

Letters

SUBCUTANEOUS ALLERGEN IMMUNOTHERAPY IN 3 PATIENTS WITH HIV

With the advent of highly active antiretroviral therapy (HAART) as treatment for human immunodeficiency virus (HIV), HIV-infected patients are living longer and experiencing chronic diseases. HIV has been associated with enhanced T_H2-type responses and associated atopic conditions. Few articles in the published literature have explored whether allergen immunotherapy can be safely tolerated in HIV-infected patients undergoing stable HAART. We describe the effects of allergen immunotherapy on 3 HIV-infected patients.

Patient 1 was a 40-year-old woman with HIV who was referred to our clinic for evaluation of chronic rhinosinusitis (Table 1). Percutaneous skin test results were positive for several allergens (Table 1). Her total serum IgE level was 337 IU/mL.

The patient suboptimally responded to environmental control and medical therapy, and she requested allergen immunotherapy. While receiving immunotherapy, the patient's CD4 cell count remained stable and her viral load has remained undetectable (Table 1). She experienced brief, self-limited episodes of sneezing after the first and third immunotherapy doses and no other adverse reactions. She has reported symptomatic improvement and is currently undergoing maintenance immunotherapy with a total treatment duration of 153 weeks.

Patient 2 was a 53-year-old man with a history of a splenectomy, hepatitis C, and HIV who was evaluated in our clinic for oculonasal itching and sneezing (Table 1). Percutaneous skin test results were positive for distinct allergens (Table 1). His total serum IgE level was 90.6 IU/mL.

The patient was prescribed intranasal mometasone and desloratadine and counseled on environmental control measures. Three weeks later,

he returned to the clinic for follow-up and requested allergen immunotherapy because symptoms had not improved. While receiving immunotherapy, the patient's CD4 cell counts were stable and viral load remained undetectable (Table 1). He experienced no adverse reactions and has reported symptomatic improvement while receiving allergen immunotherapy. He is currently continuing maintenance immunotherapy with a treatment length of 77 weeks.

Patient 3 was a 44-year-old man with HIV who presented to our clinic for evaluation of sneezing and ocular itching (Table 1). The patient had been taking loratadine and diphenhydramine as needed with minimal symptom relief. Percutaneous skin test results were positive to distinct allergens (Table 1).

The patient experienced minimal relief with medical therapy and environmental control, and he requested allergen immunotherapy. During immunotherapy, his CD4 cell count initially increased and subsequently remained stable; viral load initially increased then ranged from an undetectable level to 265 copies/mL (Table 1). He experienced no adverse reactions and noted symptomatic improvement while receiving immunotherapy. He is currently continuing maintenance immunotherapy with a treatment duration of 158 weeks.

HIV-infected patients are especially susceptible to atopic diseases. Several studies have suggested that HIV patients more commonly demonstrate allergen skin test positivity than non-HIV-infected individuals.^{1,2} This atopic predisposition seen in HIV-infected patients may result from enhanced T_H2-type responses associated with HIV.³ Our patients' atopic manifestations and failure to respond to medical therapy led to the initiation of allergen immunotherapy despite potential risks in the setting of HIV infection.

There have been long-standing concerns regarding the role of immunotherapy in the setting of HIV infection. However, distinct studies in HIV-infected patients have proposed that vaccine immunotherapy has only a minimal effect on CD4 cell counts and viral load.^{4,5} Potential T-cell-activating therapies have also been investigated among HIV-infected patients receiving stable HAART and

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Table 1. Patient Characteristics

Characteristic	Patient 1	Patient 2	Patient 3
Age, y/sex	40/F	53/M	44/M
Time since HIV was diagnosed, y	8	14	3
History of opportunistic infections	No	No	No
HAART regimen	Efavirenz, tenofovir-emtricitabine	Efavirenz, tenofovir, stavudine	None
CD4 cell count/viral load at immunotherapy start	960/ μ L/undetectable	903/ μ L/undetectable	918/ μ L/173 copies/mL
CD4 cell count/viral load after immunotherapy start	7 weeks: 960/ μ L/undetectable 18 weeks: 1,116/ μ L/undetectable 39 weeks: 1,287/ μ L/undetectable 70 weeks: 900/ μ L/undetectable 102 weeks: 1,045/ μ L/undetectable	4 weeks: 884/ μ L/undetectable 16 weeks: 1,029/ μ L/undetectable 27 weeks: 860/ μ L/undetectable 41 weeks: 952/ μ L/undetectable 58 weeks: 1,100/ μ L/undetectable	2 weeks: 1,116/ μ L/208 copies/mL 26 weeks: 1,280/ μ L/undetectable 48 weeks: 1,353/ μ L/177 copies/mL
Indication for immunotherapy	Chronic allergic rhinosinusitis	Chronic allergic rhinosinusitis	Allergic rhinitis
Positive allergy skin test results	Tree, grass, ragweed, dust mite, cat, roach, mold	Tree, grass, weed, dust mite, ragweed	Tree, grass, dust mite, dog, cockroach, ragweed, cat, mold

Abbreviations: HAART, highly active antiretroviral therapy; HIV, human immunodeficiency virus.

found not to increase viral load.^{6,7} Interestingly, HIV patients receiving interleukin 2 therapy had viral loads that significantly decreased compared with HIV-infected individuals receiving placebo.⁸ Despite these positive results, immune therapies have been cautiously used in HIV-infected patients.

