lidocaine/prilocaine (lye-done-kane/pry-loe-kane)
EMLA, Oraqix

Classification
Therapeutic: anesthetics (topical/local)

Pregnancy Category B

Indications
Produce local anesthesia prior to minor painful procedures including: Insertion of cannulas or needles, arterial/venous/femoral punctures, Intramuscular injections, Subcutaneous injections, Laser treatments, Coronary angiography. When applied to painful mucous membranes in preparation for superficial minor surgery or as preparation for infiltration anesthesia. Produce localized anesthesia in peri-odontal pockets during scaling and/or root planing. (Oraqix only.

Action
Produces local anesthesia by inhibiting transport of ions across neuronal membranes, thereby preventing initiation and conduction of normal nerve impulses. Combination of two anesthetics is applied as a system consisting of a cream under an occlusive dressing. Active drug is released into the dermal and epidermal skin layers, resulting in accumulation of local anesthetic in the regions of dermal pain receptors and nerve endings. Therapeutic Effects: Anesthetic action localized to the area of the application.

Pharmacokinetics
Absorption: Small amounts are systemically absorbed.
Distribution: Small amounts absorbed are widely distributed and cross the placenta and blood-brain barrier.
Metabolism and Excretion: Lidocaine—mostly metabolized by the liver. Prilocaine—metabolized by the liver and kidneys.
Half-life: Lidocaine—90–120 min (EMLA); 2–6 hr (Oraqix). Prilocaine—40–50 min (EMLA), 2–6 hr (EMLA). -Cautions drug name - Genetic Implication. CAPI TALS indicate life-threatening, underline indicates most frequent. Strikethrough indicates discontinued.

Indications
Uses:
Therapeutic: anesthetics (topical/local)

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Table: Time/Action Profile (local anesthesia)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>Top</td>
<td>1 hr</td>
<td>EMLA</td>
<td>3 hr</td>
</tr>
<tr>
<td></td>
<td>30 sec</td>
<td>Oraqix</td>
<td>1-2 hr</td>
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<tr>
<td></td>
<td></td>
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<td>20 min</td>
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Following removal of occlusive dressing

Contraindications/Precautions
Contraindicated in: Hypersensitivity to lidocaine, prilocaine, or any other amide-type local anesthetic; Hypersensitivity to any other product in the formulation; Should not be applied to middle ear, mucous membranes, or broken/inflamed skin. Pediatric: Children under 12 mo receiving methemoglobin-inducing agents.

Use Caution in: Repeated use or use on large areas of skin (more likely to result in systemic absorption); Acutely ill, or debilitated patients (more likely to result in systemic absorption). Adult: Cardiac arrhythmias (caution); Severe liver disease; Any conditions associated with methemoglobinemia (including glucose-6-phosphate dehydrogenase deficiency). OB: Use only if clearly needed. Lactation: Usually compatible with breast feeding (AAP).

Adverse Reactions/Side Effects
Local: Blanching, redness, alteration in temperature sensation, edema, itching, rash, hyperpigmentation. Misc: Allergic reactions including ANAPHYLAXIS.

Interactions
Drug-Drug: Concurrent use with class I antiarrhythmics including mexiletine may result in adverse cardiovascular effects. Concurrent use with other local anesthetics may result in local toxicity. Concurrent use with valproates, acetaminophen, chloropropamide, chloropropamide, chloropropamide, phenobarbital, phenytoin, or quinidine in children the risk of methemoglobinemia (avoid concurrent use in children <12 yrs).

Route/Dosage
EMLA
Topical (Adults and Children): Minor dermal procedures including venipuncture, intravenous cannulation—2.5 g (½ of 5-g tube) applied to 20-25 cm² (2 in. by 1½ in.)
INSTRUCTIONS

TOPICAL

Adult male genital skin—apply a thick layer (1 g/10 cm2) to skin surface for 15 min; local infiltration anesthesia should be performed immediately after removal of cream. Adult female genital mucous membranes—apply a thick layer (5 g) for 5–10 min.

Adults:

1. Apply on gingival margin around the selected teeth using the blunt-tipped applicator included in package; wait 30 seconds, then fill the periodontal pockets with gel using the blunt-tipped applicator until the gel becomes visible at the gingival margin; wait another 30 seconds before starting treatment; maximum recommended dose at one treatment session is 5 cartridges (8.5 g).

2. A 2 in. area of skin, covered with an occlusive dressing applied for at least 1 hr. Major dermal procedures including split-thickness skin graft harvesting—2 g/10 cm2 area of skin, covered with an occlusive dressing for at least 2 hr. Adult male genital skin—apply a thick layer (1 g/10 cm2) to skin surface for 1 hr; local infiltration anesthesia should be performed immediately after removal of cream. Adult female genital mucous membranes—apply a thick layer (1 g) for 5–10 min.

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Potential Nursing Diagnoses

Acute pain (Indications)

NURSING IMPLICATIONS

Assessment

● Assess application site for open wounds. Apply only to intact skin.

● Assess application site for anesthesia following removal of system and prior to procedure.

Implementation

Topical: EMLA:

When used for minor dermal procedures (venipuncture, IV cannulation, arterial puncture, lumbar puncture), apply the 2.5-g tube of cream (1/2 of the 5-g tube) to each 2 in. by 2 in. area of skin in a thick layer at the site of the impending procedure. Remove the center cutout piece from an occlusive dressing (supplied with the 5-g tube) and peel the paper liner from the paper-framed dressing. Cover the lidocaine/prilocaine cream so that there is a thick layer of cream underneath the occlusive dressing. Do not spread out or rub in the cream. Smooth the dressing edges carefully and ensure it is secure to avoid leakage. Remove the paper frame and mark the time of application on the occlusive dressing. Lidocaine/prilocaine cream must be applied at least 1 hr before the start of a minor dermal procedure. EMLA is suitable for use on the patient’s abdomen, flanks, lower back, buttocks, calves, thighs, arms, shoulder, or upper chest. Do not cover the occlusive dressing.

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Lidocaine/prilocaine cream must be applied at least 1 hr before the start of a minor dermal procedure.

For major dermal procedures (skin graft harvesting), follow the same procedure using larger amounts of lidocaine/prilocaine cream and the appropriate-size occlusive dressing. Lidocaine/prilocaine cream must be applied at least 1 hr before major dermal procedures.

Patient/Family Teaching

● Explain the purpose of cream and occlusive dressing to patient and parents. Inform the patient that lidocaine/prilocaine cream may block all sensations in the treated skin. Caution patient to avoid trauma to the area from scratching, rubbing, or exposure to extremes of heat or cold, until sensation has returned.

Home Care Issues: Instruct patient or parent in proper application. Provide a diagram of location for application.

Evaluation/Desired Outcomes

● Anesthesia in the area of application.

Why was this drug prescribed for your patient?