Topical Analgesic: Maxilene ® 4 Cream and EMLA ® cream

Neonatal Policy & Procedures Manual

Policy Group: Neurological

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Purpose
To provide information regarding applying topical analgesic to infants undergoing painful procedures.

Policy Statement
Pain is managed most effectively by preventing, limiting, or avoiding noxious stimuli and providing analgesia. Prophylactic analgesia has an important role with respect to intravenous injections and painful procedures. Analgesics should be given in anticipation of known painful circumstances. Topical or local agents are used when appropriate. This includes the use of Maxilene ® (Lidocaine 4%) and EMLA ® (Lidocaine 2.5% and Prilocaine 2.5%) for any procedure where the skin is punctured and the procedure can wait for 30 minutes. Some procedures might include attempts for IV starts, PICC line insertions, central venous catheter line insertions, venipunctures, and lumbar punctures.

Maxilene ® 4 cream contains lidocaine 40 mg in a cream base consisting of benzyl alcohol, carbomer 940, cholesterol, hydrogenated lecithin, polysorbate 80, propylene glycol, trolamine, vitamin E acetate, and water. EMLA ® cream contains lidocaine 25 mg and prilocaine 25 mg in a cream base consisting of carboxypolymethylene, polyoxyethylene hydrogenated castor oil, carbomer 934, sodium hydroxide, and water.

They provide dermal analgesia by a release of lidocaine and prilocaine from the cream into the epidermal and dermal layers of the skin, and by the accumulation of lidocaine/prilocaine in the vicinity of pain receptors and nerve endings. The onset, depth and duration of dermal analgesia provided by Maxilene ® 4 and EMLA ® cream depends primarily on the duration of application.

The skin of premature infant’s is immature at birth and lacks barrier properties. Skin matures rapidly at delivery over a period of 10 days to 2 weeks. Maxilene ® 4 cream and EMLA ® Cream will be used only on infants delivered at 37 weeks and greater or those infants greater than two weeks of age. Maxilene ® 4 cream and EMLA ® Cream will be applied over potential puncture sites in a thick layer over a 1.5 cm x 1.5 cm area. Since these drugs have potentially cumulative effects especially in acutely ill patients and those with liver disease they will be applied to a maximum of 4 sites every 24 hours. These creams are not applied to skin around the eyes or to irritated or broken skin.

Applicability
All Covenant Health neonatal staff and physicians.
## Equipment

Maxilene ® 4 Cream/EMLA ® Cream  
Small, semi-permeable transparent dressing  
Gloves

## Procedure

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Obtain order for use of Maxilene® 4/EMLA use.</td>
<td>Maxilene ® 4 and EMLA are drugs and must be ordered.</td>
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<tr>
<td>2. Perform hand hygiene and gather supplies.</td>
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<td>3. Identify patient using two patient identifiers</td>
<td>Ensure correct patient</td>
</tr>
<tr>
<td>4. Choose location of skin puncture. Assess skin for suitability of Maxilene ® 4/EMLA use. These creams should not be applied to skin around the eyes or to broken or irritated skin.</td>
<td>Absorption of the creams is enhanced through broken skin and may cause local reactions as well. Discuss with the individual performing the procedure for the correct placement.</td>
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<tr>
<td>5. Apply a thick layer of Maxilene ® 4/EMLA cream to area 1.5 cm x 1.5 cm over the intended puncture site. Maxilene ® 4/EMLA may be applied to a maximum of four sites every 24 hours.</td>
<td>Maxilene ® 4/EMLA has potentially cumulative effects especially in ill patients with liver disease.</td>
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<tr>
<td>7. Monitor for adverse reactions to cream.</td>
<td>The skin at the site of treatment may develop erythema or edema. Allergic and anaphylactoid reactions associated with lidocaine and prilocaine can occur. These may include urticaria, angioedema, bronchospasm, and shock. Prilocaine may also cause methemoglobinemia in neonates due to an immature reductase enzyme pathway.</td>
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<tr>
<td>8. After 30 minutes, remove the dressing and remaining Maxilene ® 4/EMLA cream. Continue with intended procedure.</td>
<td>The onset, depth and duration of dermal analgesia provided by Maxilene ® 4/EMLA cream depends on the duration of the application.</td>
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<tr>
<td>9. Document use of Maxilene ® 4/EMLA on the medication administration record.</td>
<td>A maximum of four doses may be used in a 24 hour period.</td>
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</table>
Related Documents
Adapted with permission from Stollery Children’s Policy and Procedure Manual: 
Maxilene ® 4 Use Policy, December 2010
Maxilene ® 4 Use Procedure, October 2010

RELATED POLICIES AND PROCEDURES
Pain, Assessment and Management
Pain Management
Patient Care Manual #111-90 Medication Administration
Patient Care Manual #V-20 Patient Chart Documentation
Patient Care Manual Policy 111-73 Independent Double Checks – Medication Administration

References


https://online.lexi.com/lco/action/doc/retrieve/docid/pdh_f/2859619


Revisions
Pain Management – Maxilene ® 4 Cream, March 2008
Pain Management – Maxilene ® 4 Cream, Nov 2012
July, 2016
Signing

Original signed

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