

LETTER TO THE EDITOR

# Yellow-white fluorescence on the nails: A novel finding of Favipiravir used for the treatment of COVID-19

To the Editor,

The 2019 novel coronavirus (COVID-19) is spreading rapidly worldwide leading to high morbidity and mortality. To date, a variety of cutaneous findings have been identified related with COVID-19, but nail findings

due to the COVID-19 or to the medications have scarcely been reported. Herein, we present the Wood's lamp examination findings of nails in four polymerase chain reaction (PCR) test proven COVID-19 patients, thus emphasizing that nail findings might be more common than expected.

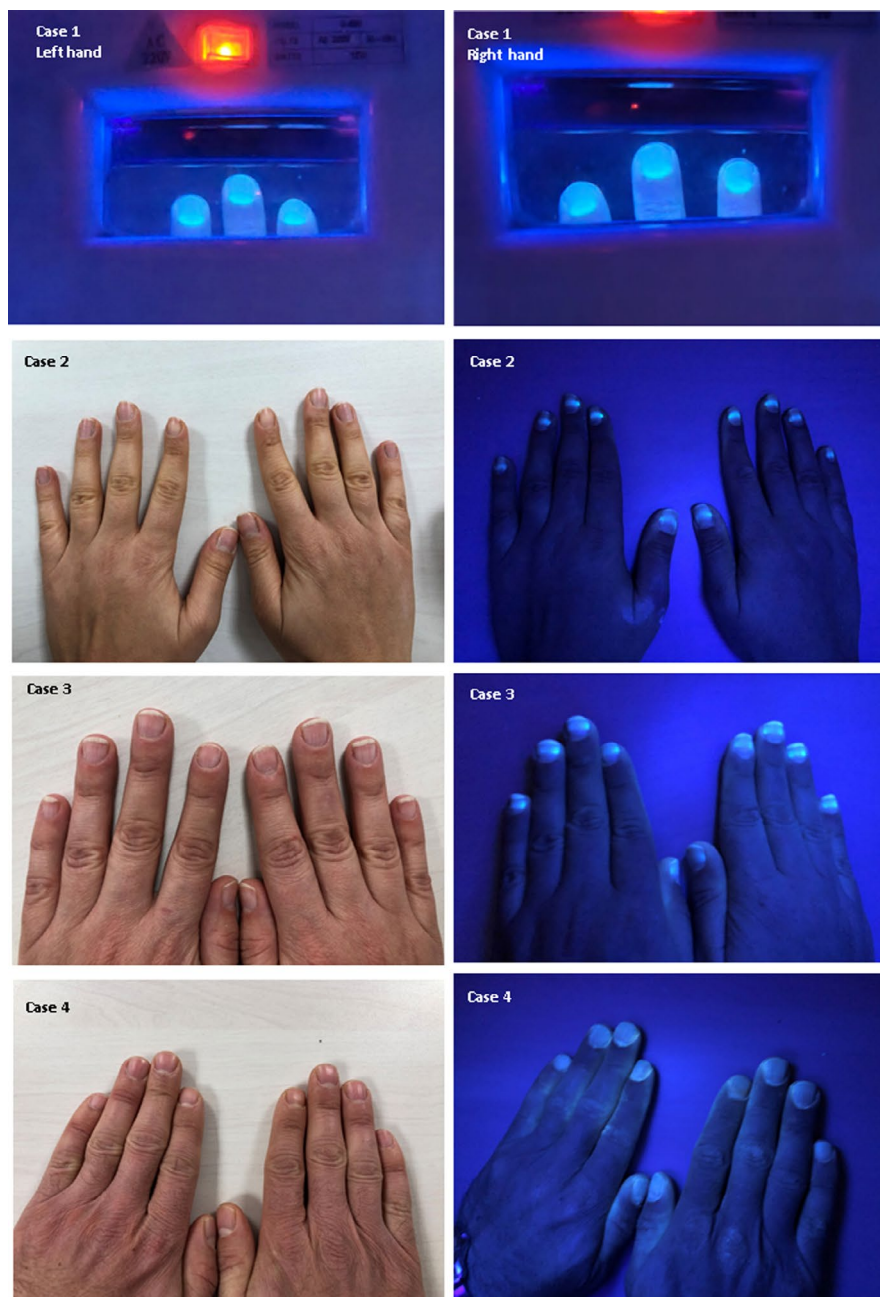


FIGURE 1 Naked-eye and Wood's lamp examination findings of cases

The first case (Case 1) is a 46-year-old man. He had been taking colchicine tablets for familial mediterranean fever for sixteen years. He was diagnosed with COVID-19 one month ago and was started to favipiravir therapy with a dose of 1.6 g twice daily on day 1, followed by 600 mg twice daily for a total duration of 5 days. In addition to favipiravir, he took hydroxychloroquine sulfate with a dose of 200 mg, twice a day, for 5 days. He did not have any nail findings on the naked eye examination but Wood's lamp examination showed yellow-white fluorescence on his proximal fingernails (Figure 1).

The second case (Case 2) is a 26-year-old, healthy woman with a history of COVID-19 three months ago. Oral contraceptive pills were in her drug history. For the treatment of COVID-19, she took only favipiravir with the same dose and duration. Yellow-white fluorescent transverse bands were also detected on the middle of her fingernails, as well. (Figure 1).

The third case (Case 3) is a 32-year-old woman who had COVID-19 two months ago. Favipiravir was given with the same protocol. He was injected enoxaparin sodium with a dose of 40 mg for one month, additionally. Yellow-white fluorescent transverse bands were observed on the middle of her fingernails (Figure 1).



The last case (Case 4) is a 38-year-old man with a history of vitiligo. He had COVID-19 two months ago and recovered without any systemic therapy. No any fluorescence was seen on his fingernails by Wood's lamp examination (Figure 1).

As nail manifestation of COVID-19, only transversal red bands and Beau lines were reported in the literature to date.<sup>1-3</sup> No yellow-white fluorescence has been identified on the nails of the patients after COVID-19 yet.<sup>1</sup> We did not observed yellow-white fluorescence on the nails of the last case who had not taken hydroxychloroquine sulfate nor favipiravir for COVID-19 before. This finding may support that the yellow-white fluorescence of the nails is likely due to medications used for the treatment rather than the disease, itself.

Keratinic matrices such as finger- and toenails are important resources for detection of drugs. Although the deposition of some drugs cannot be detected easily on the naked eye examination, Wood's lamp examination might be helpful for the nail depositions.<sup>4</sup> The antimalarial drug, quinacrine hydrochloride, was reported to be detected on the nails under Wood's lamp examination by Kierland et al.<sup>5</sup> Due to the similar chemical structure of quinacrine

hydrochloride and hydroxychloroquine sulfate, we first suggested that the culprit drug is hydroxychloroquine sulfate. But patients who did not take hydroxychloroquine sulfate showed the same yellow-white fluorescence on their nails and this finding may support the role of favipiravir on the nail fluorescence.

Although we could not explain the exact mechanism, the yellow-white fluorescence observed in patients with COVID-19 was thought to be secondary to favipiravir. In addition to nail deposition, favipiravir might have undefined adverse effects related with the deposition of the drug in other organs. New studies are needed to clarify the adverse effects of favipiravir and patients should be monitored closely.

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<sup>1</sup>We detected yellow-white fluorescence in patients who had taken favipiravir for COVID-19. Favipiravir is a broad-spectrum antiviral agent which inhibit viral growth by targeting RNA polymerase of the virus. Despite the lack of double-blind randomized controlled studies which support the efficacy on COVID-19, favipiravir has been prescribed to all patients with COVID-19 in Turkey.