Heraklion, Crete, Greece from 1st of January 2021 until 15th of July 2021 regarding patients who attended Accident and Emergency (A&E) after developing herpes zoster (HZ) infection after COVID-19 vaccination, to assess clinical features and timing of VZV infection after COVID-19 vaccines.

From 1st of January 2021 until 15th of July 2021, 11 patients attended A&E Department at the University Hospital of Heraklion in Heraklion, Crete, Greece, who developed HZ viral (VZV) viral infection after COVID-19 vaccination. There were six (6/11, 54.5%) females and five (5/11, 45.5%) males. The mean age of the patients was 67 years (SD ± 7.899). Eight patients developed VZV after the second dose of Pfizer vaccine, one patient developed VZV after the second dose of AstraZeneca vaccine (Fig. 1), and two patients developed VZV after the first dose of Pfizer vaccine. Both of these patients who developed VZV after the first dose of Pfizer vaccine had after three weeks the second dose of Pfizer vaccine with no further complications. The mean latency period till symptoms' onset was 7. Ninety-one days (SD ± 4.86) and the mean latency period until vesicular eruptions onset was 11.09 days (SD ± 5.41). None of the patients was immunosuppressed and all of them received treatment with oral antiviral for seven days with good response.

Here, we have reported a case series of VZV reactivation after AZD1222 and BNT162b2 COVID-19 mRNA vaccines. In our case series, two patients developed VZV after the first dose of Pfizer vaccine and both were proceeded to the second dose of vaccine without any complications. Limitations of this study consist that this case series was from a single centre in Greece during a short period of time. In the literature, there are only few reports of VZV reactions after COVID-19 vaccines.[4–10] In a study from Spain, VZV and herpes simplex virus (HSV) reactivations accounted for 13.8% of reactions.[1]

The exact pathophysiology underlying cutaneous effects after AZD1222 and BNT162b2 COVID-19 mRNA vaccines have still to be elucidated, and further prospective larger studies are needed. Nevertheless, even though VZV reactivation is rare, medical professionals should pay close attention to the possible adverse effects of the COVID-19 vaccines.

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The patients in this manuscript have given written informed consent to publication of their case details.

Conflict of interest

The authors declare that there is no conflict of interest.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SARS-CoV-2 serology in patients on biological therapy or apremilast for psoriasis: a study of 93 patients in the Italian red zone

Editor

Lombardy, Italy was one of the most heavily impacted areas in the world during the height of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pandemic, quickly

Table 1 Variables and Parameters Analysed for Psoriatic Patients undergoing therapy with biological drugs or apremilast

Parameter	Patients (n = 93)	Serology (IgG Spike)	
		Positive	Negative
Sex			
Male	70	10	60
Female	23	2	21
Age			
Mean	54 ± 12.4		
<60	61	7	54
>60	32	5	27
Type of systemic therapy			
Anti-TNF-a	43	9	34
Anti-IL-17	24	3	21
Anti-IL-12/23	17	0	17
Anti-PDE4	9	0	9
Place of Work			
Retired / work from home	41	5	36
Community / Public work	37	5	32
Office work	15	2	13
Number of family members			
1	13	0	13
2	32	5	27
3	27	2	25
4 or more	21	5	16

becoming the epicentre within Italy. There have been 845 898 cases reported to date 19 July 2021 within Lombardy, accounting for ~20% of the cases overall in Italy.[1] During the height of the pandemic, concern was raised over the use of biologics for psoriasis as they necessitate some degree of immunomodulation.[2]

Herein, we wish to report our real-world experience with psoriatic patients treated with biological drugs or apremilast during the SARS-CoV-2 pandemic at the tertiary level Dermatological Clinic at the IRCCS Policlinico San Matteo Foundation, Pavia, Italy. We conducted serological analysis for SARS-CoV-2 seroprevalence levels in relation to patient specific variables (including type of systemic treatment, sex, age, place of work, number of family members). We analysed present comorbidities as a factor for SARS-CoV-2 seroprevalence rates. Finally, we used the serological data to determine the usefulness of an over-the-phone questionnaire for SARS-CoV-2 positivity performed by Brazzelli *et al.*[3] on the same cohort of psoriatic patients.

All patients were over the age of 18, and under systemic therapy with biological drugs or apremilast for psoriasis. Serological data was collected from 93 psoriatic patients (n = 93) during a period from June 2020 to May 2021 using enzyme linked immunosorbent assay for SARS-CoV-2 related antibodies. Patient history was retrieved from medical records. The statistical analysis of the data was performed using Stata (Version 1.4). The study protocol was approved by the IRCCS Policlinico San Matteo Foundation, Pavia, Italy (Protocol number: 38152/2020).

