1. Pohl C, Green M, Wald ER, Ledesma-Medina J. Respiratory syncytial virus infections in pediatric liver transplant recipients. J Infect Dis 1992; 165:166-9.
2. Palmer SM Jr, Henshaw NG, Howell DN, Miller SE, Davis RD, Tapson VF. Community respiratory viral infection in adult lung transplant recipients. Chest 1998;113:944-50.
3. Holladay RC, Campbell GD Jr. Nosocomial viral pneumonia in the intensive care unit. Clin Chest Med 1995;16:121-33.
4. Mycrowitz RL, Stalder H, Oxman MN, et al. Fatal disseminated adenovirus infection in a renal transplant recipient. Am J Med 1975;59:591-8.

To the Editor: Fishman and Rubin describe listeriosis as an infection that occurs one month or more after organ transplantation. This is incorrect. In a review of 102 cases of listeriosis in renal-transplant recipients, the time of the infection was reported in 80, and in 13 cases (16 percent), the infection appeared within the first month after transplantation.[1] In seven cases (9 percent) listeriosis developed within two weeks after transplantation.

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1. Stamm AM, Dismukes WE, Simmons BP, et al. Listeriosis in renal transplant recipients: report of an outbreak and review of 102 cases. Rev Infect Dis 1982;4:665-82.

The authors reply:

To the Editor: A central tenet of the care of transplant recipients is the relation between two variables that determine the risk of infection after transplantation: the net state of immunosuppression and the level of exposure (epidemiologic risk). In the first month after transplantation, the net state of immunosuppression is usually too low for "nontechnical" forms of infection to occur. However, if the level of exposure is great enough, then infections occur despite relatively intact host defenses. This context is useful in considering the comments of Drs. Palmer and Tapson. They are correct to emphasize the nosocomial transmission of respiratory viruses, particularly in children, in the differential diagnosis of pulmonary syndromes after transplantation. Nosocomial outbreaks of a variety of respiratory tract pathogens, from viruses to fungi, are of great importance in the post-transplantation period. One of the clues to a major nosocomial hazard, as we emphasize, is the occurrence of infection in the first month after transplantation.

The importance of early infection is also noted by Stamm in relation to infection by *Listeria monocytogenes.* Without trimethoprim–sulfamethoxazole prophylaxis and with a high enough level of exposure, early listeriosis may occur. Early clustering of cases, as previously described, suggests an excessive nosocomial hazard.[1] More commonly, listeriosis reflects simultaneous cytomegalovirus infection or heavy doses of immunosuppression used in patients with a poor result of transplantation.

The comments of Drs. Gómez-Moreno and Cuervas-Mons are, we believe, going to be proved correct in that these viruses, true emerging pathogens, are likely to be of increasing importance in organ-transplant recipients.

The comments of Drs. Ridzon and Onorato are timely. Their recommendations regarding isoniazid prophylaxis are technically correct. In transplant recipients, however, skin testing is often unrevealing and isoniazid often poorly tolerated.[2-4] As described by Dr. Burt Meyers at the World Congress of Transplantation Infectious Disease,[4] the incidence of clinically important hepatic dysfunction in organ-transplant recipients is significantly increased after the initiation of therapy with isoniazid, rifampin, or both, particularly in view of the fact that there is a high prevalence of coexisting viral hepatitis in these patients. Alternative approaches are needed for this population, with agents such as quinolones and ethambutol being useful alternatives to traditional programs of prophylaxis and therapy. Tuberculosis is important in these patients. However, standard recommendations are not always applicable. The best approach to these patients has yet to be established through rigorous study — a problem that merits attention.

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1. Stamm AM, Dismukes WE, Simmons BP, et al. Listeriosis in renal transplant recipients: report of an outbreak and review of 102 cases. Rev Infect Dis 1982;4:665-82.
2. Sakhuja V, Jha V, Varma PP, Joshi K, Chugh KS. The high incidence of tuberculosis among renal transplant recipients in India. Transplantation 1996;61:211-5.
3. Schluger LK, Sheiner PA, Jonas M, et al. Isoniazid hepatotoxicity after orthotopic liver transplantation. Mt Sinai J Med 1996;63:364-9.
4. Meyers B. Tuberculosis in organ transplant patients. Presented at: World Congress of Transplantation Infectious Disease, Orlando, Fla., April 1-3, 1998.

Treatment of Cutaneous Larva Migrans

To the Editor: Blaum and Omura (June 11 issue)[1] report that they treated a case of cutaneous larva migrans with topical liquid-nitrogen cryotherapy. Apart from cryotherapy, various other therapeutic approaches have been used for this condition, including topical administration of thiabendazole and systemic administration of albendazole, thiabendazole, and ivermectin.[2-5] Since freezing is often ineffective and not devoid of side effects,[3,4] we conducted a prospective study of ivermectin, administered as a single oral dose of 12 mg, to travelers who had returned from various tropical or subtropical destinations.

