

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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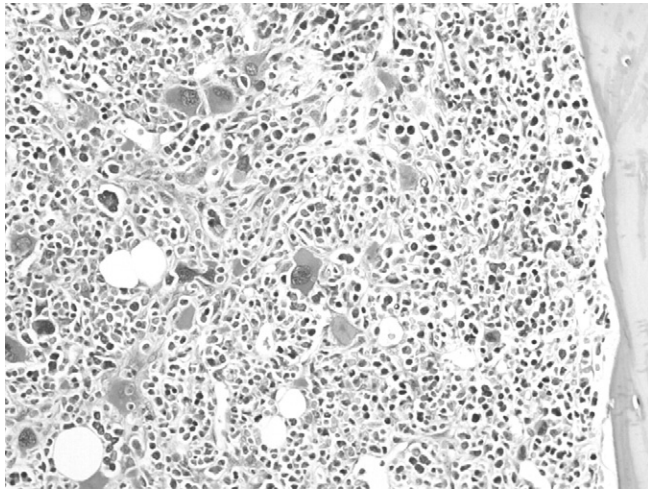


Figure 1. Bone marrow biopsy showing hypercellularity with marked hyperplasia of megakaryocytes and myelofibrosis as part of the myelodysplastic process.

high-dose methylprednisolone and potassium iodide produced a temporary stabilization, but on first taper of corticosteroids, she again deteriorated. Immunomodulatory doses of intravenous immunoglobulin were administered but unhelpful, and she died after 3 weeks of aggressive intensive care unit therapy.

Autopsy indicated the cause of death to be multiorgan failure with bilateral acute bronchopneumonia. Other pertinent findings included multiple palpable erythematous epidermal lesions on the arms bilaterally; microscopic examination revealed neutrophilic dermatosis with no evidence of infection or vasculitis (consistent with SS). Immunofluorescence confirmed the presence of myeloperoxidase and absent CD117 staining, indicating a nonleukemic infiltrate.

Minor findings included splenomegaly, ascites, hepatomegaly, and reactive lymphadenopathy with no evidence of recurrent lymphoma.

This patient was found to have MDS-associated SS, and during her illness, she satisfied all the diagnostic criteria.¹ The SIRS criteria were also satisfied during each hospital visit. Fever is the most common symptom associated with the skin manifestations of SS. Arthralgias, malaise, and myalgias are also reported.¹ Other extracutaneous manifestations of SS have been well documented, including lung involvement,⁵ cardiac failure, and hepatosplenomegaly,¹ all features in this patient. The most common laboratory findings are an elevated erythrocyte sedimentation rate and peripheral leukocytosis with neutrophilia.¹

The standard treatment for SS is systemic corticosteroids or agents such as potassium iodide. Corticosteroid-resistant cases are rare, but successful rescue with other therapies, including anti-tumor necrosis factor agents, have been described.¹ After such a prolonged intensive care unit stay with concomitant high-dose corticosteroid use, we presumed that infection was complicating her clinical picture and did not attempt this therapy.

It has been shown that the development of SS in the presence of MDS is an independent indicator of poor prognosis.^{2,4} Although acute-onset severe SS associated with MDS has been described previously,³ we found only 4 articles⁵⁻⁸ that described SIRS-associated SS, 1 related to MDS⁵ and 2 reporting fatalities.^{6,7} The present case illustrates that although rare, a SIRS-like complication of SS associated with MDS can be a severe variant.

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Table 1. Laboratory Investigations During Hospital Admissions^a

Investigation	First Admission (January 7–30, 2009)	Second Admission (February 19–March 9, 2009)	Third Admission (March 12, 2009)
ESR, mm/h (0–27 mm/h)	140	123	92
C-reactive protein, mg/L (0–1 mg/L)	127	189	182
Complement C3, g/L (0.8–1.5)	1.28	0.72	0.72
Complement C4, g/L (0.16–0.38 g/L)	0.30	0.30	0.20
Hemoglobin, g/L (120–160 g/L)	80	75	59
Platelets, $\times 10^9/L$ (150–400 $\times 10^9/L$)	14	29	9
Neutrophils, $\times 10^9/L$ (2–7.5 $\times 10^9/L$)	3.23	18.79	16.34
Ferritin, $\mu g/L$ (13–150 $\mu g/L$)	1212	NA	1928
ANCA	Negative	Negative	Negative
ENA panel	Negative	Negative	NA
ANA	Negative	Negative	Negative
Anti-DNA	NA	Negative	Negative
RF	Negative	Negative	NA
Anti-CCP	NA	Negative	NA
Cryoglobulins	NA	Negative	NA

Abbreviations: ANA, antinuclear antibody; ANCA, antineutrophil cytoplasmic antibody; anti-CCP, antibodies to cyclic citrullinated peptide; ESR, erythrocyte sedimentation rate; NA, not available; RF, rheumatoid factor.

