



# Rx Update

April/May 2008

Editors: Joan Murhammer, R.Ph., Mary Ross, R.Ph. MBA, Kevin Bebout, R.Ph.

## LIDOCAINE (NASAL ATOMIZED) FOR NASOGASTRIC TUBE PLACEMENT

The placement of nasogastric tubes can cause the patient significant discomfort. A new policy will be implemented on **June 11, 2008**, to permit the utilization of atomized lidocaine to help minimize discomfort associated with nasogastric (NG) tube placement in adult and pediatric patients. When an order is received to place an NG tube, the patient will be assessed for any contraindications to the use of lidocaine. If no contraindications exist, the RN may administer atomized lidocaine per nursing protocol (N-08.091). **It is recommended that topical lidocaine anesthesia be used with all non-emergent NG tubes in which no contraindications exist.**

**Contraindications to the use of nasally atomized lidocaine include:** patients with an allergy/sensitivity to lidocaine or other amide anesthetic agents (e.g., bupivacaine, dibucaine, etidocaine, mepivacaine, prilocaine, or ropivacaine); infants in the NICU; patients who weigh less than 4 Kg; pregnant or lactating women; or pediatric patients with concurrent IV lidocaine infusion. Pharmacy should be consulted if an adult patient is receiving an IV lidocaine infusion. Nasal lidocaine should not be used on non-intact skin in or around nares or nasopharynx or in patients who need feedings or gavage initiated prior to the return of a gag reflex after utilizing atomized lidocaine (generally, gag reflex returns within 45 minutes); however, this does not apply to patients who physiologically do not have a gag reflex prior to insertion of the NG tube. The patient/family may prefer to not use atomized lidocaine.

Lidocaine should be used with caution in patients with cardiovascular disease and those receiving epinephrine or norepinephrine. It may be helpful for patients with asthma or reactive airway disease to utilize a bronchodilator prior to and/or following use of atomized lidocaine. If the patient has a history of nosebleeds with use of atomized lidocaine, consult Pharmacy and the prescriber regarding the potential use of a vasoconstrictor (e.g., phenylephrine nasal spray). The addition of a vasoconstrictor nasal spray may lengthen the time it takes for a gag reflex to return. Signs and symptoms of lidocaine toxicity to monitor are seizure, cardiac arrhythmia/failure, and nausea/vomiting.

**Lidocaine 4% (40 mg/ml) will be available as a pre-filled 60 mg/1.5 ml syringe in adult units and 20 mg/0.5 ml syringe in pediatric units with a mucosal atomization device (MAD300<sup>®</sup>).** The atomizer device should be placed on the syringe and primed before use. Each spray should consist of approximately 0.1 ml (4 mg of lidocaine) by depressing the plunger firmly and quickly. **Note that the syringe may contain more medication than is needed or recommended for the patient.** The maximum recommended dose of lidocaine is 3 mg/Kg (up to a maximum dose of 60 mg or 15 sprays). For patients weighing 12 Kg or more, after 8 sprays (32 mg), the effectiveness should be assessed by waiting approximately 5 minutes after the last spray before checking for numbness/presence of gag reflex. Additional sprays (up to 3 mg/Kg or 60 mg of lidocaine total) may be used if needed. **The total lidocaine dose includes all nares sprayed** (e.g., if one nare is sprayed and the NG tube cannot be placed, before spraying the second nare, it must be ensured that the total maximum dosage of lidocaine has not been reached). Application of atomized lidocaine should not be repeated in less than 2 hours.

The patient's head should be tilted back and the nare through which the NG tube will be inserted sprayed, waiting approximately 30 seconds between sprays. The patient should be encouraged to inhale and swallow any lidocaine that drips into the nasopharyngeal space after each spray. The syringe should be depressed by 0.1 ml increments for each spray. The effectiveness may be variable, so fewer sprays may be used in some patients. NG tube placement can proceed when numbness/lack of gag reflex is present or the maximum number of sprays has been administered. NG placement should be verified per the appropriate adult or pediatric Standards of Practice (see N-06.010, N-CWS-PEDS-07.040). **Atomized lidocaine should not replace non-pharmacological interventions** (e.g., distraction, therapeutic positioning, anticipatory education about the procedure, parent or family presence, childlife involvement, and environmental considerations). If the patient had a gag reflex prior to administering atomized lidocaine, **ensure gag reflex has returned prior to initiating gavage or feedings.**