



<http://dx.doi.org/10.1016/j.jemermed.2016.07.083>

Clinical Communications: Adult

ALLERGIC CONTACT DERMATITIS FROM TOPICAL ACYCLOVIR: CASE SERIES

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Abstract—Background: Despite the widespread use of oral or topical acyclovir, allergic contact dermatitis caused by it has been rarely reported, with fewer than 20 case studies published in the English literature to date. **Case Reports:** A diagnosis of allergic contact dermatitis from acyclovir cream was established in a 62-year-old female patient who had been continuously using acyclovir cream for 3 weeks after systemic therapy for herpes zoster with acyclovir, and in a 35-year-old female patient, who had undergone liver transplantation in 2008 and subsequently developed a severe form of herpes zoster treated orally with 4 g/day acyclovir and prolonged topical administration of acyclovir cream. In both cases, patch tests were performed with extended European Baseline Series, with the excipients of acyclovir cream (propylene glycol, sodium lauryl sulfate, cetostearyl alcohol, dimethyl sulfoxide) and commercial cream containing acyclovir 2%. Positive reactions were obtained only with the commercial cream with acyclovir 2%. **Why Should an Emergency Physician Be Aware of This?:** Allergic contact dermatitis caused by acyclovir is rarely reported and frequently misdiagnosed, despite the wide use of oral or topical acyclovir. Allergic contact dermatitis due to acyclovir applied topically is a clinical problem with which health care providers should be familiar, and which prompts patch testing in suspected patients. Knowledge and education focused on allergens are important to clinicians in daily practice. © 2016 Elsevier Inc. All rights reserved.

Keywords—allergic contact dermatitis; acyclovir; topical treatment

INTRODUCTION

Despite the widespread use of oral or topical acyclovir, allergic contact dermatitis caused by it has been rarely reported, with fewer than 20 case studies published in the English literature to date (1–5).

CASE REPORTS

A 62-year-old female patient was diagnosed by her general practitioner with herpes zoster 4 weeks prior to presentation to the dermatologist. After the diagnosis she received oral acyclovir 2 g daily for 7 days, and she continued applying acyclovir topically for the following 3 weeks, three times per day, as self-medication, with favorable evolution.

She presented to the Emergency Unit of the Dermatological Department for intense pruritus and large erythematous-edematous plaques confined to the sites of previous topical application of acyclovir for herpes zoster. Swollen and erythematous skin was observed in the left axillary region, on the back, and on the left hypotenar eminence. The patient admitted using the acyclovir cream daily on the specific sites previously affected by zoster lesions (Figure 1). She had no history of allergic diseases, or drug intake, and she was otherwise in good general health. Routine laboratory investigations, including HIV test,



Figure 1. Patient 1, with large erythematous plaques on the site of previous herpetic lesions in the left hypotenar eminence (A), on the back (B), and in the left axillary region (C); acyclovir cream can be seen in the axillary region (C).

were within normal limits. A diagnosis of allergic contact dermatitis to acyclovir cream was presumed and antihistamines at night and topical steroid cream were recommended for 10 days, with positive outcome.

Three weeks after stopping the medication, the components of the acyclovir cream (propylene glycol, sodium lauryl sulfate, cetostearyl alcohol, dimethyl sulfoxide) and the entire acyclovir cream were patch tested, and the patient only reacted to the entire cream (commercial cream, with acyclovir 2% used by the patient) with extended European Baseline Series. This consists of a set of allergens to which all patients diagnosed clinically with allergic contact dermatitis should be tested to identify its cause. Standard or baseline series of allergens are recommended for use in every patient undergoing patch testing because these include the most common and important allergens that cause dermatitis.

Allergic contact dermatitis to topical acyclovir was confirmed.

A second patient, a 35-year-old woman, had undergone liver transplantation in 2008 and was enrolled in the therapeutic protocol based on once-daily extended-release tacrolimus. She was referred to the Dermatology Department for large erythematous plaques on the left side of the abdominal area, associated with intense pruritus and anxiety (Figure 2). Two weeks prior to the examination, she had been diagnosed with herpes zoster and treated with acyclovir orally 4 g/day for 10 days associated with topical acyclovir cream (2% concentration, same cream and same brand as used by the first patient) administered locally five times a day. As self-medication, after she was discharged from the hospital, she continued to apply acyclovir cream to the site of the previous herpes zoster eruption for the following 2 weeks. Three weeks after the initial diagnosis of herpes zoster, she was again hospitalized for pruritus and large erythematous plaques localized strictly to the abdominal area where she had continued topical treatment with acyclovir. Laboratory tests performed in the Emergency Department were within normal ranges; oral antihistamines and steroids were recommended for the following 10 days, with positive

outcome and strict avoidance of acyclovir cream. One month later, minor xerosis was noticed on the skin and patch tests were performed in the Allergy Department, following the same protocol as in the previous case. Reactions proved to be positive to 2% acyclovir cream and negative to the other components. A diagnosis of allergic contact dermatitis to acyclovir was agreed upon.

DISCUSSION

Contact dermatitis induced by acyclovir remains possibly misdiagnosed or unreported, in consideration of the great number of prescriptions of this medication throughout the world. Moreover, published studies report a small percentage of positive patch tests, and most of the sensitivity has been proven to be against the vehicle components (3).

The present case series emphasizes the possibility of an allergic contact reaction induced by a widely used antiviral drug: acyclovir. Patch tests were positive to acyclovir and negative to the vehicle. Skin lesions and pruritus resolved with discontinuation of the offending



Figure 2. Patient 2, with large erythematous plaques on the left side of the abdominal area.

agent, topical application of corticosteroids, and systemic administration of antihistamines.

WHY SHOULD AN EMERGENCY PHYSICIAN BE AWARE OF THIS?

Despite the wide use of oral or topical acyclovir, allergic contact dermatitis caused by acyclovir is rarely reported. Allergic contact dermatitis from acyclovir applied topically is a clinical problem with which health care providers should be familiar, and patch testing can be carried out in suspected patients.

Moreover, knowledge and education focused on allergens are important to clinicians in daily practice.

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