Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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SARS-CoV-2 vaccines are well tolerated in patients with mastocytosis

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causing coronavirus disease 2019 (COVID-19) initially emerged in December 2019 in Wuhan, People's Republic of China, and its rapid spread led to a global pandemic. Vaccines are the single, most effective method of stopping the pandemic and concerns about vaccine safety have necessitated updates to the knowledge, especially in terms of allergic diseases. Patients with mastocytosis, who frequently experience recurrent anaphylaxis, constitute an important group that needs to be investigated as to whether the COVID-19 vaccines can be administered safely.[1]

Mastocytosis describes a group of disorders in which pathologic mast cells accumulate in tissues. Pruritus, flushing, recurrent anaphylaxis, nausea, vomiting, shortness of breath, drop in blood pressure, urticaria, angioedema, diarrhea, weakness, headache, and muscle pain are the symptoms of mast cell activation in these patients. The overall risk for anaphylaxis is considerably higher than that of the general population and has been reported in up to 49% of some cohorts.[1] Valent et al[2] recommended that anti–mediator-type drugs, venom immunotherapy, or vitamin D should be continued and chemotherapy or immunosuppressive drugs should be carefully evaluated on a case-by-case basis during COVID-19 in patients with mastocytosis. Rama et al[3] presented 2 patients with mastocytosis, who were vaccinated with the messenger RNA vaccine, the BNT162b2 (BioNTech) vaccine. Both were vaccinated with premedication with H_1 and H_2 antihistamines, 1 hour before, and montelukast 10 mg, at 1 and 24 hours, without adverse effects or a reaction, but 1 of the patients had myalgia on the following day. Kaakati et al[4] reported a series of 18 patients with history of mastocytosis who underwent SARS-CoV-2 vaccination, and none had an allergic reaction or anaphylaxis after the vaccination. Of the 18 patients, 13 received the Pfizer, 4 the Moderna, and 1 the Janssen vaccine. In addition, 4 patients took an antihistamine 30 to 60 minutes before vaccination.

The study was conducted in accordance with the ethical standards of the Declaration of Helsinki, revised in 2013, and was approved by Hacettepe University Ethics Committee (2021/29-11). The hospital records of 7 patients (4 females and 3 males) have been reviewed retrospectively. These patients had been diagnosed with having either cutaneous or systemic mastocytosis and were treated and followed up in our tertiary care center. The characteristics of the 6 vaccinated patients are summarized in Table 1. Anaphylaxis to drugs had been reported by 3 patients, and 1 patient had had a history of anaphylaxis owing to food allergy. The mean baseline tryptase level was 15.9 ng/mL (range, 3-200 ng/mL). The patients were contacted by telephone call and asked whether they have received any premedication before vaccination or experienced any reaction or adverse effect after vaccination. Only 1 patient (14%) had swelling of the throat, cough, and shortness of breath 2 minutes after Sinovac vaccination. This patient had received 45.5 mg pheniramine and 40 mg methylprednisolone intravenously 1 hour before the vaccine. Although the patient had received the same premedication intravenously 1 hour before the second dose of the same vaccine, the reaction has recurred, and the patient has been treated with 45.5 mg pheniramine and 40 mg methylprednisolone intravenously. The complaints have resolved in 1 hour. One patient, who had received 16 mg methylprednisolone and 22.7 mg pheniramine orally as premedication in each dose of the vaccines, has not experienced any reaction after the first 2 doses of Sinovac and the first dose of BioNTech. In addition, 1 patient has not been vaccinated on his will because of post-vaccine reaction concerns. A total of 15 vaccinations were administered to 6 patients, and 1 patient with cutaneous mastocytosis has experienced 2 non–life-threatening reactions after the vaccination. None of the patients had history of any vaccine, polyethylene glycol, or polysorbate allergy. We did not recommend our patients allergy testing with polyethylene glycol before BioNTech vaccine.

