

Paint-Related Methylisothiazolinone Allergy in the United States

Jacob Griggs, BA, Hind Almohanna, MD,
Azhar Ahmed, MD, and Antonella Tosti, MD

PRECÍS

Paint-related methylisothiazolinone allergy is a well-recognized problem in Europe but is very rarely reported in the United States.

DISCUSSION

A 63-year-old woman was referred by her primary dermatologist for an airborne distributed rash involving her face, arms, and chest. Patch testing resulted in a 3+ reaction to methylisothiazolinone 0.2% aqueous (Chemotechnique) at D2 and D4. Methylisothiazolinone + methylchlorisothiazolinone 0.02% was negative.

Careful history revealed the rash started shortly after her brother began painting his house with Behr indoor paint (Premium Plus Interior Semi-Gloss Enamel Ultra Pure White 3050, Premium Plus Interior Flat Ultra Pure White, Premium Plus Interior Semi-Gloss Natural Almond PPU4-13u). The manufacturer was contacted and confirmed that nearly all the paint products contain isothiazolinones including methylisothiazolinone, either as a preservative of the paint or as ingredients of the raw materials, such as resin or pigment. In a previous study, analysis of 4 samples of Behr interior paint detected methylisothiazolinone in a range of 50 to 100 ppm.¹ Behr paint is popular in the United States and is widely available at home goods stores, such as Home Depot.

The patient was prescribed triamcinolone ointment and instructed to avoid her brother's house. At 2-month follow-up, her rash had completely cleared.

Methylisothiazolinone is a preservative used in many personal care, household, and industrial items. In the past several years, its use in various products has increased, resulting in an increased frequency of contact allergy particularly in Europe. Methylisothiazolinone easily evaporates and has been reported to cause airborne allergic contact dermatitis, asthma symptoms, and systemic allergic contact dermatitis.²

A common source of methylisothiazolinone contact allergy is water-based paints. A 2018 study in Denmark, France, Germany, Sweden, and the United Kingdom identified methylisothiazolinone in 55 (91.7%) of 60 water-based white wall paints in concentrations from 1.1 to 142.7 ppm.³ In a chemical analysis of 47 commercially available water-based paints in the United States, 96% of the paints contained methylisothiazolinone, with concentrations ranging from 17 to 358 ppm.⁴ Concerningly, only 15% of the corresponding Safety Data Sheets disclosed isothiazolinone content. The emission of methylisothiazolinone from paints peaks in the first several hours after application but continues at a slower rate for more than 42 days.⁵ Thus, a freshly painted room may cause low levels of exposure for a long duration.

A retrospective study in Europe identified 44 patients who experienced airborne allergic contact dermatitis from exposure to paint containing methylisothiazolinone, most of whom were exposed in a private, nonoccupational setting, such as at home.⁶ In 52.3% of the cases, allergic symptoms started 1 to 3 days after exposure, but a few patients experienced a longer delay of 13 to 21 days. Topical corticosteroids were required in 42 of 44 patients.

Up until recently, allergic contact dermatitis to methylisothiazolinone from paint had been reported only in Europe. In 2017, Goodier et al¹ reported the first case of paint-related methylisothiazolinone allergy in the United States. The reported patient experienced a rash that started on the face and subsequently became generalized, coinciding with moving into a new residence and painting her new home.

To our knowledge, the case we report is the second reported instance of methylisothiazolinone allergy from paint exposure in the United States. The large scope of the problem in Europe and the presence of methylisothiazolinone in American paint are evidence that paint-related methylisothiazolinone allergy is likely an underdiagnosed problem in the United States.

ZEBRA

Methylisothiazolinone allergy should be considered in patients presenting with a rash suggestive of airborne allergic contact dermatitis, and they should be asked about paint exposure.

ACKNOWLEDGMENTS

The authors thank the staff of the clinics at the University of Miami Hospital for their help and support.

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From the Dr Phillip Frost Department of Dermatology and Cutaneous Surgery, University of Miami, Miller School of Medicine, FL.

Address reprint requests to Jacob Griggs, BA, Dr Phillip Frost Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, 1475 NW, 12th Ave Suite 2175, Miami, FL 33136. E-mail: jwg63@med.miami.edu.

The authors have no funding or conflicts of interest.

DOI: 10.1097/DER.0000000000000492

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Allergic Dermatitis to Dyclonine (Dyclonaine)

Rebecca S. Kimyon, BS,*† Jamie P. Schlarbaum, BS,*†
Yujie Linda Liou, DO,* Erin M. Warshaw, MD, MS,*†‡
and Sara A. Hylwa, MD*

PRECÍS

We report a case of a positive patch test reaction to dyclonine, a topical anesthetic.

A 56-year-old woman presented with a 2.5-year history of a pruritic, papular facial rash that had recently spread to her bilateral armpits and shins. She had tried several over-the-counter treatments, including hydrocortisone cream, diphenhydramine cream, and Ambix First Aid Antiseptic and Pain Relieving Cream. Prescription treatments included tacrolimus ointment, pimecrolimus cream, mometasone ointment, triamcinolone ointment, and desonide ointment. None of these treatments had clear benefit.

The result of her physical examination was notable for a light pink hue to the face with xerosis and small crusts on the lips. There was a 1-inch pink patch in the left axillary vault, circumferential areas of postinflammatory changes, and scattered pink papules on the anterior shins.

Because of concern for allergic contact dermatitis, she was patch tested to the 2019–2020 North American Contact Dermatitis Group screening series, in addition to our clinic's panels of corticosteroids, preservatives, emulsifiers, hairdressing chemicals, medicaments, and sunscreens, as well as her own personal products.

Final patch test results on day 7 showed the following: strong (++) reactions to nickel, cobalt, and the Ambix cream (tested as is); mild (+) reactions to linalool, benzophenone-4, gold, and povidone-iodine; and a doubtful (+/-) reaction to her



Figure 1. Ambix First Aid Antiseptic and Pain Relieving Cream product label.

From the *Park Nicollet Contact Dermatitis Clinic; †University of Minnesota Medical School; and ‡Department of Dermatology, University of Minnesota, Minneapolis.

Address reprint requests to Rebecca S. Kimyon, BS, Park Nicollet Contact Dermatitis Clinic, 7550 34th Ave S, Suite #101, Minneapolis, MN 55450. E-mail: Kimyo002@umn.edu.

The authors have no funding or conflicts of interest to declare.

DOI: 10.1097/DER.0000000000000522

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Suave Cucumber Agave Smash Body Wash (tested semiopen).

Per the packaging, the Ambix cream contains the active ingredient dyclonine hydrochloride 0.5%, as well as several other ingredients (Fig. 1). Because she tested negative to other ingredients in Ambix cream (including allantoin, benzyl alcohol, EDTA, triethanolamine, mineral oil, paraben mix, stearyl alcohol, and mineral oil), we suspected allergy to the active ingredient, dyclonine hydrochloride.