There has been only 1 reported case describing the impact of allergen immunotherapy on a patient with HIV. The case detailed a 44-year-old, HIV-positive man receiving HAART; he received allergen immunotherapy and had a stable CD4 cell count and viral load during the 24-week observation period.⁹ Our series of 3 HIV patients receiving allergen immunotherapy similarly suggests that HIV-infected patients may successfully receive immunotherapy.

However, one must consider the possible risks surrounding allergen immunotherapy in HIV-infected patients. Several authors have proposed that after an initial exposure, immunization could increase antigen-specific memory cells and result in viral proliferation and/or increased T-cell responses.^{10,11} The consideration of allergen immunotherapy in the setting of HIV infection must initiate a thorough evaluation of potential risks and benefits of therapy.

During allergen immunotherapy in HIV-infected patients, long-term follow-up must assess allergic symptoms, CD4 cell counts, and viral load. Although our series may be the largest patient sample to date, a larger patient population is needed to confirm safety and efficacy. A randomized, double-blind, placebo-controlled trial of allergen immunotherapy in HIV patients would be ideal.

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SWEET SYNDROME WITH ASSOCIATED SYSTEMIC INFLAMMATORY RESPONSE SYNDROME: AN ULTIMATELY FATAL CASE

Sweet syndrome (SS) is a rare disease manifested by an acute febrile neutrophilic dermatosis that can present in many clinical settings.¹ The connection between SS and myelodysplastic syndrome (MDS) is known. It can precede,² appear with,³ or follow⁴ the development of MDS and can signal bone marrow disorder in transformation.⁴ To date, only 4 published cases describe an association between SS and systemic inflammatory response syndrome (SIRS), 2 in the English literature. We describe a case of MDS-associated SS with SIRS that ultimately proved fatal.

A 44-year-old woman with follicular lymphoma that transformed to diffuse large B-cell lymphoma (in remission, with maintenance rituximab therapy) developed fever, migratory arthritis, and painful, pruritic erythematous nodules and plaques on both legs as well as vesicles and bullae on her lips. Symptoms continued on a recurrent course for 2 months, culminating in hospital admission after the development of anemia, thrombocytopenia, and renal failure (Table 1 provides the results of the laboratory investigations). On admission, the patient was febrile (temperature, 39°C) and tachycardic (heart rate, 104 bpm). Renal failure was secondary to acute tubular necrosis (biopsy proved); skin biopsy results were nondiagnostic, and bone marrow biopsy results demonstrated MDS (Fig 1). She was started on oral prednisone, 30 mg/d, and owing to a positive response, a diagnosis of SS was considered but not definitely established. Rituximab treatment was held due to marrow failure, and she was discharged on a tapering course of oral corticosteroids.

Three weeks later she relapsed, with recurrent fever (temperature, 39.5°C), tachycardia (heart rate, 122 bpm), arthritis, and skin lesions, necessitating hospital readmission. Deep skin biopsy results demonstrated neutrophilic panniculitis, with no evidence of vasculitis, placing atypical SS highest on the differential diagnosis list. Acute-phase reactant levels were markedly elevated, and her complement C3 level was low. Anemia and thrombocytopenia persisted, with marked neutrophilia. Immunologic workup results were negative (Table 1). Corticosteroid therapy again produced rapid resolution of symptoms, further supporting the diagnosis of SS, and she was discharged. However, once corticosteroid tapering began, she again became acutely unwell and hypotensive, requiring readmission only 3 days hence.

Extensive cultures (including skin biopsy cultures) never demonstrated organisms. Her condition was unstable; she experienced recurrent episodes of palindromic fever with a temperature upwards of 38.8°C, tachycardia (heart rate, 116 bpm), hypotension requiring vasopressor therapy, and acute respiratory decompensation associated with transient and migratory infiltrates on chest radiography. Investigations demonstrated persistent anemia, thrombocytopenia, neutrophilia, and markedly elevated acute-phase reactants. Hydroxyurea was added in an attempt to suppress her neutrophilia; she received corticosteroids and broad spectrum antimicrobials with no response. Colchicine was added. Cutaneous lesions resolved, but she developed oral mucositis with tongue ulceration. Her systemic manifestations persisted. Deterioration continued, with each palindromic flare more severe than the last, ultimately requiring intubation and continuous epinephrine infusion support. The addition of pulse

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