

source of coagulopathies. A few cases of digital ischaemia and necrosis have also been reported in association with coagulopathy.<sup>3,4</sup> Bellosta et al.,<sup>5</sup> who conducted an observational study of 20 patients infected by COVID-19 and treated for acute lower limb ischaemia, suggested a higher incidence of acute limb ischaemia in COVID-19 positive patients. The literature strongly supports a link between severe COVID-19 and coagulopathy.<sup>3-6</sup> Our patient had coagulopathy abnormalities similar to DIC but no antiphospholipid antibodies. It is likely that the distal arteriopathy of our patient played an important role in the severity of the clinical evolution.

In contrast to such severe lesions, acrosyndromes consisting of acral eruptions of erythematous-violaceous papules and macules, with possible bullous evolution, or digital swelling localized on the feet, hands or both reported as chilblain lesions have been reported in non-severe or paucisymptomatic patients.<sup>7-9</sup>


This observation led authors such as Suarez-Valle et al.<sup>9</sup> to conclude that « there is a continuum spectrum related to acro-ischaemic lesions, ranging from mild chilblain-like lesions to dry gangrene». However, we postulate that these lesions are not a continuum but are distinct in one important point. Both Chilblain-like and acro-ischaemic lesions share a vasculitis. Indeed, Varga et al.<sup>10</sup> demonstrated that COVID 19 could cause viral endotheliitis. However, acro-ischaemic lesions are the consequence of the malignant synergy of the vasculitis and severe coagulopathy.

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### Conflicts of interest

This manuscript has not been published and is not under consideration for publication elsewhere. We have no conflicts of interest to disclose.

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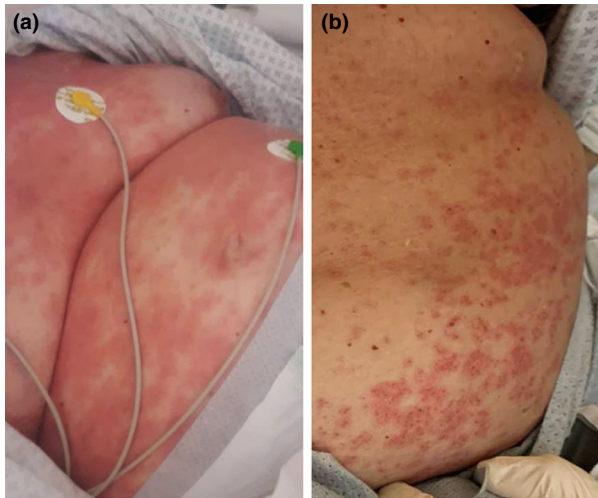
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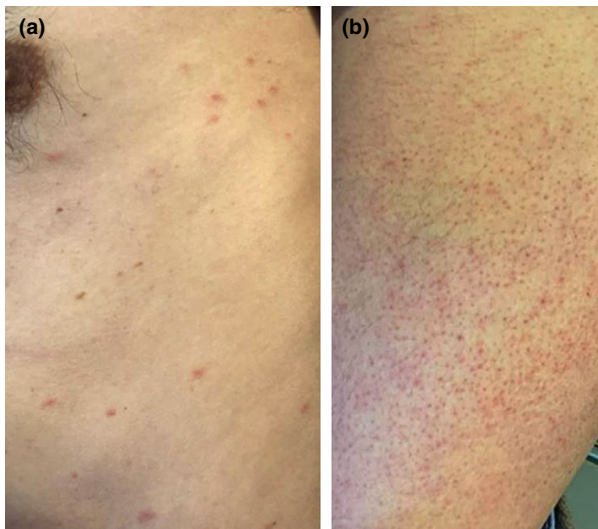
## Cutaneous involvement during COVID-19 pandemic: an emerging sign of infection

Dear Editor

Since December 2019, SARS-CoV-2 epidemic has spread all over the world.<sup>1</sup> To date, few reports regarding the cutaneous involvement in COVID-19 have been published.<sup>2,3</sup> Herein, we report a four cases series describing skin lesions probably related with COVID-19. The case 1 was a 66-year-old Caucasian female with a history of hypertension and dyslipidaemia. When hospitalized, she showed fever, nasal congestion and pneumonia symptoms. A chest TC displayed bilateral interstitial lungs' involvement and a nasopharyngeal swab confirmed SARS-CoV-2 infection. At day 6 of hospitalization, an asymptomatic erythematous pomphoid skin rash occurred on the trunk (Fig. 1a). The case 2 was a 60-year-old Caucasian female tested positive for SARS-CoV-2. A chest TC confirmed lungs' involvement. Patient's comorbidities were diabetes and hypertension. When hospitalized, systemic symptoms included headache, fever, nasal congestion and cough. At day 9 of hospitalization, the patient referred abdomen pruritus. After 24 h,



**Figure 1** Skin manifestations in COVID-19 patients: a pomphoid skin rash confined to the trunk (Case 1) (a) and an erythematous rash composed by vesicles and crusts localized exclusively at the abdomen (Case 2) (b).



