Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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~0.1% sodium hypochlorite can be made by a roughly 1:50 dilution of household bleach (~5.25% to 6% sodium hypochlorite) in tap water. Although the Kampf et al analysis is a combination of non–COVID-19 studies, we expect the proposed formulation to similarly also disinfect surfaces of the novel coronavirus. The Centers for Disease Control and Prevention (CDC) also recommends an approximately 1:50 dilution to disinfect COVID-19, explicitly noting 5 tablespoons (one-third cup) bleach per gallon of water or 4 teaspoons bleach per quart of water.4

Different dilutions of sodium hypochlorite can vary in their in vivo fibroblast and keratinocyte cytotoxicity; however, dilutions of ~0.1% sodium hypochlorite are clinically effective with minimal irritation or sensitization.5 One should be mindful that corrosive injury on mucous membrane/skin contact is possible with excess volumes or mishandling, so appropriate caution and moderation is necessary.3 This solution should ideally be used within 1 month of preparation and stored in a closed, opaque container at room temperature.7

While the exact viral load on inanimate surfaces is unknown during an outbreak, it is critical to disinfect frequently touched surfaces.1 With rapidly diminishing availability of commercial cleaning supplies, simple diluted bleach, which is readily available, can effectively disinfect our clinics, homes, and environment to prevent sustained transmission from inanimate objects. As with many disinfectants, minimizing long-term skin contact and ensuring good ventilation can minimize clinical toxicity. In Henry Dakin’s spirit, we should strive to share with our colleagues the cost-effective, accessible, and relatively safe power of diluted bleach.

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Varicella-like exanthem as a specific COVID-19—associated skin manifestation: Multicenter case series of 22 patients

To the Editor: COVID-19, an infection due to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that may cause interstitial pneumonia and respiratory failure, has currently taken on pandemic proportions.1 The COVID-19 outbreak emerged in Wuhan, China, and rapidly spread to Europe, particularly to Italy,2 where, as of April 27, 2020, a total of 199,414 people have tested positive.3

Two recent publications have brought attention to COVID-19—associated cutaneous manifestations.4,5 Joob and Wiwanitkit4 reported on a dengue-like petechial rash in a patient with COVID-19 from Thailand. Recalcati5 described 18 out of 88 patients with COVID-19 hospitalized in Lecco Hospital (Lombardy region, Italy) who developed erythematous rash (n = 14), widespread urticaria (n = 3), or varicella-like vesicles (n = 1).

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Table I. Demographic and clinical data of patients with varicella-like exanthem associated with COVID-19

| ID | Sex | Age, years | Hometown | Systemic symptoms’ onset | Positive result on nasopharyngeal swab | Skin lesions | Skin symptoms | Latency time, days | Duration, days | Localization | Systemic symptoms | Negative result on nasopharyngeal swab | Course |
|----|-----|------------|----------|--------------------------|----------------------------------------|-------------|--------------|-----------------|----------------|--------------|----------------|----------------------------------------|--------|
| 1  | M   | 75         | Rome     | February 19, 2020         | March 4, 2020                          | Diffuse papulovesicular lesions (predominance of papules) | No itching  | 12              | 5               | Trunk         | Fever, asthenia, hypogeusia, hyposmia | Yes    | Resolution |
| 2  | M   | 57         | Milan    | February 20, 2020         | February 22, 2020                      | Diffuse papulovesicular lesions (predominance of vesicles) | Mild itching | 5               | 4               | Trunk         | Fever, cough, coryza, headache, hyposmia, hyposmia | Yes    | Resolution |
| 3  | M   | 59         | Milan    | February 28, 2020         | March 2, 2020                          | Scattered papulovesicular lesions (predominance of papules) | Mild itching | 7               | 15              | Trunk         | Fever, cough, pharyngodynia, headache, weakness | Yes    | Resolution |
| 4  | F   | 56         | Brescia  | February 28, 2020         | March 2, 2020                          | Scattered papulovesicular lesions (predominance of vesicles) | Pain        | 3               | 15              | Trunk         | Fever, cough, coryza, headache, weakness | Yes    | Resolution |
| 5  | M   | 28         | Bologna  | March 1, 2020             | March 10, 2020                         | Diffuse papulovesicular lesions started (predominance of papules) | Itching     | 4               | 7               | Trunk         | Fever, cough | Yes    | Resolution |
| 6  | M   | 45         | Biella   | March 1, 2020             | March 6, 2020                          | Scattered papulovesicular lesions (predominance of papules) | No itching  | 6               | 10              | Trunk         | Fever, diarrhea, nausea | Yes    | Resolution |
| 7  | M   | 72         | Brescia  | March 1, 2020             | March 14, 2020                         | Scattered papulovesicular lesions (predominance of vesicles) | No itching  | Unknown NA      | Trunk, limbs | Fever, cough, coryza, headache, dyspnea | No     | Active disease |