^a Reference ranges for selected laboratory investigations are given in parentheses in column 1.

Bolded values highlight abnormalities.

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CHALLENGES FACED BY EXPATRIATE CHILDREN WITH FOOD ALLERGY IN AN ASIAN COUNTRY

Food allergy is more prevalent in the West compared with in Asia.¹ Correspondingly, food allergy awareness in the Asian community is lower. It is anticipated that this disparity in community awareness between regions would affect the social adjustments of children with food allergies and their families who migrate from Western countries to Asia. We, therefore, sought to determine how parents of expatriate children coped with food allergy in Singapore. With Singapore being an Asian country with first-world economic and health care standards, we believe that the findings from this study would be largely reflective of developed and developing Asian countries.

A self-administered survey based on a validated quality-of-life questionnaire² was distributed to expatriate members of Food Allergy (Singapore), a support group for food-allergic families to which most expatriate families belong. Information on differences in stress after immigration and the reasons behind these were collected.

Fifty-three of 84 expatriate members (63%) responded to the survey, of whom 33 (62%) had previously lived in a Western country for at least 2 years. We had complete responses from 30 of these 33 members (91%). Approximately equal numbers of respondents were from North America, Europe, and Australia/New Zealand. The most common allergenic foods were peanuts (72.7%), egg (63.6%), tree nuts (57.6%), and milk (45.6%). Based on answers to the question, "How has living in Singapore altered your stress level compared with living in the West?" 13 of 30 families (43%) experienced mild to moderate and 8 (27%) extreme increases in stress levels. Of the 9 families who felt no increase in stress after immigration, no significant differences in demographic characteristics were identified to account for the difference in stress perception.

We present findings from this subset of 21 parents who identified stressors after moving to Singapore (Table 1). These stressors included concern about their child's teacher's lack of aware-

Table 1. Contribution of Specific Factors to Stress Levels in Expatriate Families After Migration to Singapore

Stress factor	Contribution to parental stress level, No. (%) (n = 21)		
	Not at all	To a moderate extent	To a large extent
Teacher's awareness of food allergy	3 (14.3)	7 (33.3)	9 (42.9)
Safety concerning food labeling	3 (14.3)	6 (28.6)	11 (52.4)
Food preparation in restaurants and eateries	3 (14.3)	2 (9.5)	15 (71.4)
Availability of adrenaline autoinjectors	8 (38.1)	6 (28.6)	6 (28.6)
Quality of medical care in Singapore	6 (28.6)	7 (33.3)	7 (33.3)

ness about handling the allergic condition (84.5%), poor food labeling (85.7%), and poor food preparation in eateries (85.7%). Food preparation (71.4%) and food labeling (52.4%) caused the greatest rise in stress levels. Almost 35% of parents were unnecessarily concerned that epinephrine autoinjectors were not available in Singapore, although they are. However, this caused no increase in stress levels because expatriate families probably obtained autoinjectors from their home countries.

Unlike countries such as the United States that have passed legislation such as the Food Allergy and Anaphylaxis Management Act or have established protocols for coping with allergic reactions, most Asian countries do not have such measures in schools. Immigrant parents typically opt to enroll their children in international schools, which are generally more aware of food allergy.

Current food labeling laws in Singapore do not require common allergens to be listed separately from other ingredients as a noticeable food warning. This is unlike in the United States, where the Food Allergen Labeling and Consumer Protection Act requires the 8 most common allergens, accounting for 90% of all allergies, to be listed.³ Similar labeling laws, such as the Food Labelling Regulations (1996) in the United Kingdom⁴ and the Australian/New Zealand Food Standards Code (2002)⁵ are also in place. Such legislature is rare in most Asian countries. Problems such as identifying local food allergens may account for this. Eating outside the home is another reason for stress because Asian cooking involves the use of a multitude of spices, nuts, and flavorings. Migrant parents have suggested that Asian eateries are not food allergy trained and do not have contingencies to provide safe meals, which is in contrast to the standards they may have been accustomed to in the West.⁶

Parents of food-allergic children expect medical professionals to provide adequate information and advice on dealing with allergies.⁷ However, the present study suggests that approximately two-thirds of expatriate parents were moderately or extremely stressed by the inability of medical professionals to meet their expectations. We, therefore, suggest the following as an advisory to expatriate parents travelling to or living in Asia. Parents are advised to purchase prepackaged imported foods in Asian supermarkets, avoiding poorly labeled produce, and to have increased vigilance when eating at local restaurants owing to the possibility of cross-contamination. They may also want to

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