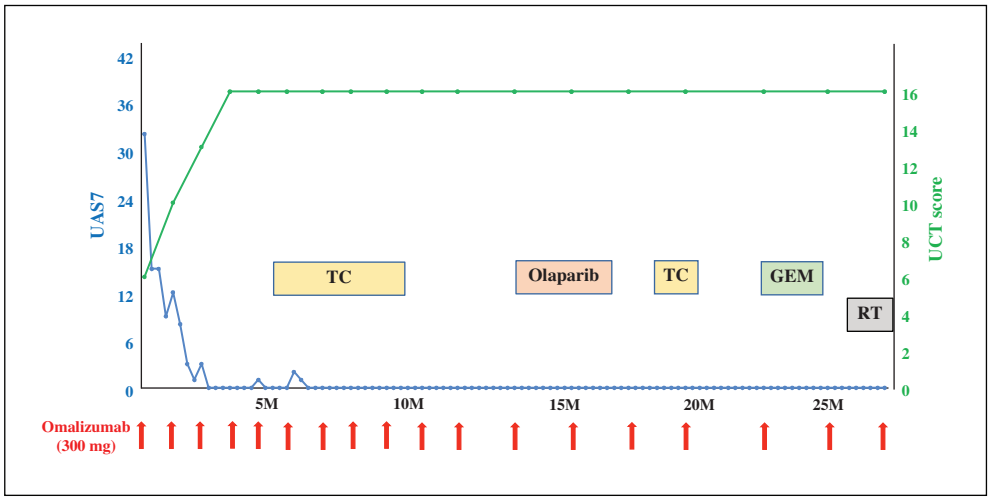

Figure 1. Clinical course of the patient. The green line represents the time course of UCT score. The blue line shows changes in UAS7 over time. The red arrows indicate administration of omalizumab (300 mg). Treatments for ovarian cancer are depicted in the rectangular boxes. TC: paclitaxel plus carboplatin; GEM: gemcitabine; RT: radiation therapy.

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A survey of psoriasis patients on biologics during COVID-19: a high-epidemic area experience – Franche Comté, France

With the emergence of the novel coronavirus disease (COVID-19) pandemic, there is uncertainty whether biologic agents for psoriasis may place patients at a higher

Table 1. Comparative data of psoriasis patients on biologics during COVID-19.

	Carugno *et al.* [4]	Burlando *et al.* [5]	Damiani *et al.* [6]	Gisondi *et al.* [7]	Fougerousse *et al.* [8]	Mahil *et al.* [9]	Present study
Country	Italy	Italy	Italy	Italy	France	International	France
Number of psoriasis patients	159	515	1193*	5206	1005	267	485
Biologic suspension (%)	5.6	5.2	UKN	UKN	UKN	UKN	6%
Psoriasis flare	UKN	1.7	UKN	UKN	UKN	UKN	3%
Suspected/confirmed COVID-19 (%)	18.2/0	2.5/0.04	0/1.4	UKN	3.2/0.8	57.7/42.3	6/0.2
Hospitalization/ICU° (%)	0.6/0	0/0	0.4/0	0.07/0	0.3/0.18	16.6/3.4	0/0
Death (%)	0	0	0	0	0	1.5	0

*UKN: unknown; ICU: intensive care unit.*1193 psoriasis patients treated with biologics and small molecules.*

risk of infection or a more severe disease course [1, 2]. We wish to share our experience in our region (France-Comté [FC]) located in the north east of France, one of the most severely affected by COVID-19.

On March 11th 2020, FC was designated as a "red zone" by the French authorities. During the following two weeks, we sent our patients, by regular mail, the national recommendations which advise to continue the use of biologics during the COVID-19 pandemic. Following this correspondence, we then telephoned all the patients affected by psoriasis and treated with biologic agents to collect data on the use of biologics and COVID-19. Patients with biologics introduced during the study period were excluded.

