

## No evidence of increased risk for Coronavirus Disease 2019 (COVID-19) in patients treated with Dupilumab for atopic dermatitis in a high-epidemic area – Bergamo, Lombardy, Italy

Dear editor,

Atopic dermatitis (AD) is a chronic inflammatory skin disease. Patients with AD have increased infection risk, including skin infections and systemic infections. Dupilumab, a fully human monoclonal antibody, blocks the shared receptor component for interleukin-4 (IL-4) and IL-13. Dupilumab is approved for inadequately controlled moderate-to-severe AD.<sup>1</sup>

A meta-analysis recently investigated the risk of infection in atopic dermatitis patients receiving Dupilumab. This analysis pooled data from seven randomized, placebo-controlled Dupilumab trials in adults with moderate-to-severe AD. Dupilumab is associated with reduced risk of severe infections and non-herpetic skin infections and does not increase overall infection rates vs. placebo in patients with moderate-to-severe AD.<sup>2</sup>

A severe outbreak of coronavirus disease 2019 (COVID-19) emerged in China in December 2019 and then rapidly spread worldwide. The number of people with COVID-19 is now dramatically increasing in Italy, and, to date, it remains a severe urgent public health emergency.<sup>3</sup> The first documented case in our hospital (ASST Papa Giovanni XXIII, Bergamo Hospital) was identified on 21 February 2020.<sup>4</sup>

These days there is a significant amount of curiosity regarding the cutaneous manifestations COVID-19 related<sup>5</sup> and the implications that this infection could bring in about clinical dermatology practice and to patients in therapy.<sup>6,7</sup>

We have decided to advise patients treated with biological drugs to scrupulously comply with hygiene rules and protective devices use, to avoid crowded places, to maintain social distancing and not to spontaneously suspend ongoing therapy but to inform the dermatologist in case of the onset of symptoms as suggested by the Italian Society of Dermatologists (SIDEmaST)<sup>8</sup> and by the European Task Force on Atopic Dermatitis (ETFAD).<sup>9</sup> We report below our experience with patients treated with biological therapy for atopic dermatitis in Bergamo, an area of high epidemic for COVID-19.


Our patients being treated with Dupilumab are residents in the provinces of Bergamo ( $n = 25$ , 86.6%), Lecco ( $n = 2$ , 6.7%),

Brescia ( $n = 1$ , 3.3%), Monza-Brianza ( $n = 1$ , 3.3%), Sondrio ( $n = 1$ , 3.3%), Lombardy areas with a high incidence of COVID-19 infections.<sup>10</sup>

All patients ( $n = 30$ , 20 males, 10 females, mean age  $35.5 \pm 11.9$  years, range 19–54 years) were contacted by telephone or underwent a dermatological visit to the hospital, 40–45 days after the beginning of the spread of the coronavirus infection in the Bergamo area. None of the patients reported a coronavirus infection confirmed with nasal swab or serological tests. None of the patients reported contacting established cases (positive nasal swab test) of COVID-19 patients. None of the patients reported coming into contact with suspected, but not established, cases of COVID-19. No patient reported serious symptoms that required hospitalization. One patient (3.3%) reported mild respiratory flu-like symptoms resolved in 5 days. None of the patients developed or reported a worsening of the cutaneous clinical condition.

Based on our experience, we observed that it is essential to advise and empower patients on activities to limit the risk of infection (hand hygiene, social distancing, use of protective devices), to report any symptoms to the dermatologist. Fortunately, no cases of COVID-19 in Dupilumab patients have been observed despite the high risk of contagion area.

The mechanism of action of the drug, the average age of the patients and the data of the randomized studies seem to reassure about the COVID-19 infectious risk that patients on Dupilumab therapy may have. Further observations on a larger number of patients receiving Dupilumab are needed to investigate the risk of coronavirus infection.

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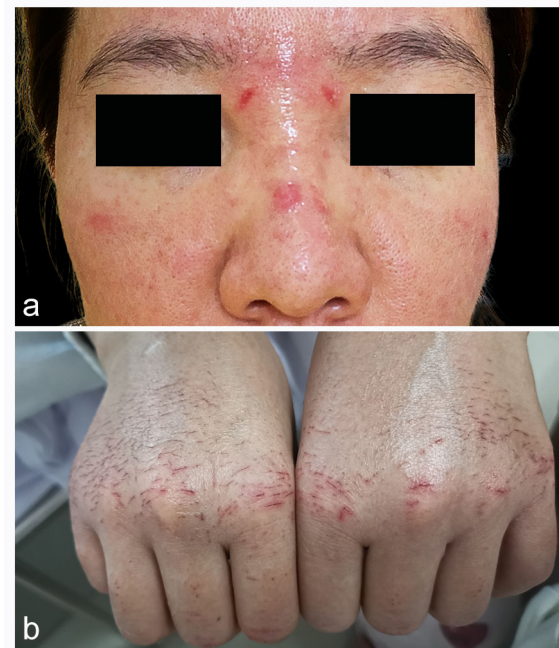
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**Figure 1** Skin lesions of healthcare workers treating patients with 2019 novel coronavirus disease Pneumonia: Erosions on the forehead, nasal bridge and zygomatic bone, after wearing medical masks and goggles working for 8 h (a). Rhagades and bleeding on dorsal aspects of hands with intense itching, after repeatedly washing and frequently using of alcohol and disinfectants (b).

## 2019 novel coronavirus disease epidemic: skin protection for healthcare workers must not be ignored

Dear Editor,

Since first reported in 2019, pneumonia associated with 2019 novel coronavirus disease (COVID-19) has rapidly developed into an outbreak across the world.<sup>1</sup> The number of patients of all age groups has increased significantly.<sup>2</sup> In order to curb the spread of the epidemic, thousands of healthcare workers (HCWs) have joined the front line of the fight against this highly contagious disease.<sup>3</sup> When taking care of patients with COVID-19 pneumonia, HCWs must first protect themselves by performing adequate hand hygiene and using protective equipment including medical mask, goggles/face shield, gown and gloves.<sup>4</sup> However, the wearing of these personal protective equipment (PPE) on a daily basis and the frequent use of hand disinfectants often cause skin problems, which could reduce their enthusiasm for overloaded work and make them anxious at all stages of the pandemic.

**Skin injuries caused by PPE.** N95 masks, goggles and face shields can squeeze and rub the cheek, forehead and nasal bridge, which may easily cause mechanical damage to the skin, leading to indentations, ecchymosis, maceration, abrasion and erosion (Fig. 1). Nasal bridge was the most commonly affected (83.1%).<sup>5</sup> If the ulceration is not properly managed, secondary infections may occur, opening a ‘window’ for virus invasion. Frequently disinfecting the hands and the wearing of latex gloves may result in pompholyx, presenting with blisters and itching. The long-time wearing of protective clothing may cause sweating, which can lead to dermatitis and folliculitis. Frequent use of shoe covers may also cause fungal infections of the feet. Skin injuries caused by PPE were significantly associated with frequency and time of medical devices wearing. For those in high-intensity protective gear, shorter rotating shifts would reduce the incidence of skin injuries.

**Skin injuries caused by disinfectants.** After exposure to fat-soluble disinfectants such as 75% alcohol, chlorine-based disinfectants, peroxyacetic acid and chloroform, HCWs may develop adverse reactions (e.g. allergic contact dermatitis). Because of the high infectivity of COVID-19,<sup>6</sup> the stressful HCWs may