease 2019 (COVID-19) in a patient affected by autoimmune blistering disease (ABD) during immunosuppressive treatment (i.e. azathioprine).

The authors conclude that it is crucial to learn of more cases of ABD patients under immunosuppressive treatment who have developed COVID-19, in order to better quantify the risk of infection under immunosuppressive therapy.

Also, in our clinical practice, we suspended all follow-up visits and, in accordance with the directives of the Regional Health Service, we contacted all scheduled patients by phone.

We called a total of 43 patients: 30 affected by bullous pemphigoid, nine by pemphigus and four by mucous membrane

pemphigoid. Even though our region is the second most affected by COVID-19 in Italy (cumulative incidence: 718.72 cases/100 000 inhabitants),[2] only one of these patients tested positive for SARS-CoV-2, a 65-year-old female, affected by pemphigus for 40 months and in therapy with mycophenolate mofetil (MPM) for 38 months.

On March 24, her husband was discovered to be affected by COVID-19 and was isolated at home, while on March 27, our patient presented severe nausea, fever (37.1°C), anorexia and asthenia; the next day, she tested positive for SARS-CoV-2. However, she did not inform us immediately and did not suspend therapy until we contacted her on March 29, when we advised her to interrupt MPM.

We then called her daily for the next days: on April 2, her fever rose to 39°C, but lowered with paracetamol, and continued this pattern over the following 2 days. Starting from April 5, the fever ceased and she progressively improved; on April 8, she referred a total absence of any symptom.

The patient did not experience any pemphigus recurrence, but reported only some posterior tongue 'discomfort'. Moreover, she never developed cough, dyspnoea, anosmia, ageusia, myalgia or other symptoms of the infection. At present, we are waiting for 2 weeks after the end of symptoms to repeat a swab and restart the immunosuppressive treatment.

Mycophenolate mofetil is an immunosuppressant, antineoplastic and antiviral mediation, used in pemphigus as a corticosteroid-sparing agent. Due to its antiviral properties, some studies have investigated MPM as a potential therapy for MERS-CoV.[3] The drug has also been demonstrated to inhibit mRNA expression of pro-inflammatory cytokines TNF-α, IL-6 and IL-1β,[4] which are known to be associated with the progression of COVID-19 towards the worsening of clinical conditions.[5,6]

Even though the *in vitro* studies showed promising results for MPM against MERS, the *in vivo* studies suggest that its use is likely to cause more harm than benefit and hence is not likely to be useful against coronavirus infections.[3] However, our patient experienced a very mild form of the disease, without pulmonary complications, suggesting that the immunosuppressant therapy with MPM was not detrimental in the setting of COVID-19 infection.

Unfortunately, ABDs are rare conditions and it is difficult to collect large cohorts to confirm our observation. This would require much time, which is scarcely compatible with the urgency related to the COVID-19 sanitary emergency. Therefore, our present knowledge can only be based on anecdotal reports, and it is important to share also the single experience of any centre involved in the management of rare diseases.

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All authors have agreed to the contents of the manuscript in its submitted form.

The patients in this manuscript have given written informed consent to publication of their case details.

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References

1 Di Altobrando A, Patrizi A, Bardazzi F. Should SARS-CoV-2 influence immunosuppressive therapy for autoimmune blistering diseases? *J Eur Acad Dermatol Venereol* 2020. https://doi.org/10.1111/jdv.16491. [Epub ahead of print].
2 https://www.epicentro.iss.it/coronavirus/bollettino/Bollettino-sorveglianza-integrata-COVID-19_16-aprile-2020 (last accessed: 21 April 2020).
3 Russell B, Moss C, George G *et al*. Associations between immune-suppressive and stimulating drugs and novel COVID-19—a systematic review of current evidence. *Ecancermedicalscience* 2020; **14**: 1022.
4 Lv QK, Liu JX, Li SN *et al*. Mycophenolate mofetil modulates differentiation of Th1/Th2 and the secretion of cytokines in an active Crohn's disease mouse model. *Int J Mol Sci* 2015; **16**: 26654–26666.
5 Chen C, Zhang XR, Ju ZY, He WF. Advances in the research of cytokine storm mechanism induced by corona virus disease 2019 and the corresponding immunotherapies. *Zhonghua Shao Shang Za Zhi* 2020; **36**: E005. [Article in Chinese]
6 Huang C, Wang Y, Li X *et al*. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; **395**: 497–506.

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Pityriasis rosea as a cutaneous manifestation of COVID-19 infection

Dear Editor

Cutaneous manifestation has been reported in 0.2% of patients infected by COVID-19 in China[1] and 18 out of 88 patients from Italy.[2] The most commonly reported features are exanthematous rash, urticaria, chickenpox-like vesicles, petechiae and acute haemorrhagic oedema of infancy.[3–5]

Herein, we report one case of pityriasis rosea in a patient infected with COVID-19.

A 27-year-old man with no previous medical history presented initially with low-grade fever, fatigue, gastroenteritis and anorexia. Three days later, an erythematous and scaly annular plaque appeared on the left forearm, and several days later, generalized papular and plaque-type lesions occurred all over the trunk and upper extremities in a shape that resembles drooping pine-tree branches (Fig. 1). Lesions continued to disseminate for 5 days and became pruritic. A chest CT showed patchy ground-glass infiltration at the peripheral and base of both lungs consistent with the COVID-19 infection. Laboratory

