



Case Report

Eczematous reaction to IVIG for the treatment of dermatomyositis^{☆,☆☆}J. Berk-Krauss^{a,b}, K. Lee^c, K.I. Lo Sicco^a, T.N. Liebman^{a,*}^a The Ronald O. Perelman Department of Dermatology, New York University School of Medicine, New York, New York^b Yale School of Medicine, New Haven, Connecticut^c Division of Rheumatology, Department of Medicine, New York University School of Medicine, New York, New York

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ABSTRACT

The use of high-dose intravenous immunoglobulin (IVIG) is an accepted therapy for patients with refractory dermatomyositis. Cases of eczematous reactions to IVIG have been reported in the literature, but to our knowledge, none in patients being treated for dermatomyositis. We report on the cases of two female patients with refractory dermatomyositis who developed pruritic, scaly pink plaques after receiving high-dose IVIG. This diffuse eczematous skin reaction to high-dose IVIG is a rare adverse event that most often occurs days after administration of therapy. Practitioners should be aware of this entity because the eczematous eruption may be extensive and can commonly worsen with subsequent re-exposure to IVIG.

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Introduction

Intravenous immunoglobulin (IVIG) is an accepted off-label immunomodulatory therapy for patients with refractory dermatomyositis (Dalakas et al., 1993). The most common adverse reactions to IVIG are mild and transient, present in approximately one-third of patients, and include fatigue, chills, headache, myalgias, and nausea (Brannagan et al., 1996; Gerstenblith et al., 2012; Kazatchkine and Kaveri, 2001; Orbach et al., 2005). Rare side effects include aseptic meningitis, hemolytic anemia, thrombosis, anaphylactic shock, and acute renal failure (Brannagan et al., 1996; Gerstenblith et al., 2012; Misbah and Chapel, 1993; Orbach et al., 2005; Tan et al., 1993). Cutaneous adverse events can occur in up to 6% of patients, with reports of morbilliform eruptions, pruritus, urticaria, alopecia, and erythema multiforme (Brannagan et al., 1996; Chan-Lam et al., 1987; Gerstenblith et al., 2012; Misbah and Chapel, 1993; Orbach et al., 2005; Rodeghiero et al., 1988; Vecchiotti et al., 2006).

Although rare, eczematous eruptions have been described in patients treated with IVIG. The most extensive literature review of

eczematous skin reactions to IVIG was conducted in 2011. Of the 64 identified cases, 86% were treated for neurologic diseases (none for dermatomyositis) and the vast majority of eczematous eruptions (77%) occurred within 8 days of treatment (Gerstenblith et al., 2012). We present the cases of two female patients with dermatomyositis who developed eczematous eruptions that appeared after receiving IVIG.

Case 1

A 42-year old woman with a history of dermatomyositis presented to her rheumatologist for a flare up of arthritis, fatigue, and Gottron's papules while on methotrexate 20 mg and long-standing systemic steroids. Methotrexate was discontinued due to pulmonary basilar fibrosis that was evident on a computed tomography (CT) scan, and she was started on IVIG 2 g/kg divided over 2 consecutive days.

Seven weeks after the IVIG infusion, while tapering off of prednisone, the patient developed a pruritic, scaly eruption on the face, trunk, palms, arms, and legs. Her cutaneous symptoms initially improved with topical hydrocortisone. However, 1 week later, this eruption recurred 2 days after receiving the second IVIG course while off of systemic steroids.

On physical examination after the second eruption, the patient had diffuse erythematous scaly plaques on the trunk and the bilateral