From 1993 to 1997, we treated 67 consecutive outpatients who had one or more cutaneous larva migrans lesions. Data from 51 patients (28 men and 23 women; age range, 1 to 69 years; median age, 30 years) were available for evaluation. The lesions in 48 patients (94 percent) healed within five days (Fig. 1). Two patients were cured after 7 and 10 days. There were no side effects. Two of the patients in whom the lesions healed had relapses, but were cured within two days after a second round of treatment with the same dose of ivermectin. One other patient had an initial improvement but subsequently had repeated relapses, notwithstanding additional treatments (high-dose ivermectin and prolonged administration of albendazole). Her concurrent use of corticosteroids and azathioprine for Crohn's disease might have had a role in the repeated relapses. Ivermectin has a good safety profile,[5] and we con-

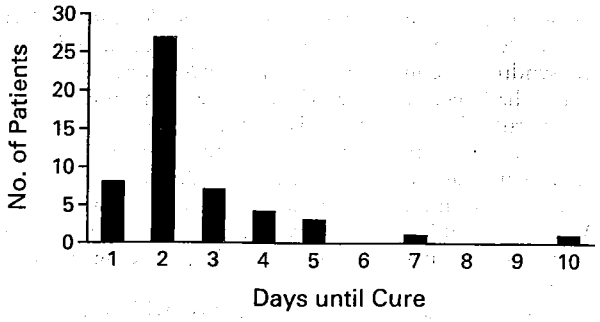

Figure 1. Healing Time for 50 Patients with Cutaneous Larva Migrans Treated with a Single Dose of 12 mg of Ivermectin.

clude that it should be seriously considered as an alternative to cryotherapy for the treatment of cutaneous larva migrans.

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1. Blaum JM, Omura EF. Cutaneous larva migrans. N Engl J Med 1998; 338:1733.
2. Caumes E, Carrière J, Guermonprez G, Bricaire F, Danis M, Gentilini M. Dermatoses associated with travel to tropical countries: a prospective study of the diagnosis and management of 269 patients presenting to a tropical disease unit. Clin Infect Dis 1995;20:542-8.
3. Wolf P, Ochsendorf FR, Milbradt R. Aktuelle Therapiemöglichkeiten bei Larva migrans cutanea. Hautarzt 1993;44:462-5.
4. Davies HD, Sakuls P, Keystone JS. Creeping eruption: a review of clinical presentation and management of 60 cases presenting to a tropical disease unit. Arch Dermatol 1993;129:588-91.
5. Alexander NDE, Bockarie MJ, Kastens WA, Kazura JW, Alpers MP. Absence of ivermectin-associated excess deaths. Trans R Soc Trop Med Hyg 1998;92:342.

The authors reply:

To the Editor: Both albendazole and thiabendazole have long been available for the treatment of cutaneous larva migrans (although albendazole has not been approved by the Food and Drug Administration [FDA] for this indication). Both drugs must be administered in multiple doses or applications. Cryotherapy for the single lesion in our patient was both effective and expedient. Because of the potential for cryotherapy to leave a small focus of altered pigmentation, particularly in persons with darker skin, it may not be a cosmetically acceptable approach in a patient with dozens of larvae. Our patient was seen and his photograph submitted to the *Journal* in 1993, three years before the FDA approved ivermectin for clinical use in the United States. Ivermectin was therefore not a therapeutic option for him.

Although ivermectin is currently approved by the FDA for the treatment of strongyloidiasis and onchocerciasis, it may be beneficial in the treatment of other parasitic infections, including cutaneous larva migrans, scabies, and infestation with lice.[1] The information provided by Van den Enden et al., suggesting an expanded indication for the drug, is welcome.

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1. Drugs for parasitic infections. Med Lett Drug Ther 1998;40(1017):1-12.

Merkel-Cell Carcinomas in Patients Treated with Methoxsalen and Ultraviolet A Radiation

To the Editor: Merkel-cell carcinoma is a very rare small-cell carcinoma of the skin.[1] Probably derived from Merkel cells, the mechanoreceptors located in the basal layer of the epidermis, these tumors are asymptomatic, solitary, small red-purple subcutaneous nodules.[2] Most are found in elderly persons at sites exposed to the sun. The two-year survival rate is about 50 percent.[3] As is the case for non-melanoma skin cancers, especially squamous-cell cancers, exposure to ultraviolet radiation and, possibly, ionizing radiation are risk factors for Merkel-cell carcinoma.

Since 1975, we have prospectively studied 1380 patients with psoriasis who were treated with oral methoxsalen (psoralen) and ultraviolet A photochemotherapy at 16 university centers to assess the long-term risks and benefits of ultraviolet A radiation.[4] Merkel-cell carcinomas have developed in three of these patients (0.2 percent), suggesting that ultraviolet A photochemotherapy increases the risk of these rare tumors (Table 1). All three patients were elderly and had had non-melanoma skin cancers after exposure to ultraviolet A photochemotherapy. Only one patient reported exposure to ionizing radiation for the treatment of psoriasis. Two had received more than 300 treatments with ultraviolet A radiation. In two of the three, Merkel-cell carcinoma developed more than 20 years after they had started ultraviolet A photochemotherapy.

In this cohort, the incidence of Merkel-cell carcinoma is about 100 times higher than that expected in the general population.[1] Although we cannot exclude other causes of these tumors in the three patients, including exposure to other potential carcinogens for the treatment of psoriasis,

TABLE 1. CHARACTERISTICS OF THREE PATIENTS WITH MERKEL-CELL CARCINOMA IN THE FOLLOW-UP STUDY OF ULTRAVIOLET A PHOTOCHEMOTHERAPY.

PATIENT NO.	AGE (YR)/ SEX	OTHER SKIN TUMORS		OUTCOME
		SQUAMOUS-CELL CANCER	BASAL-CELL CANCER	
		no. of tumors		
1	69/F	1	5	Death from unrelated causes
2	80/M	35	25	Death from metastatic disease
3	80/M	0	3	Death from metastatic disease