Five hundred and twenty patients followed in our department were called 60 to 65 days after the beginning of the coronavirus epidemic. Response was obtained from 485 patients (93% response rate). All patients who had any COVID-19 symptoms (colds and/or sore throat and/or flu or gastrointestinal symptoms) were asked if they had undergone a swab test. The median age was 54.5+/-10 years; 320 (66%) were male. Of the 485 patients, 219 (45%) were on anti-TNFα, 118 (24%) on anti-IL-17, and 148 (31%) on anti-IL-12/23. Discontinuation of biologic therapy was reported by 26 (5%) patients, despite sending the national recommendations. In terms of comorbidity, 107 patients (22%) reported hypertension, 44 (9%) were diabetics, 107 (22%) reported a BMI >30 kg/m^2 and 138 patients (28%) were smokers. COVID-19-related symptoms (flu-like syndrome, cough) were reported by 30 patients (6%); one of whom had a positive nasal swab test. No patient had to be hospitalized. Psoriasis flare was observed by 15 patients (3%); among them, five reported discontinuation of biologics. Altogether, we did not find any correlation between discontinuation of biologics and the occurrence of COVID-19-related symptoms or flare of psoriasis.

As of June 9th, 2020, 154,188 positive cases, 102,729 hospitalized patients and 29,209 deaths in a population of 66.99 million inhabitants have been reported in France [3]. The highest number of deaths occurred in north-east France, *i.e.* FC and Ile de France (Paris). FC is a well-defined administrative area with 1,180,397 inhabitants (as of January 1st, 2016). As of June 1st, 845 deaths within three months (March to June 2020) were reported in this region. There were no deaths from COVID-related disease in our study population (IR = 0 per 10 000 person-months) compared with an IR of 2.4 in the general FC population.

Despite the limitations of this retrospective observational study, our data confirm [4-8] that there is no evidence of an increased risk of COVID-19 in psoriasis patients treated with biologics (*table 1*). Four previous Italian studies [4-7] from a high endemic area reported a low number of hospitalizations (<1%) and no intensive care unit admission or death from COVID-19. Furthermore, a recent French study [8] including 1,005 psoriasis patients receiving systemic and biologic treatment found no increased incidence of severe COVID-19 in psoriasis patients during the treatment initiation period compared to those in the maintenance period. However, it should be noted that patients on biologics may have self-isolated more effectively and focused on improved hygiene, thus limiting their own infection risk. In contrast, the international registry PsoProtect [9], based on 267 clinician-reported psoriasis patients treated with biologics with confirmed/suspected COVID-19 from 25 countries, reported a 16.6% rate of hospitalization and 1.5% rate of death. Although we do not have any clear explanation for this discrepancy, we may suggest a possible selection bias with the over-representation of more severe COVID-19 cases, since these may have been preferentially brought to the attention of clinicians.

Altogether, these data do not support the initial suggestion to discontinue all immunosuppressive and biological therapy after exposure to a confirmed COVID-19 case [10]. Even though data from the first wave of COVID-19 support the safety of biologics in patients with psoriasis, it should be remembered that this is a novel, rapidly changing situation; therefore, recommendations may change with additional available data, as this worldwide pandemic is expected to last for months.

