

-  [My Cart](#)
- [My Profile](#)
- [Log In](#)
- [Athens Log In](#)

- [My Profile](#)
- [Log In](#)
- [Athens Log In](#)



[HOME](#)
[ABOUT US](#)
[CONTACT US](#)
[HELP](#)

[Home](#) / [Medical, Veterinary and Health Sciences](#) / [Dermatology](#)

JUMP TO:

Journal der
Deutschen
Dermatologischen
Gesellschaft

ISSN: 1610-0387 (Online)
ISSN: 1610-0379 (Print)

Volume 9999, Issue 9999,
2008.

Pages: ???-???

- [Top of Page](#)

- [Abstract](#)

- [Introduction](#)

- [Case report](#)

- [Discussion](#)

- [Conflict of interest](#)

- [References](#)

Tables: [1](#)

[Abstract Only](#)



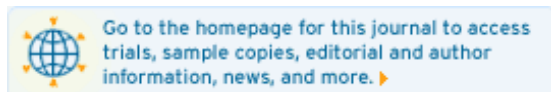
Enter
words
or
phrases

 [What is RSS?](#)

 e-mail  print

[Early View](#) (Articles online in advance of print)

Published Online: 27 Nov 2008



SEARCH ☒ All Content

☐ Publication
Titles

- [Advanced Search](#)
- [CrossRef / Google Search](#)
- [Acronym Finder](#)

 [Save Article to My Profile](#)  [Download Citation](#)

< [Previous Article](#) | [Next Article](#) >

[Abstract](#) | [References](#) | Full Text: HTML , [PDF](#) (427k)

[View Full Width](#)

Allergic contact dermatitis from EMLA cream: concomitant sensitization to both local anesthetics lidocaine and prilocaine

Martine W.H. Timmermans¹, Derk P. Bruynzeel¹, Thomas Rustemeyer¹
(1)Department of Dermatology and Allergology, VU University Medical Centre, Amsterdam

Correspondence to
Dr. Martine W.H. Timmermans
Department of Dermatology and
Allergology
VU University Medical Centre
De Boelelaan 1117
NL-1081 HV Amsterdam
The Netherlands
E-Mail: mwh.timmermans@vumc.nl

KEYWORDS

allergic contact dermatitis • EMLA cream • prilocaine • lidocaine

ABSTRACT



Local anesthetics are widely used drugs. In contrast to the local anesthetics of the ester group, the ones of the amide group (for example prilocaine and lidocaine) are considered to be rare sensitizers. Positive patch test results to both prilocaine and lidocaine in EMLA cream might indicate potential cross-reactivity.

Submitted: 28.8.2008 | Accepted: 12.9.2008

DIGITAL OBJECT IDENTIFIER (DOI)

Introduction



According to the literature, EMLA[®] cream-induced contact dermatitis is rare [1–3]. Here, we report on a patient who had a "history" of positive patch test results to EMLA cream and in whom we could show a positive reaction to both of its constituents lidocaine and prilocaine.

Case report



An 80-year-old lady with persistent local pain on her left thorax after clinical clearance of herpes zoster started to apply EMLA cream once a day. After ten days, she developed erythema and inflammation at the application site; it cleared completely after treatment with topical corticosteroids for several days. She had never experienced reactions to local anesthetics at the dentist or during surgery in the past nor did she have a history of any other skin disorder.

One month after the reaction, patch tests with EMLA cream and lidocaine were positive. Three months later, she was referred to our department for further investigations. She was patch tested with the European baseline series (Trolab, Hermal, Reinbek, Germany) and to the constituents of EMLA cream including lidocaine 1% and prilocaine 5% in petrolatum (VU University medical pharmacy) and other local anesthetics (Table 1) in Van-der-Bend square chambers (Brielle, The Netherlands) on Fixo-mull stretch (BSN, Almere, The Netherlands) with 1 day occlusion. EMLA cream itself was not tested again as it had been found positive before. Tests were read on days 1 (DI) and 4 (D4). Positive reactions were found to both lidocaine 1% (DI -, D4 ++) and prilocaine 5% (DI -, D4 +) (table 1). All other test materials were negative.