Continued
| ID | Sex | Age, years | Hometown | Systemic symptoms' onset | Positive result on nasopharyngeal swab | Skin symptoms | Latency time, days | Duration, days | Localization | Skin symptoms | Latency time, days | Duration, days | Localization | Systemic symptoms | Negative result on nasopharyngeal swab | Course |
|----|-----|------------|----------|--------------------------|----------------------------------------|--------------|------------------|----------------|---------------|--------------|-----------------|----------------|---------------|------------------|----------------------------------------|--------|
| 8  | M   | 83         | Cremona  | March 2, 2020            | March 10, 2020                          | Scattered papulovesicular lesions (predominance of vesicles) | No itching   | 2               | 5             | Trunk        | Fever, dyspnea | No             | Active disease* |
| 9  | M   | 61         | Milan    | March 2, 2020            | March 5, 2020                           | Diffuse papulovesicular lesions (predominance of vesicles) | Mild itching | 2               | 4             | Trunk        | Fever, cough, dyspnea, coryza, headache, weakness | No     | Death         |
| 10 | M   | 29         | Brescia  | March 3, 2020            | March 10, 2020                          | Scattered papulovesicular lesions (predominance of vesicles) | Mild itching | 1               | 12            | Trunk        | Fever, cough, weakness | Yes    | Resolution    |
| 11 | M   | 65         | Brescia  | March 3, 2020            | March 16, 2020                          | Scattered papulovesicular lesions (predominance of papules) | Burning      | 2               | 13            | Trunk        | Fever, cough, dyspnea, coryza, headache, weakness | No     | Active disease |
| 12 | M   | 44         | Brescia  | March 8, 2020            | March 16, 2020                          | Scattered papulovesicular lesions (predominance of vesicles) | Burning, itching | 3               | 8             | Trunk        | Fever, cough, coryza, headache, weakness | No     | Resolution    |
| 13 | M   | 75         | Cremona  | March 8, 2020            | March 16, 2020                          | Scattered vesicular lesions (predominance of vesicles) | No itching   | 0               | 8             | Trunk, limbs | Fever, dyspnea | No             | Death          |
| 14 | F   | 51         | Brescia  | March 8, 2020            | March 17, 2020                          | Scattered papulovesicular lesions (predominance of vesicles) | Pain         | 4               | 8             | Trunk        | Fever, cough, dyspnea, coryza, headache, weakness | No     | Active disease |
| 15 | F   | 62         | Brescia  | March 9, 2020            | March 18, 2020                          | Scattered papulovesicular lesions (predominance of vesicles) | Burning      | 2               | 11            | Trunk        | Fever, cough, coryza, headache, weakness | No     | Improvement   |
| ID | Age | Sex | Location | Date | Lesion Type | Itching | Lesion Count | Location | Symptoms | Resolution |
|----|-----|-----|----------|------|-------------|---------|-------------|---------|----------|------------|
| 16 | 25  | M   | Siena    | Mar. 10, 2020 | Diffuse papulovesicular lesions (predominance of vesicles) | Itching | 5           | Trunk, limbs | Cough, hyposmia, hypogeusia | No Resolution |
| 17 | 90  | F   | Cremona  | Mar. 12, 2020 | Scattered papulovesicular lesions (predominance of vesicles) | No itching | 1           | Trunk | Fever, cough, dyspnea, coryza, headache, weakness | No Active disease |
| 18 | 69  | F   | Brescia  | Mar. 12, 2020 | Scattered papulovesicular lesions (predominance of papules) | No itching | Unknown | Trunk | Fever, cough, dyspnea, coryza, hyposmia, hypogeusia, headache, weakness | No Active disease |
| 19 | 65  | M   | Naples   | Mar. 13, 2020 | Diffuse papulovesicular lesions (predominance of papules) | Mild itching | -2          | Trunk | Fever, cough | No Improvement |
| 20 | 80  | M   | Brescia  | Mar. 14, 2020 | Scattered papulovesicular lesions (predominance of vesicles) | No itching | Unknown | Trunk, limbs | Fever, dyspnea | // Death |
| 21 | 43  | M   | Milan    | Mar. 15, 2020 | Scattered papulovesicular lesions (predominance of vesicles) | Mild itching | 0           | Trunk | Fever, myalgia | No Active disease |
| 22 | 8   | F   | Milan    | Mar. 15, 2020 | Scattered papulovesicular lesions (predominance of papules) | No itching | 3           | Trunk | Fever, cough | No Resolution |

