

# Hydroxychloroquine-Induced Psoriasis-form Erythroderma in a Patient with Systemic Lupus Erythematosus

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To the Editor: Hydroxychloroquine (HCQ) is commonly used in systemic lupus erythematosus (SLE), rheumatoid arthritis, and other autoimmune disorders. We report a case of psoriasis-form erythroderma induced by HCQ in an SLE patient. Thus, rheumatologists and dermatologists should be aware of the possibility of HCQ-induced psoriasis-form lesions.

A 41-year-old woman was admitted to our clinic with new onset SLE. There was no history of psoriasis in the patient or her immediate family. She was prescribed HCQ (200 mg twice daily) and prednisone (30 mg once daily). After 2 months of treatment, the patient presented with diffuse erythema and scaling involving the entire body, HCQ was withdrawn, and prednisone was increased to 60 mg once daily. Physical examination showed erythroderma involving approximately 100% of her body surface area with a Psoriasis Area and Severity Index score of 61.2 [Figure 1a and 1b]. The toenails were yellow and showed hyperkeratosis with thickened nail plates [Figure 1c]. Laboratory findings showed leukocytosis (white blood cell [WBC] count  $19.97 \times 10^9/L$  with  $16.42 \times 10^9/L$  neutrophil granulocytes), hemoglobin 12.4 g/dl, platelet count  $525 \times 10^9/L$ , alanine aminotransferase 43 U/L, aspartate aminotransferase 21 U/L, hs-CRP 52.05 mg/L, ESR 36 mm/h, and PCT 0.5 ng/ml. Antinuclear antibody (+1:320), anti-Rib, and anti-histone antibodies were positive. Alopecia, decreased WBC ( $3.3 \times 10^9/L$ ), C3 (0.896 g/L), and C4 (0.093 g/L), and positive urinary protein had appeared over the course of the disease. Histopathologic findings revealed parakeratosis, acanthosis cell layer thickening, irregular elongation of rete ridges, dilated dermal blood vessels, and perivascular lymphomonocytic infiltration in the dermis [Figure 1d]. This patient had no previous history of psoriasis; lesions appeared after HCQ was given and receded when HCQ withdrawn. Punch biopsy showed psoriasis-form dermatitis, and a diagnosis of erythrodermic psoriasis was established. The patient was started on tripterygium glycoside (20 mg three times daily) and showed improvement of skin lesions within 2 weeks.

Psoriasis is a chronic inflammatory skin disease most commonly characterized by well-demarcated, erythematous plaques with silvery scales. Common drugs used to treat psoriasis include lithium, antimalarials, beta blockers, and others. HCQ is an antimalarial agent. The reported effects of antimalarials include antimicrobial, antithrombotic, metabolic and cardiovascular,

antineoplastic, and others. The main adverse effects of HCQ include retinopathy, cardiomyopathy, pigmentation changes, and aplastic anemia. Case studies have reported a possible association between HCQ and the induction or exacerbation of psoriasis. HCQ accumulates in varying concentrations in different tissues. High concentrations are found in eye, skin, cardiac tissues, and so on.<sup>[1]</sup> These high concentrations may play a crucial role in the development of HCQ-induced psoriasis-form erythroderma.

Clinically, it is difficult to discern the difference between HCQ-induced psoriasis-like erythroderma and drug-induced hypersensitivity. Drug-induced hypersensitivity has more eosinophil infiltration, and the exfoliation of the epidermis is more intense compared with psoriasis-like erythroderma. Our patient was characterized by erythroderma with large scales, no Beau's line, and pathological lack of eosinophils. Therefore, we believed the patient had HCQ-induced psoriasis-form erythroderma.<sup>[2]</sup>

The coexistence of psoriasis and SLE is very uncommon and needs specific therapeutic solutions. A single-center experience showed that the prevalence of psoriasis in SLE was twice as high as that of the general Canadian population.<sup>[3]</sup> Previous studies revealed that psoriasis and SLE share two SNPs (rs8016947 and rs4649203) and both results in elevated levels of interleukin (IL)-17, IL-23, and IL-12.<sup>[4,5]</sup> Herein, we present a case of HCQ related psoriasis-form erythroderma in a patient with SLE. HCQ is a commonly used agent for dermatologic and rheumatologic conditions. HCQ may induce or exacerbate the psoriasis. Withdrawal of systemic corticosteroids raises the risk of severe psoriasis relapse. Tripterygium glycoside is widely used in the treatment of psoriasis, SLE, and other inflammatory conditions. We treated this patient with tripterygium glycoside, which resulted in improvement of skin lesions.

This case demonstrates that HCQ should be added to the list of medications that potentially induce psoriasis-form erythroderma.

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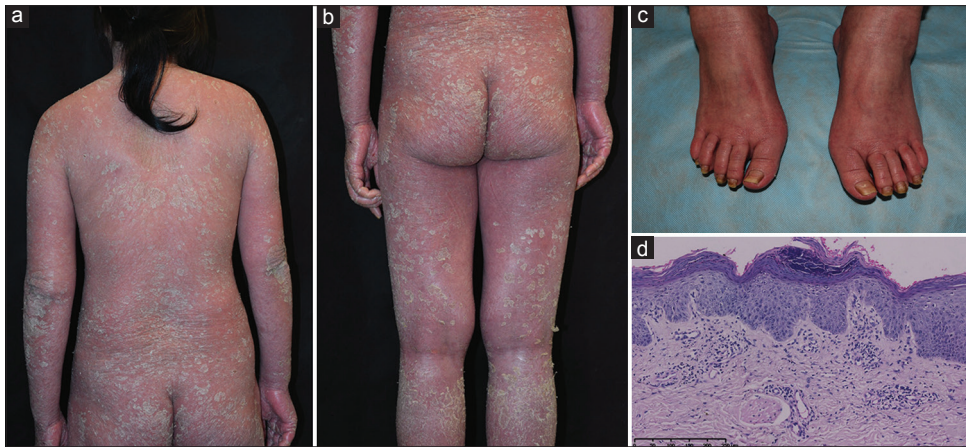
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**Figure 1:** Clinical and histopathology characteristics. (a and b) Erythema on approximately 100% body surface area. (c) Toenails were yellow and showed hyperkeratosis with thickened nail plates. (d) Parakeratosis, acanthosis cell layer thickening, irregular elongation of rete ridges, dilated dermal blood vessels, and perivascular lymphomonocytic infiltrations in the dermis (H and E).

### Declaration of patient consent

All appropriate patient consent forms were obtained, the patient gave consent for images and other clinical information to be reported. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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