

Research Letter

Varicella Zoster Virus Vaccination in Patients With Immune-Mediated Inflammatory Diseases: Drivers and Barriers

To the Editor:

Patients with immune-mediated inflammatory diseases (IMIDs) undergoing immunosuppressive therapy are at increased risk of herpes zoster (HZ).¹ In line with international guidelines, the French national health authority updated the vaccination strategy against varicella zoster virus (VZV) in March 2024 and now recommends that immunocompromised persons aged ≥ 18 years be vaccinated with the recombinant VZV vaccine.²⁻⁴ We aimed to assess the acceptability and potential concerns of VZV vaccination in patients with IMID.

The present study consisted of an online questionnaire designed using SurveyMonkey (www.surveymonkey.com) for anonymous data collection and processing. The study targeted adult patients with a self-reported diagnosis of IMID. Epidemiological characteristics, VZV vaccine uptake and acceptance, and potential concerns regarding VZV vaccination were assessed. The online survey was conducted between July 1 and October 31, 2024, and was distributed to patients attending medical visits or via mailing lists of 3 tertiary university centers in Paris and Lille, France. Distribution was optimized through the French Network for Autoimmune and Autoinflammatory Diseases (FAI2R) and the main French IMID patient associations. Partially completed questionnaires ($< 60\%$) and questionnaires from patients who did not report a diagnosis of IMID were excluded from the analysis. Clinically relevant predictor variables, including sex, age, type of IMID, treatment received, history of HZ, and vaccination status against influenza and coronavirus disease 2019 (COVID-19), were used in a multivariable logistic regression model to identify those independently associated with acceptance of VZV vaccination, with estimation of odds ratios (ORs) and 95% CIs.

A total of 756 adult patients were included. Partially completed questionnaires ($n = 10$) or questionnaires completed by patients who did not report IMID ($n = 23$) were excluded, and 723 questionnaires were analyzed. Most patients (70.3%, $n = 508/723$) were aged ≤ 65 years and 80.1% ($n = 579/723$) were female. Vasculitis, systemic lupus erythematosus, Sjögren disease, systemic sclerosis, inflammatory myositis, and sarcoidosis accounted for 81.9% ($n = 592/723$) of reported IMIDs. A history of HZ was reported by 25.9% of patients ($n = 187/723$). Two hundred seventy of 682 patients (39.6%) did not know that HZ is more common in patients receiving immunosuppressive therapy. Four hundred thirty-two of 682 patients (63.3%) and 218/682 (32%) patients were unaware that HZ can cause vision loss and long-lasting neuralgia, respectively.



Almost 75% ($n = 527/723$) of patients currently or previously treated with corticosteroids or immunosuppressants were eligible for VZV vaccination, but only 9 of those patients (1.7%) were vaccinated. Overall, only 29.2% ($n = 211/723$) of patients reported that they would accept vaccination against VZV, although most of them were vaccinated annually against influenza (58.5%, $n = 423/723$) and, whenever recommended, against COVID-19 (54.1%, $n = 391/723$). In multivariable logistic regression analysis, acceptance of VZV vaccination was associated with age > 65 years (OR 1.6, 95% CI 1.1-2.4), history of HZ (OR 1.9, 95% CI 1.3-2.8), and current vaccination against influenza (OR 2.5, 95% CI 1.6-3.9) and COVID-19 (OR 2.2, 95% CI 1.4-3.2; Table). Among patients uncertain or unwilling to be vaccinated ($n = 512$), the main concern was the risk of side effects (24.8%, $n = 127/512$). Notably, 54.7% ($n = 280/512$) of the hesitant patients said they would be more likely to be vaccinated if the recommendation came from their treating physician.

Although the recombinant VZV vaccine is safe and effective against HZ in immunocompromised patients, the proportion of patients in the high-risk IMID population willing to be vaccinated against VZV is extremely low.^{5,6} The fact that the majority of reluctant patients would be likely to accept vaccination if recommended by their physician highlights the important role of healthcare professionals in promoting vaccinations.

Table. Multivariate analyses for independent predictors of VZV vaccine acceptance in IMID.

	Univariate OR (95% CI)	Multivariate OR (95% CI)	P
Female sex	1.5 (1.0-2.2)	1.2 (0.8-1.8)	0.46
Age > 65 yrs	2.4 (1.7-3.3)	1.6 (1.1-2.4)	0.02
Type of IMID			
Vasculitis	1.2 (0.9-1.7)	1.1 (0.7-1.7)	0.64
SLE	0.9 (0.6-1.5)	1.3 (0.8-2.2)	0.28
Sjögren disease	0.8 (0.5-1.4)	1.2 (0.6-1.9)	0.90
Steroids and/or IST ^{a,b}	1.5 (1.1-2.3)	1.3 (0.9-1.9)	0.24
History of herpes zoster	1.9 (1.3-2.7)	1.9 (1.3-2.8)	< 0.001
Current influenza vaccination ^c	4.1 (2.8-6.0)	2.5 (1.6-3.9)	< 0.001
Current COVID-19 vaccination ^d	3.4 (2.4-4.9)	2.2 (1.4-3.2)	< 0.001

^a Ever received. ^b IST included azathioprine, methotrexate, mycophenolate, belimumab, anifrolumab, rituximab, Janus kinase inhibitors, tumor necrosis factor inhibitors, and tocilizumab. ^c Vaccinated annually. ^d Vaccinated whenever recommended. COVID-19: coronavirus disease 2019; IMID: immune-mediated inflammatory disease; IST: immunosuppressive therapy; OR: odds ratios; SLE: systemic lupus erythematosus; VZV: varicella zoster virus.

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CONTRIBUTIONS

TG and KS designed the study, directed the project, conducted the analysis, and wrote the manuscript. MC, AM, BT, EH, and TP were involved in the screening of patients. All authors reviewed and approved of the final manuscript.

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COMPETING INTERESTS

TG reports fees for serving on advisory boards and giving lectures (GSK) outside the scope of the current study. KS reported fees for scientific committee work (Novartis) outside the scope of the current study. The remaining authors declare no conflicts of interest relevant to this article.

ETHICS AND PATIENT CONSENT

The research followed the principles of informed consent with assurances of confidentiality and anonymity. No data were collected on identity, exact age, ethnicity, geographical location, socio-professional category, sexual preference, or IP identification. Informed consent for the publication of identified study results was obtained from all individual participants included in the study. The study was approved by the Institutional Review Board of Université Paris Cité (IRB 00006477).

DATA AVAILABILITY

The data described in the manuscript will be made available on request pending application and approval of the authors.

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