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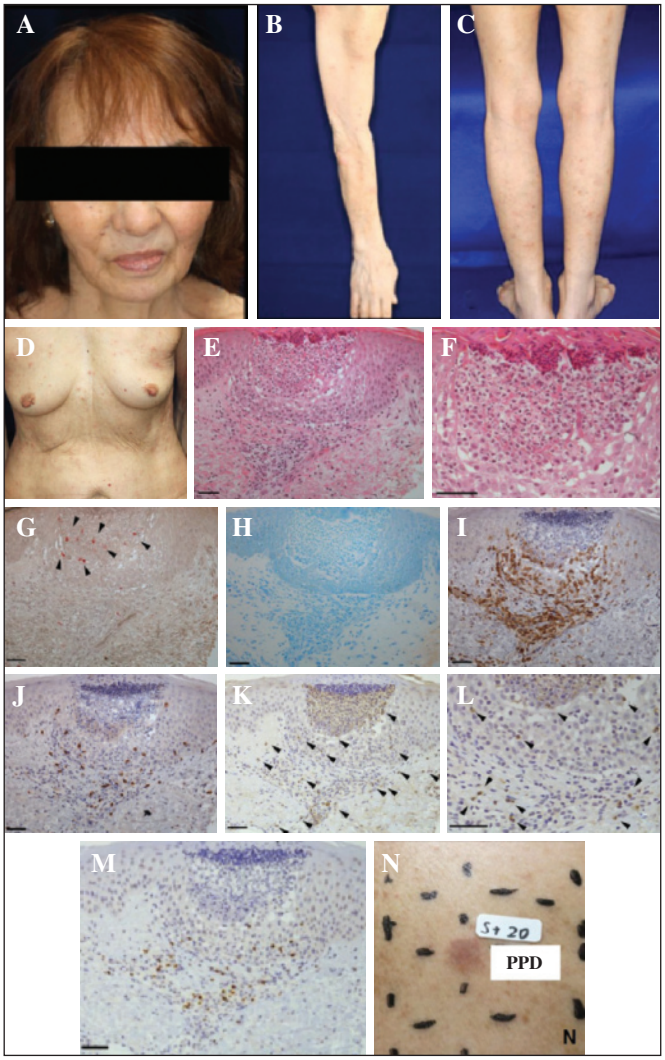

Figure 1. Clinical and histological features of the case. **A**-**D**) The patient with coloured hair (**A**), dry skin, and prurigo-like papules with scratch marks spread over the upper (**B**) and lower (**C**) extremities and trunk (**D**). **E**, **F**) Hyperkeratosis, parakeratosis, acanthosis, and intense neutrophil infiltration beneath the honey cell layer, with lymphocytic infiltration in the lower layer of the epidermis and perivascular and intracollagenous area in the upper dermis (haematoxylin and eosin; x200 [**E**], x400 [**F**)]. **G**) Moderate basophil infiltration (arrowheads) in the neutrophilic micro abscess in the subcorneal layer (new fuchsin; ×200). **H**) Mast cells are not observed around the lesion (toluidine blue; ×200). **I**, **J**) CD4+ (**I**) and CD8+ (**J**) cells in the epidermis and upper dermis (DAB; ×200). **K**, **L**) IL-17+ cells (arrowheads) in the epidermis and upper dermis (DAB; ×200 [**K**], 400 [**L**)]. **M**) Foxp3+ cells in the epidermis and upper dermis (DAB; ×200). Scale bar, 50 μm. **N**) Patch test using the Japanese standard series; erythema is observed in lesion no. 20 (PPD).

A case of prurigo caused by hair dye containing p-phenylenediamine: histopathological findings

p-phenylenediamine (PPD) is a common allergen among hairdressers and hair dye consumers. Delayed-type IV contact hypersensitivity commonly occurs with PPD exposure, manifesting as eczematous eruptions (*e.g.*, erythema, papules, and vesicles) in localised exposed areas, with subsequent systematised presentation in some cases [1]. Contact allergens, including PPD and metals, may be responsible for prurigo as a clinical expression of allergic contact dermatitis [2, 3]. Although common, neither the histopathology nor molecular mechanisms of PPD-induced prurigo have been elucidated. Herein we report a case of prurigo caused by PPD contained in hair dye and show the histopathological features, including the characteristics of an immune cell infiltrate.

A 76-year-old Japanese woman with dyed hair (*figure 1A*) presented with a three-year history of itchy rash on her trunk and extremities that was diagnosed as prurigo nodularis or urticaria in other hospitals. The rash was poorly controlled by oral anti-histamine agents, topical steroids, and anti-IgE antibody therapy. Severe itching left her unable to sleep. Physical examination revealed dry skin and multiple, prurigo-like papules with scratch marks spread over her trunk and extremities (*figure 1B-D*). A biopsy was performed on a papule on her lower extremity. The histopathology exhibited hyperkeratosis, acanthosis, and a subcorneal collection of neutrophils, with