

LETTER

Exacerbation of psoriasis following hydroxychloroquine in a patient with suspected COVID-19

Dear Editor,

The World Health Organization identified a novel coronavirus in city of Wuhan in China that caused diseases of COVID-19. The virus spread very quickly and has to date resulted in the deaths of thousands of people. Hydroxychloroquine (HCQ) has recently entered into clinical use the treatment of COVID-19 effect, both by inhibiting the viral entry into the cell and in the following stage.¹ HCQ is a drug with multiple effects that has long been in use for its antimalarial and anti-rheumatic features.² Previous studies have reported several dermatological side effects of HCQ, including drug eruption, pruritus, psoriasis, and alopecia.³ Psoriasis is a chronic and systemic inflammatory skin disease with multiple comorbidities that can be induced or exacerbated by several drugs, including HCQ, which is a synthetic antimalarial drug.⁴

We present here a case of psoriasis in a suspected COVID-19 patient that exacerbated following HCQ treatment, and that was treated successfully and rapidly with the IL-12/IL-23 inhibitor. To the best of our knowledge, this is the second case of psoriasis exacerbation following HCQ treatment for suspected COVID-19 to be reported on since the outbreak.

A 40-year-old male patient presented with a diffuse rash, pruritus and joint pain that had been increasing for 20 days. It was ascertained that the patient had presented at the hospital approximately 1 month previously with fever, cough and sore throat, when blood tests, lung tomography, and polymerase chain reaction (PCR) tests were requested due to suspicions of COVID-19 infection. An initial assessment revealed lesions consistent with COVID-19 infection on a lung tomography, and so treatment with azithromycin 500 mg daily and

HCQ 200 mg BID was initiated. After a few days of treatment, the patient's rash and pruritus increased in severity and spread further. The lung tomography was considered consistent with lobar pneumonia, and PCR tests at 3-day intervals were negative. The patient was hospitalized due to suspected COVID-19, and was discharged after treatment. This patient was not evaluated as a COVID-19 infection.

He had plaque psoriasis with occasional exacerbation since the age of 10 years. A dermatological examination revealed very diffuse, very thick, erythematous plaque with squamiae on the upper, and lower extremities, and the trunk (Figure 1A-C). After treatment with subcutaneous (sc) ustekinumab 90 mg was initiated, the lesions were observed to have regressed distinctively at the follow-up visit 1 month later (Figure 2A-C).

HCQ may result in the exacerbation, relapse or induction of psoriasis.⁵ A recent case report featuring a 71-year-old patient with psoriasis, who was diagnosed with COVID-19 and underwent 4-day HCQ treatment, experienced disease exacerbation with psoriatic plaque.⁶

There have been several mechanisms suggested for hydroxychloroquine to cause psoriasis, as (a) the stimulation of hyperproliferation and irregular keratinization in epidermal cells following the inhibition of epidermal transglutaminase, (b) keratinocyte growth and differentiation upon increased IL-17, IL-23, and (c) overproduction of TNF- α .^{5,7}

Infections also play a major role in the etiopathogenesis of psoriasis. COVID-19 or lobar pneumonia may cause cytokine dysregulations and trigger the exacerbation of psoriasis. Whether the triggering factor of psoriasis in this case is mainly related to the presence of infection cannot be ignored. Increased stress upon learning of the



FIGURE 1 A-C, Erythematous plaque with squamiae on the upper and lower extremities and the trunk



FIGURE 2 A-C, The lesions were observed to have regressed distinctly at the follow-up visit 1 month later

COVID-19 diagnosis—a fatal disease—may have contributed to the trigger. We did not find any reports that azithromycin may exacerbate psoriasis.⁸ There were no reports of any severe cases of COVID-19 infection linked to biological agents, and we administered ustekinumab 90 mg sc to our patient effectively.⁹

Further studies will guide whether hydroxychloroquine is indeed a single trigger or initiator in the etiopathogenesis of psoriasis.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data is available upon request.

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