

Crusted Scabies and Multiple Dosages of Ivermectin

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ABSTRACT

We present the case of a bone marrow transplant patient who was diagnosed with crusted scabies but did not respond to the usual approach with topical permethrin and ivermectin. The Centers for Disease Control and Prevention were contacted and suggested a 7-dose regimen of ivermectin. The patient started to improve remarkably after the third dose, and the skin eruption was resolved after 7 doses. This case supports the use of a more prolonged course of oral ivermectin for crusted scabies in those who fail the conventional approach.

J Drugs Dermatol. 2013;12(5):584-585.

CASE REPORT

A 61-year-old man was referred from the oncology department for a generalized, highly pruritic eruption of 8 weeks' duration. Three months earlier, he had successfully received an allogeneic bone marrow transplant to treat acute myelocytic leukemia; he was currently on immunesuppressant medications. The eruption began on his chest and gradually spread over his torso and both extremities. Topical triamcinolone and permethrin provided only minimal relief. Of note, his wife also complained of a pruritic rash over this same time frame. On physical examination, several erythematous hyperkeratotic plaques were noted on his upper trunk and upper thighs (Figure 1). Several erythematous papules and excoriations were present on his wife's abdomen and upper and lower extremities. Microscopic evaluation of skin scrapings from the patient using a mineral oil preparation revealed *Sarcoptes scabiei* mites. After the patient failed therapy with appropriately applied topical permethrin, he was prescribed oral ivermectin 15 mg (0.2 mg/kg/dose) every week for 2 weeks. His wife was instructed to see her primary care provider for treatment. The couple was also counseled about how to treat their environment.

Two weeks later, the patient showed neither clinical nor symptomatic improvement. An additional oral dose of ivermectin was prescribed. Despite this third dose, he had no clinical response. The Centers for Disease Control and Prevention (CDC) were consulted for alternative treatment options. Per their recommendation, the patient was treated with a 7-day course of daily oral ivermectin at 0.2 mg/kg/dose. After only the third dose of this regimen, the patient was remarkably improved; the skin eruption was resolved by the seventh dose.

DISCUSSION

Crusted scabies is rare, usually associated with underlying immunodeficiency, and historically, has a 5-year mortality up to 50%. Risk factors causing immunosuppression in patients with crusted scabies include heavy ethanol use, past leprosy, heavy kava use, and diabetes, among others.[1] Very few cases of crusted scabies in patients who have undergone bone marrow transplantation have been previously described in the literature, so we believe this is an uncommon finding.

Ivermectin is a semisynthetic macrocyclic lactone oral antibiotic. By disrupting the function of a class of ligand-gated chloride ion channels, it causes persistent opening of the channels and death of the mite.[2] The serum half-life of ivermectin is 18 hours; elimination occurs through hepatic metabolism and renal excretion of inactive metabolites.[3]

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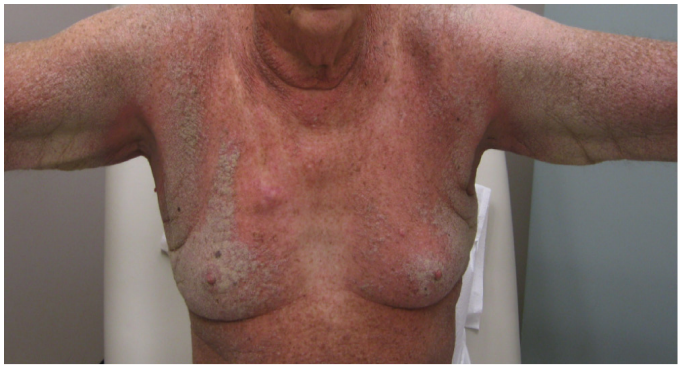
Although crusted scabies is typically recalcitrant to topical therapy, it generally responds to the 2-dose oral ivermectin regimen initially prescribed to our patient.[4] Previous publications[1,5] and the CDC recommend various regimens for the treatment of severe crusted scabies, including topical permethrin 5% applied every 2 to 3 days for 12 weeks with oral ivermectin (200 µg/kg/dose) taken with food, administered as either a 3-dose regimen (days 1, 2, and 8), a 5-dose regimen (days 1, 2, 8, 9, and 15), or

FIGURE 1. Diffuse generalized hyperkeratotic plaques in a patient with crusted scabies.



a 7-dose regimen (days 1, 2, 8, 9, 15, 22, and 29), depending on the severity of the infestation.[5] However, the grade of severity was not specified in these publications.

Although ivermectin is not approved by the US Food and Drug Administration for use in scabies, current literature supports its safety and efficacy. To maximize bioavailability, ivermectin should be administered with food.[5] Our patient did not have any liver disease, but it is important to highlight that caution is advised when administering multiple doses of ivermectin in patients with severe liver disease.[5]

Our case supports the use of a more prolonged course of oral ivermectin for crusted scabies in those who fail the initial 2-dose regimen. It is also an unusual case that demonstrates the effectiveness and safety of ivermectin in an uncomplicated bone marrow transplant recipient. More studies are necessary to provide a grading scale to determine the severity of crusted scabies and to evaluate which dosing regimen would be best, given a specific severity.

DISCLOSURES

The authors have no relevant conflicts of interest to disclose.

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