**Figure 2** Skin manifestations in COVID-19 patients: an erythematous rash with papules and vesicles localized at trunk (Case 3) (a) and urticarial erythematous lesions at legs (Case 4) (b).

an erythematous rash with vesicles and crusts developed on the abdomen (Fig. 1b). The case 3 was a 30-year-old Caucasian male in home quarantine due to a contact with a COVID-19 confirmed case, which consulted our dermatological clinic through tele-dermatology services<sup>4</sup> for the onset of a cutaneous rash. After 2 days of fever, pruritic erythematous

papules and vesicles had developed on the trunk. The lesions resolved spontaneously in 10 days (Fig. 2a). The case 4 was a 30-year-old Caucasian male, in home isolation, which showed fever and cough as first symptoms. After 3 days, a tele-dermatological consultation was requested for the onset of a skin rash localized at legs. The rash consisted in urticarial lesions associated with a moderate pruritus. A nasopharyngeal swab confirmed SARS-CoV-2 infection (Fig. 2b).

Recalcati *et al.*<sup>2</sup> described three main cutaneous patterns in COVID-19 patients: erythematous rash, urticaria and chickenpox-like lesions, with the trunk as the most frequent localization. Our cases showed a strictly similitude, with the erythematous rash as the most frequent pattern, followed by urticarial lesions. All our patients developed cutaneous manifestations after the onset of systemic symptoms and tested positive for COVID-19, except one case in which the symptoms were strongly suggestive for SARS-CoV-2 infection. No correlation between skin manifestations and severity of systemic symptoms was found (only two patients were hospitalized). The two hospitalized cases were both treated with hydroxychloroquine, anti-interleukin-6 and anti-viral drugs. While no biopsy was performed, we cannot exclude that these manifestations could be drug-induced. As previously reported,<sup>2</sup> we hypothesize that skin manifestations occurring during COVID-19 are similar to other paraviral exanthems. Even if pathogenesis is unknown, cutaneous lesions may not result from a direct viral cytopathogenic effect, but reflect the host's response to the presence of SARS-CoV-2 within the skin.<sup>5</sup> This hypothesis would explain the variability of the cutaneous manifestations observed. On the other hand, a state of hypercoagulability could be responsible for other cutaneous patterns, including petechial rash, acro-ischæmic lesions such as finger/toe-cyanosis, bulla and dry gangrene and livedo reticularis.<sup>3,6-9</sup> In the whole of the cases actually reported, no drugs have been suggested for the treatment of skin manifestations. We propose the use of topical corticosteroids rather than systemic ones, in order to reduce the possible systemic side effects, such as an increased viral shedding in the initial infection phases.<sup>10</sup> Antihistaminic drugs could be used for pruritus.

Cutaneous lesions generally appear after systemic symptoms, but we cannot exclude the possibility of skin manifestations as first sign of COVID-19. In this context, dermatologists should play a key role for the early detection of asymptomatic patients which could show cutaneous lesions also as unique clinical expression of COVID-19. More studies on clinical-histopathological correlations are needed to understand the pathogenesis of cutaneous involvement in COVID-19.

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

### Conflicts of interest





None declared. None of the contributing authors have any conflict of interest, including specific financial interests of relationships and affiliation relevant to the subject matter or discussed materials in the manuscript.

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### Statement of ethics

Informed consent for the study and for the publication of the photographs was obtained from the patients. The study complied with the Declaration of Helsinki.

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## Compliance, safety concerns and anxiety in patients treated with biologics for psoriasis during the COVID-19 pandemic national lockdown: a multicenter study in the Czech Republic

Editor

Patient concerns about the possible increased susceptibility to coronavirus disease 19 (COVID-19) infection or a more severe course of the disease when treated with immunosuppressive therapy may lead to lower treatment compliance.<sup>1,2</sup>

For this study, all psoriasis patients with a scheduled visit at two university dermatology departments in Prague, Czech Republic during the national lockdown (16 March to 24 April) due to the COVID-19 were enrolled. At the time of the study, the number of confirmed COVID-19 cases in Prague increased from 116 (8.4 cases per 100 000 inhabitants) to 1668 cases (122 cases per 100 000 inhabitants). Patients completed a standardized Hospital Anxiety and Depression Scale (HADS) questionnaire; only the anxiety subscale was used (HADS-A). The presence of anxiety was defined as a HADS-A score of  $\geq 8$ .<sup>3</sup> The participants were asked to reply to the following statement: 'I feel an increased risk of infection (complications) from coronavirus (COVID-19) because of the type of treatment for my psoriasis'. Patients were advised to discontinue treatment only if they showed symptoms of COVID-19 or were in high-risk contact with a confirmed case of COVID-19. Statistical analysis was performed using SPSS v24.0 (SPSS Inc., Chicago, IL).

In total, all 210 patients complied with the inclusion criteria and agreed to participate in the study: 117 (55.7%) patients on biologics, 47 (22.4%) on conventional immunosuppressive therapy and 46 (21.9%) on topical therapy. Demographic and clinical characteristics of the patients in the three study groups were similar (Table 1). None patient on biologics and only 4.3% (2/47) on conventional immunosuppressants discontinued therapy because of concerns about their treatment and COVID-19 infection.

The distribution of patients regarding an anxiety score (HADS-A) of  $\geq 8$  was 24.8% for patients on biologics, 19.1% on conventional systemic and only 6.5% on topical therapy. The prevalence of anxiety in patients on biologics was similar to patients on conventional systemics (OR = 1.39, 95% CI, 0.60–3.22,  $P = 0.54$ ) but significantly higher than in patients on topical therapy (OR = 4.72, 95% CI, 1.36–16.38,  $P < 0.01$ ). The average anxiety score was slightly higher ( $P = 0.61$ ) in the biologics group (OR = 5.34, 95% CI, 4.59–6.09) than in the conventional systemic group (OR = 4.98, 95% CI, 3.77–6.19) and