The parameters and variables analysed in the study are summarised in Table 1. Patients were organised into four functional groups according to the fundamental molecular target of the drug: Anti-TNF-α (Etanercept, Infliximab, Adalimumab), Anti-IL-12/23 (Ustekinumab, Guselkumab), Anti-IL-17 (Secukinumab, Ixekizumab), or Anti-PDE4 (Apremilast).

In our sample cohort of 93 patients, 12 were found to have SARS-CoV-2 positivity according to anti-Spike protein IgG levels, corresponding to an incidence rate of 13%. None of the 12 positive patients had a severe infection or required hospitalisation due to SARS-CoV-2 infection.

In terms of patient-specific variables, sex, age, place of work, number of family members, and type of systemic therapy did not seem to significantly alter the likelihood of having a positive SARS-CoV-2 serology. The most commonly used type of systemic therapy was Anti-TNF-α (43% of patients) which also accounted for 9/12 (75%) positive patients.

Between the comorbidities analysed (Table 2), only a history of cardiovascular disease was associated with a statistically significant increase in SARS-CoV-2 seroprevalence [Odds Ratio (OR) 5.07 P-value = 0.045 (95% CI 1.03–24.8)].

Statistical analysis between serological data and over-the-phone questionnaires performed by Brazzelli *et al.*[3] showed a strong association [OR 9.60 P-Value = 0.001 (95% CI 2.43–37.9)] between questionnaire positivity and serological positivity.

Table 2 Comorbidities and increased risk factor of incidence rate (IR) for positive SARS-CoV-2 Serology

COMORBIDITY†	Number of patients (% of overall)	Positive cases	IR increase factor	95% confidence interval	P-value
Hypertension	33 (35%)	6	2.00	0.59–6.80	0.266
Obesity	18 (19%)	3	1.47	0.35–6.08	0.598
Dyslipidemia	12 (13%)	1	0.58	0.07–4.93	0.617
Diabetes	10 (11%)	0	1.00	–	–
Cardiovascular disease	8 (8.6%)	3	5.07	1.03–24.80	0.045
COPD	4 (4.3%)	0	1.00	–	–
Chronic kidney disease	2 (2.2%)	1	7.27	0.42–125.80	0.171

†Note that cerebrovascular disease and neoplastic disease were also screened for but omitted as 0 of 93 patients had either comorbidity.

In conclusion, we found an incidence rate of 13%, within the range from the literature for Italy (7.7%[4]–19.7%[5]). The use of biological drugs and apremilast for psoriasis does not seem to increase severity of the disease or susceptibility to SARS-CoV-2 infections, similar to findings from the literature.[6,7] Data from our sample cohort suggests that patients with cardiovascular disease may be at an increased risk of contracting SARS-CoV-2. Finally, over-the-phone questionnaires for SARS-CoV-2 positivity are a potentially useful diagnostic tool during the heights of pandemics where in-person meetings may not be possible.

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Conflict of interest

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Biphasic bullous pemphigoid starting after first dose and boosted by second dose of mRNA-1273 vaccine in an 84-year-old female with polymorbidity and polypharmacy

Dear Editor,

Bullous pemphigoid (BP) is an autoimmune blistering disorder mainly affecting elderly people. Possible triggers associated with onset of BP lesions include drugs, infections, physical factors and vaccinations.[1]

We report the case of an 84-year-old female who presented with severe itching and an erythematous rash for 10 weeks, starting at her back. Since 4 weeks, an additional eruption of blisters was noticed affecting arms, legs and trunk. A few days prior to the onset of the rash, she had received her first dose of mRNA-1273 (Moderna, Cambridge, MA, USA). A second dose was given 29 days later, which resulted in an increase of itching as well as area affected by the rash, and eruption of blisters.

Physical examination on admission revealed erythematous macules with epidermal involvement on trunk, arms and legs. Within the erythematous macules, bullae as well as remnants of bullae were found (Fig. 1a).

A lesional skin biopsy revealed subepidermal blistering and spongiosis with eosinophil accumulation (Fig. 1b). Dyskeratotic cells as well as other signs of erythema multiforme were missing. Additionally, a subcorneal blister with clusters of cocci – as seen in bullous impetigo – was also absent. Due to technical reasons, a direct immunofluorescence assay (IgG, C3) was not performed. Serological analyses confirmed autoantibodies to BP 180 (1 : 320; normal range <1 : 80) and BP 230 (+++; normal range: 0; maximum range: ++++) in accordance with the diagnosis of BP.