Table 1: Local anaesthetics series (VU University medical pharmacy), results of patch testing.

allergen	%	vehicle	reading DI	reading D4
<i>amide derivatives</i>				
lidocaine	1.0	petrolatum	–	++
prilocaine	5.0	petrolatum	–	+
articaine	2.0	aqua	–	-
bupivacaine	2.0	aqua	–	-
<i>quinolone derivate</i>				
cinchocaine	5.0	petrolatum	–	-
<i>ester derivatives</i>				
benzocaine	5.0	petrolatum	–	-
butylaminobenzoate	2.0	petrolatum	–	-
procaine	1.0	petrolatum	–	-
tetracaine	1.0	petrolatum	–	-

Discussion



EMLA cream functions by releasing lidocaine and prilocaine (eutectic mixture) from the vehicle into the skin [1]. The topical analgesic and anesthetic effects have led to many therapeutic uses, including single application before minor dermatological procedures as well as in anti-hemorrhoidal ointments [4]. Cutaneous adverse effects are rare [1–3]. Local anesthetic molecules contain three distinct moieties: an aromatic part, an intermediate chain and an amine group. The intermediate chain is either an amide or an ester, creating two distinct groups [5, 6]. Both prilocaine and lidocaine belong to the amide group of local anesthetics and show structural similarity (chemical structures are given in reference [2]).

In contrast to the former frequently used local anesthetics with an ester part (e. g. procaine and benzocaine), local anesthetics of the amide group are considered to be rare sensitizers [2, 3, 7, 8] and are rarely responsible for allergic reactions. Allergic contact dermatitis due to prilocaine has been reported in relation to EMLA cream [9, 5, 6]. To our best knowledge, this is the first report on simultaneous positive patch test reactions to both prilocaine and lidocaine after using EMLA cream. Some reports of lidocaine sensitivity [4] have described cross-reactivity to prilocaine and other amide anesthetics, indicating the

potential cross-reactivity [9, 10]. For a complete allergological evaluation, testing with other constituents of EMLA cream (carboxypolymethylene, for example.) might be of clinical relevance. With respect to our patient, she will undergo a use test with articaine in order to find a safe alternative local anesthetic for future use. "<

Conflict of interest



None.

References



- 1
Perez-Perez L C, Fernandez-Redondo V, Ginarte-Val M, Paredes-Suarez C, Toribio J. Allergic contact dermatitis from EMLA cream in a hemodialyzed patient. *Dermatitis* 2006; 17: 85–7. [Links](#) [Links](#)
- 2
Gonzalez Mahave I, Lobera T, Blasca A, Del Pozo MD. Allergic contact dermatitis caused by cinchocaine. *Contact Dermatitis* 2008; 58: 55–8. [Links](#) [Links](#)
- 3
Thyssen J P, Menne T, Elberling J, Plaschke P, Johansen J D. Hypersensitivity to local anaesthetics-update and proposal of evaluation algorithm. *Contact Dermatitis* 2008; 59: 69–78. [Links](#) [Links](#)
- 4
Lodi A, Ambonati M, Coassini Z, Kouhdari Z, Palvarini M, Crosti C. Contact allergy to caines caused by antihemorrhoidal ointments. *Contact Dermatitis* 1999; 41: 221–22. [Links](#) [Links](#)
- 5
Van Den Hove J, Decroix J, Tennstedt D, JM Lachapelle. Allergic contact dermatitis from prilocaine, one of the local anaesthetics in Emla[®] cream. *Contact Dermatitis* 1994; 30: 239. [Links](#) [Links](#)
- 6
Thakur B K, Murali M R. Emla[®] cream induced allergic contact dermatitis: a role for prilocaine as an immunogen. *J Allergy Clin Immunol* 1995; 95: 776–8. [Links](#) [Links](#)
- 7
Warshaw EM, Schram SE, Belsito DV DeLeo VA, Fowler JF Jr, Maibach HI, Marks JG Jr, Mathias CG, Pratt MD, Rietschel RL, Sasseville D, Storrs FJ, Taylor JS, Zug KA. Patch-test reactions to topical anesthetics: retrospective analysis of cross-sectional data, 2001 to 2004. *Dermatitis* 2008; 19: 81–5. [Links](#) [Links](#)
- 8
Fisher AA. *Contact Dermatitis*, 5th edition. Philadelphia : Lippincott Williams and Wilkins, 2001; 193–201.
- 9
Garcia F, Iparraguirre A, Blanco J, Alloza P, Vicente J, Bascones O, Carretero P, Juste S. Contact dermatitis from prilocaine with cross-sensitivity to pramocaine and bupivacaine. *Contact Dermatitis* 2007; 56: 120–22. [Links](#) [Links](#)
- 10
Weightman W, Turner T. Allergic contact dermatitis from lignocaine: report of 29 cases and review of the literature. *Contact Dermatitis* 1998; 39: 265–6. [Links](#) [Links](#)