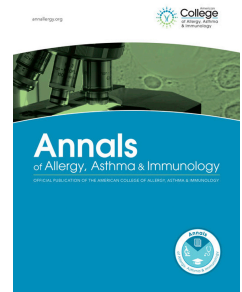


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35 preparation and revision of manuscript
- 36

1 Lidocaine is widely used in the peri-procedural setting for pain control.

2 Local anesthetics (LA) are generally well tolerated, and allergic reactions

3 reported are less than 1 % (1). Symptoms range from skin erythema,

4 urticaria to anaphylactic shock (2-4). There have been no reported cases of

5 allergic reactions to oral viscous lidocaine. We present the first case of a

6 delayed, protracted allergic reaction to oral viscous lidocaine with positive

7 intradermal testing.

8 A 44-year-old woman with a history of allergic rhinitis on SCIT initially

9 presented to emergency room with gastroesophageal reflux symptoms. The

10 patient was given maalox and an unknown dose of 2% oral viscous lidocaine

11 (20 mg/ml) with 0.1% methylparaben solution. Approximately 2.5 hours

12 post-ingestion of the oral viscous lidocaine, isolated lip swelling developed,

13 followed by an urticarial rash in 24 hours. The patient used over-the-counter

14 benadryl, fexofenadine, and hydrocortisone cream for one week with

15 resolution of symptoms.

16 The patient denied any prior anaphylactic reactions. Prior exposure to local

17 anesthetics included an epidural injection for a cesarean section and multiple

18 dental procedures. The patient underwent skin testing with preservative-free

19 lidocaine at graded dilutions. Skin prick test performed with full-strength

20 lidocaine was negative. Intradermal (ID) testing was done with diluted

lidocaine (1:100), full-strength lidocaine, histamine, and saline control. ID testing with diluted lidocaine showed a 0 mm reaction while full-strength lidocaine demonstrated a 3 mm wheal with erythema reaction (Figure 1). ID testing to histamine and normal saline resulted in a 4 mm wheal with erythema and a 0 mm wheal respectively.

We tested to preservative free lidocaine given that the patient had been exposed to other anesthetics via epidural and dental procedures and had no reaction. As per the practice parameters, any reaction on intradermal testing that is larger than the negative control may suggest a specific IgE antibody existence (5-7). The criterion of 3 mm above the negative control is considered a threshold for a positive intradermal test result (5,6).

Lidocaine is frequently used as a topical and oral anesthetic with a low incidence of reported hypersensitivities in all routes of administration (8). LA's are categorized based on the presence of an ester group. Lidocaine and bupivacaine are examples of amide anesthetics that do not contain an ester group. Amide LA's may contain parabens and/or other preservatives that produce PABA once metabolized (9). PABA has been implicated in allergic reactions. As compared to ester anesthetics, amide anesthetics are less commonly associated with an allergic reaction.

Our patient presented initially with isolated angioedema of the lips 2 hours after a single-dose of 2% oral-viscous lidocaine. Her angioedema resolved with subsequent development of urticarial rash localized to the torso, hands, and feet 24 hours after initial drug exposure. This presentation is consistent with a protracted type 1 hypersensitivity reaction.

A type 1 hypersensitivity reaction refers to an IgE mediated reaction, which can lead to anaphylaxis. An IgE mediated reaction is a continuum with a risk of clinical progression that is often under-estimated (10, 11). The duration of the reaction has been loosely defined. The IgE mediated reaction can take place within minutes to hours leading to the description of a delayed hypersensitivity reaction. Our patient developed lip swelling 2.5 hours after ingestion of oral viscous lidocaine. A protracted IgE mediated reaction can last for hours, days or weeks (12). In our case, the patient developed an urticarial rash that took one week to resolve.

Prior cases have highlighted lidocaine administration via a spray, injection, or topical application (1, 13). Bhole et al. investigated 23 case studies and showed type 1 hypersensitivity reactions to LA's have occurred, although extremely rare (1). Fuzier and colleagues identified 16 cases over a 12-year period in which immediate hypersensitivity reaction to topical LA was reported in 11/16 cases (13). Lidocaine was the main LA involved with

60 symptoms of cutaneous eruptions with wheals, erythema, and edema within
61 one hour of exposure. There has been one reported immediate systemic
62 reaction to oral viscous lidocaine gargle administered prior to an endoscopic
63 procedure in Jerusalem (14). This reaction resolved within 24 hours (14).
64 We report the first documented case of a delayed and protracted type 1
65 hypersensitivity reaction to oral-viscous lidocaine.

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Figure 1. Intradermal testing to Full Strength Lidocaine was positive (2+)

ACCEPTED MANUSCRIPT

