cases, the patients had a personal or family history of atopy, perhaps making them more susceptible to an eczematous reaction. It is unknown if this reaction may also occur with the Moderna mRNA COVID-19 vaccine. As more of the population is vaccinated against COVID-19, rare reactions are likely to surface and it is important to study these reactions to facilitate optimal management of patients who develop them. In this series of two patients who developed generalized eczematous reactions to the Pfizer-BioNTech COVID-19 vaccine, the reaction occurred with both doses, was managed by oral or systemic glucocorticoids and did not prevent safe administration of both doses of the vaccine.

Patient consent

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

Conflict of interest

None to declare.

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DOI: 10.1111/jdv.17494

Erythema multiforme after CoronaVac vaccination

Dear Editor,

In January 2021, SARS-CoV-2 vaccine, CoronaVac, developed by Sinovac Life Sciences (Beijing, China) was approved for the use in Brazil by its National Health Surveillance. It is an inactivated SARS-CoV-2 virus adsorbed on aluminium hydroxide and diluted in sodium chloride and phosphate-buffered saline.[1] Like other novel vaccines against COVID-19, it can induce cutaneous adverse reactions, generally mild.[1] Erythema multiforme (EM) is an acute and usually self-limited immune-mediated mucocutaneous disorder.[2] It is related to infections in 90% of cases – mainly herpes simplex virus (HSV) infections – and in 10% of cases, to drugs.[2] Unusually, it has also been documented following the vaccination.[3] We report a case of EM after CoronaVac vaccination.

A 75-year-old man with hypertension received both doses of the COVID-19 vaccine, CoronaVac: the first on February 12th and the second on March 6th. He was also in the use of ramipril 5 mg for the past 7 years. He had no adverse reactions after the first dose. However, five days after the second dose, he started with pruriginous, raised edematous lesions, with two colour zones and poorly defined borders, symmetrically in his knees (Fig. 1) that then spread to his face (Fig. 2) and trunk. He denied systemic symptoms, intake of new medications, and had no signs suggesting any infections. Mucous membranes were not affected. Also, he had neither medical history of herpes simplex infections, nor cutaneous adverse reactions to previous vaccines. A punch biopsy was performed and showed a lymphohistiocytic infiltrate surrounding the superficial dermal vessels. Laboratory tests, like erythrocyte sedimentation rate, white blood cell count, liver enzyme levels and serologies, were normal. A diagnosis of erythema multiforme minor was made, and treatment with topical corticosteroids and oral antihistamines for symptomatic relief was performed.

Almost, all vaccine components can be potential triggers to allergic reaction, but they are usually caused by the inert components (excipients).[4] Adjuvants, like aluminium salt present in CoronaVac, are responsible for type IV hypersensitivity.[4] Polyethylene glycol (macrogol), in the currently available Pfizer (New York, NY, USA)-BioNTech (Mainz, Germany) and Moderna, was suggested to cause immediate hypersensitivity reactions and also delayed-type reactions like pseudoallergic or non-IgE-mediated urticaria.[4,5]

Recently, EM was registered after mRNA-based COVID-19 vaccines: three cases after Moderna first dose[6] and a case of EM-like lesions in a patient with lupus erythematosus (Rowell's syndrome) after Pfizer first dose.[7] But until now, we have no data about EM after the CoronaVac vaccine. Although a fortuitous occurrence cannot be totally excluded in our case, the temporal association, absence of HSV infection history and other identifiable triggers make very likely the eruption, was caused by CoronaVac.

The aetiology of EM is unclear, but appears that in genetically predisposed individuals, and a trigger (usually infection) induces cell-mediated immune processes against antigens, via CD4 type 1 T-helper cells, release of IFN-γ and then recruitment of autoreactive T cells.[3] IFN-γ was also detected as an indicator of T-cell responses after CoronaVac vaccination.[1] Hence, we hypothesize

Figure 1 Erythematous, slightly violaceous, raised, edematous plaques, with two color zones and poorly defined borders on the left knee.

Figure 2 Round erythematous papules on the forehead.

that CoronaVac can act as an inciting factor that activates the same pathway of EM leading to a type III or IV of hypersensitivity either by the vaccine itself or to its components.[8]

Erythema multiforme following vaccination is rare, just as other major adverse events and should not discourage the use of vaccines. Also, the rarity of the disease makes it hard to establish a causal link. But since we are just at the beginning about learning of the novel anti-SARS-CoV-2 vaccines, it is important to be aware about its possible cutaneous adverse reactions.

Conflict of Interest

None declared.

Consent statement

The patient authorized the release of the photographs and the clinical case for scientific purposes.

Ethical principles

This paper contains a small case report and respects the ethical principles for medical research.

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DOI: 10.1111/jdv.17495

Widespread purpura annularis telangiectodes following mRNA SARS-CoV-2 vaccine

Dear Editor,

Since December 2020, COVID-19 vaccination started around the world. Messenger RNA (mRNA)-based and adenovirus vector vaccines have received authorization for their use. A wide variety of cutaneous reactions after all the COVID-19 vaccines have been reported.[1] We describe an unusual case of disseminated annular lesions triggered by m-RNA COVID-19 vaccine BioNTech/Pfizer (Mainz, Germany; New York, NY, USA).

A 75-year-old woman presented to the emergencies department with a 7-day history of widespread mildly pruritic lesions. She had personal history of arterial hypertension, diabetes mellitus, auricular fibrillation and chronic cardiac insufficiency. Physical examination revealed erythematous annular patches on the trunk and lower limbs, with purpuric peripheral areas and central clearing, predominantly located on the abdominal area (Fig. 1). No other mucocutaneous involvement was observed.

Figure 1 Erythematous patches located on the trunk, mainly on the abdominal region. The lesions present annular form, with a purpuric/petechial peripheral area and central clearing. Some lesions are confluent, forming big erythematous brownish patches.