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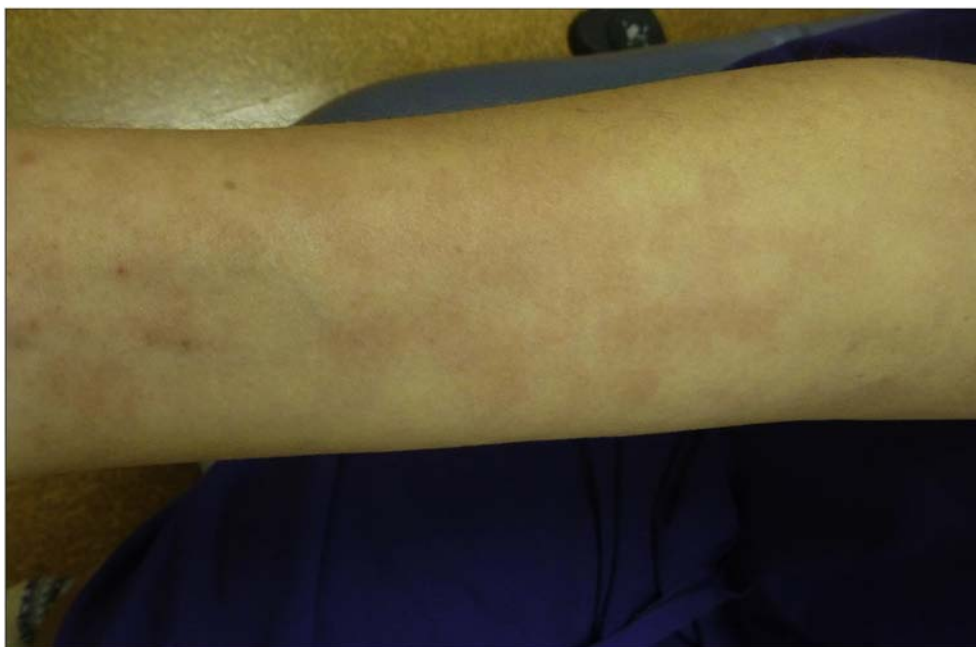


Fig. 1. Eczematous eruption of patient 1: Representative clinical image of right ventral forearm

upper and lower extremities (Fig. 1) as well as mild desquamation on the lips and scaling at the lateral edge of the right palm. Baseline dermatomyositis findings of Gottron's papules over the dorsal surface of the metacarpophalangeal joints were also noted.

The patient reported no further cutaneous reactions after her third and fourth IVIG treatments, which were administered over 4 days and when she was no longer taking systemic steroids. She did experience an improvement in her skin and articular disease.



Fig. 2. Eczematous eruption of patient 2: Representative clinical image of left axilla



Fig. 3. Eczematous eruption of patient 2: Representative clinical image of left second digit

Case 2

A 27-year old woman presented to her dermatologist with refractory dermatomyositis. Previous therapies included hydroxychloroquine, which caused a cutaneous reaction, and methotrexate, which resulted in no clinical improvement. She was started on IVIG 2 g/kg divided over 3 days.

One week after the first IVIG dose, the patient developed a pruritic eruption on the neck and small, clear vesicles on the hands. There was no involvement of the feet. After topical triamcinolone treatment, the patient reported some improvement of the eruption.

On physical examination, erythematous scaly thin plaques on the neck and bilateral axillae were noted (Fig. 2). Small 1 mm to 2 mm vesicles were seen on the bilateral palms and lateral digits (Fig. 3). There were pink to violaceous patches on the bilateral lateral arms, chest, and back that were stable from her prior examination. Baseline dermatomyositis findings of Gottron's papules over the dorsal surface of the metacarpophalangeal joints and faint erythematous patches on the cheeks and nose were reduced in size from the prior examination. There was no visible swelling or tenderness to palpation of the joints.

The patient reported a subtler reaction to her subsequent IVIG dose, which was administered over 4 days. She experienced only mild pruritus and a few vesicles on bilateral palms.

Discussion

IVIG is an accepted therapy for patients with a variety of autoimmune, inflammatory, dermatologic, hematologic, and neurologic disorders (Kazatchkine and Kaveri, 2001). One such example is

dermatomyositis. Dermatologists should be aware that IVIG can cause rare dermatologic side effects, including this entity of diffuse eczematous skin eruption. This reaction most often occurs within days after administration of therapy, typically beginning as dyshidrotic lesions on the palms or soles with subsequent progression into a more diffuse eczematous eruption (Vecchiotti et al., 2006). Systemic glucocorticoids may be used as complementary therapy in patients with dermatomyositis and thus could mask or delay rare but significant immune-mediated adverse reactions to IVIG. Patient 1 experienced a delayed reaction to high-dose IVIG that occurred several weeks after dose administration and at the end of her prednisone taper.

The exact mechanism of this cutaneous reaction has not been established. However, the eruption typically wanes over a period of a few weeks in response to topical steroids (Gerstenblith et al., 2012; Vecchiotti et al., 2006). Since the eczematous reaction is often manageable, IVIG is commonly recommended to be continued for patients who demonstrate clinical improvement (Gerstenblith et al., 2012). Switching the type of IVIG preparation has resulted in variable responses in the literature (Gerstenblith et al., 2012). Both of our patients experienced either no or less of a reaction when the same IVIG preparation was administered over a longer time course. Dermatologists should be aware of this entity as the eczematous eruption may be extensive and can worsen with subsequent re-exposure to high-dose IVIG.

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