F, Female; ID, identification; M, male; NA, not available; //, not applicable.
*Patient with acute respiratory distress symptoms in intensive care unit.
During the Italian outbreak, we have observed a varicella-like papulovesicular exanthem as a rare but specific COVID-19-associated skin manifestation. Eight Italian dermatology units collected clinical data from patients with COVID-19 (microbiologically proven by nasopharyngeal swab) and no history of new medications in the previous 15 days who developed varicella-like lesions.

Demographic and clinical features of the 22 patients are summarized in Table I. The median age was 60 years, and 72.7% of patients (n = 16/22) were male. Most patients (n = 17/22; 77.3%) came from Lombardy, currently the worst-hit region in Italy, and the remaining patients came from Piedmont (n = 1), Emilia-Romagna (n = 1), Toscana (n = 1), Lazio (n = 1), and Campania (n = 1). The median latency time from systemic symptoms to exanthem was 3 days (range, -2 to 12 days). The median duration of skin manifestations was 8 days (range, 4-15 days). Lesions were scattered in most patients (n = 16; 72.7%), and they were diffuse in 6 (27.3%) patients. Predominance of vesicles was observed in 12 (54.5%) patients. No variations in the papulovesicular presentation were observed in our case series. The trunk was always involved, in some cases in association with the limbs (n = 4; 18.2%) (Fig 1, A-D). No facial or mucosal involvements were scored. Itching, which was generally mild, was reported in 9 (40.9%) patients. In all patients who underwent skin biopsy (n = 7), histologic findings were consistent with viral infection (Fig 1, E and F).

The most common systemic symptom was fever (n = 21/22; 95.5%), followed by cough (n = 16; 72.7%), headache (n = 11; 50%), weakness (n = 11; 50%), coryza (n = 10; 45.5%), dyspnea (n = 9; 40.9%), hyposmia (n = 4; 18.2%), hypogeusia (n = 4; 18.2%), pharyngodynia (n = 1; 4.5%), diarrhea (n = 1; 4.5%), and myalgia (n = 1; 4.5%). Death occurred in 3 (13.6%) patients.

Ours is the first series on this varicella-like exanthem as a specific COVID-19-associated cutaneous picture, unlike the nonspecific cutaneous manifestations such as erythematous rash or urticaria reported by Recalcati.5 Its typical features are frequent trunk involvement, usually scattered distribution, and mild/absent pruritus, the latter being in line with most viral exanthems but unlike true...
varicella. Lesions generally appear 3 days after systemic symptoms and disappear by 8 days, without leaving scarring. A limitation of our study was missing histologic evaluation in some cases. Moreover, demonstration of SARS-CoV-2 presence by polymerase chain reaction in lesional skin was not possible because of specific primer unavailability. If further studies validate our findings, this early skin manifestation will represent a useful clue for suspecting COVID-19 in asymptomatic/paucisymptomatic patients.

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Risk of hospitalization and death from COVID-19 infection in patients with chronic plaque psoriasis receiving a biologic treatment and renal transplant recipients in maintenance immunosuppressive treatment

To the Editor: There is uncertainty concerning the outcome of COVID-19 infection in patients receiving systemic therapies such as biologics and immunosuppressive drugs. Whether biologics for psoriasis should be interrupted for preventing severe complications of COVID-19 infection is debated.

We performed a retrospective observational study to determine whether patients with chronic plaque psoriasis on biologic or other immunosuppressive therapy and patients who had received a renal transplant had a higher risk of hospitalization or death from COVID-19 infection compared with the general population of Verona during the observation period from February 20 to April 10, 2020. Inclusion criteria for patients with psoriasis and transplant were being regularly monitored at the Division of Dermatology and Nephrology of the Azienda Ospedaliera Universitaria Integrata Verona, respectively, being treated with a biologic or immunosuppressive medication, and being a resident in Verona. Data were obtained by consulting the electronic

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