The European Competence Network on Mastocytosis and the American Initiative in Mast Cell Diseases recommended the use of COVID-19 vaccines in patients with mastocytosis, and by determining the individual risks of the patients, safety precautions, premedication, and post-vaccination observation should be considered in every patient with mastocytosis.[5] Although history of an anaphylactic reaction has been reported in up to 22% against other triggers in patients with mastocytosis, COVID-19 vaccines seemed to be well tolerated in the current study population.[4] There is a consensus among experts that antihistamine premedication should be administered 30 or 60 minutes before vaccination in patients with mastocytosis at high risk of anaphylaxis, and the use of systemic corticosteroids before the vaccines has been debated owing to concerns about vaccine efficacy.[5] In a previous report, 2 patients with mastocytosis and a history of anaphylaxis were able to tolerate BioNTech vaccine with premedication.[3] The current cohort includes 2 patients who had been premedicated with antihistamine and corticosteroid. Although one has had mild reactions after both doses of Sinovac, the other had no reaction

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Table 1
The Characteristics of the Cohort

Patient no.	Age/sex, y	Mastocytosis	SARS-CoV-2 vaccines			Premedication	Any vaccine reaction
			First dose	Second dose	Third dose		
1	26/M	Indolent systemic	Sinovac	Sinovac	—	No	No
2	50/F	Aggressive systemic	Sinovac	Sinovac	BioNTech	Intravenous 45.5 mg pheniramine and 16 mg methylprednisolone 1 h before each dose	No
3	47/F	Indolent systemic	Sinovac	Sinovac	—	No	No
4	46/F	Aggressive systemic	Sinovac	BioNTech	BioNTech	No	No
5	54/M	Indolent systemic	Sinovac	Sinovac	Sinovac	No	No
6	28/F	Cutaneous	Sinovac	Sinovac	—	Oral 22.7 mg pheniramine and 40 mg methylprednisolone 1 h before each dose	Swelling of the throat, cough, and shortness of breath 2 min after each dose

Abbreviations: F, female; M, male; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

after BioNTech vaccines. Furthermore, although there were only 3 patients vaccinated with BioNTech in our study, all of them could be safely vaccinated. Four patients did not receive premedication and did not experience any reaction.

Limitations of this study are primarily the small sample size and that patients had only received BioNTech and Sinovac vaccines. Despite the COVID-19 pandemic continuing at full speed, the introduction of new vaccines will enrich current knowledge with new data that will emerge in large populations with mastocytosis. Further studies are needed to ensure the safety of COVID-19 vaccines, however. The strength of the study was that it provides information to literature about possible reaction risk for the Sinovac vaccine. The findings of the current study suggest that most patients with mastocytosis can be safely vaccinated, even those with an allergy or anaphylaxis history. Our results point that the COVID-19 vaccines seem to be safe, and patients should be encouraged to get vaccinated. The role of premedication in preventing vaccine reactions was not supported by the data in this study.

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The impact of dupilumab treatment on severe acute respiratory syndrome coronavirus 2-coronavirus disease 2019 antibody responses in patients with atopic dermatitis

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Immunomodulatory therapies are typically used to treat patients with moderate-to-severe atopic dermatitis (AD). Thus, it is critical to understand their effects on coronavirus disease 2019 (COVID-19) outcomes. We recently reported that patients with AD on dupilumab were more likely to be asymptomatic or have milder COVID-19 symptoms.[1] However, the impact of dupilumab and systemic immunosuppressants on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)/COVID-19 antibody levels in patients with AD remains unknown. We, thus, evaluated immunoglobulin (Ig)G antibody levels in unvaccinated patients with COVID-19 infection and after messenger RNA (mRNA) vaccination.

As part of a prospective registry related to COVID-19 in the Department of Dermatology at the Icahn School of Medicine at Mount Sinai, we collected serum samples from patients before vaccination and after mRNA vaccination between June 8, 2020 and October 14, 2021. Patients were enrolled under institutional review board