TITLE: Parenteral Lidocaine for Neuropathic Pain  
NUMBER: MM 20-045 

Effective Date: January 2013  
Applies To: Holders of Medication Manual – Palliative Care Patients (Hospitalized or Home)  

POLICY
1. This policy is intended for use for palliative care patients who are hospitalized or being cared for at home.
2. An infusion device is required for the administration of parenteral lidocaine.
3. Informed consent is required for parenteral infusion of lidocaine.

DEFINITIONS
Opioid Refractory Pain: Pain that persists despite high doses of opioids.

GUIDING PRINCIPLES AND VALUES
1. Parenteral lidocaine is used to relieve neuropathic pain that is refractory to opioids. It acts quickly and is well tolerated. Patients can achieve pain relief with parenteral lidocaine 30 minutes after initiation of the drug. Pain that persists despite high dose opioids is referred to as opioid refractory pain. The mechanism of neuropathic pain relief from lidocaine therapy has yet to be understood.
2. Neuropathic pain results from abnormal nerve function. It can be a result of peripheral or central sensitization of the nervous system. Neuropathic pain can be described as burning, shooting, radiating or electric.
3. Current methods of treating opioid refractory pain include administering adjunctive pain medications (e.g. antidepressants and anti-epileptics) in conjunction with opioids. These drugs often take days to weeks to have an
effect. Some patients have such severe neuropathic pain that they cannot wait until the drugs are titrated to have their pain relieved.

4. Lidocaine is inexpensive, effective and the adverse effects that are related to opioids (sedation, confusion, nausea, and constipation) are less common with lidocaine. Parenteral lidocaine may be effective when opioids are causing unacceptable side effects.

5. If the pain syndrome is intermittent and the loading dose of lidocaine is effective the physician may choose intermittent dosing over a continuous infusion.

6. Continuous infusions can be given subcutaneously and delivered at home assuming a reliable care giver is present.

PROCEDURE

Note: Following the initiation of parenteral lidocaine opioid doses may need to be decreased. If opioid doses are not reduced following the reduction of pain with lidocaine, opioid side effects may occur or worsen (Ferrini, 2000)

INITIATION OF INTRAVENOUS LIDOCAINE INFUSION

Equipment

- Infusion device
- Manufacturer - premixed bag of lidocaine 2g in 500 mL 5% dextrose in water

1. Check the physician’s order (PPO0332MR).
2. Ensure informed consent has been obtained.

2.1. Provide the patient with the Patient Education pamphlet Lidocaine for Pain in Palliative Care (WD85-1429) and document on the consent that the information sheet has been provided to the patient

3. Take and record baseline vital signs including BP, HR, RR and pain score (Lidocaine Documentation Record CD2487MR).
4. Using an infusion device set up an infusion of lidocaine 2 g/500 mL premixed bag.
5. Start a loading dose as per the physician’s orders of 1 – 2 mg/kg IV over 30 minutes.
6. Measure BP, HR and RR every 10 minutes during the loading dose.
7. Assess and document pain 30 minutes after the loading dose is infused.
8. If pain is improved, continue an infusion at 0.5 – 3 mg/kg/h on an infusion device.

8.1. Use the lowest effective dose of the medication to treat the pain.

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Note: Doses above 2 mg/kg/hour are rarely needed.

Note: Infusion rates should be reduced by 50% if the patient has congestive heart failure, liver dysfunction or is older than 70 years.

9. Assess BP, HR and RR, pain score and side effects:
   9.1. Every 15 minutes for 1 hour,
   9.2. Every hour for 4 hours,
   9.3. Every 4 hours while the infusion is running for 3 readings.

10. If the dose is increased repeat the monitoring specified in Procedure #9.

11. If the dose is stable and the patient indicates that pain is controlled, monitor BP, HR, RR, pain score and side effects twice a day.

### INITIATION OF SUBCUTANEOUS LIDOCAINE INFUSION

**Equipment**
- Lidocaine 20 mg/mL infusion bag premixed in pharmacy
- Infusion device

1. Check the physician’s order (PPO0332MR).

2. Ensure informed consent has been obtained.
   2.1. Provide the patient with the Patient Education pamphlet *Lidocaine for Pain in Palliative Care* (WD85-1429) and document on the consent that the information sheet has been provided to the patient.

3. Take and record baseline vital signs including BP, HR, RR and pain score (Lidocaine Documentation Record CD2487MR).

4. Using an infusion device, set up an infusion of lidocaine 20 mg/mL (supplied by pharmacy in a bag).

5. Start a loading dose as per the physician’s orders of 1 – 2 mg/kg subcutaneously over 30 minutes.

6. Measure BP, HR and RR every 10 minutes during the loading dose.

7. Assess and document pain 30 minutes after the loading dose is infused.

8. If pain is improved, continue an infusion at 0.5 – 3 mg/kg/h on an infusion device.
   8.1. Use the lowest effective dose of the medication to treat the pain.

   **Note:** Doses above 2 mg/kg/hour are rarely needed.

   **Note:** Infusion rates should be reduced by 50% if the patient has congestive heart failure, liver dysfunction or is older than 70 years.
9. Assess BP, HR and RR, pain score and side effects:
   9.1. Every 15 minutes for 1 hour,
   9.2. Every hour for 4 hours,
   9.3. Every 4 hours while the infusion is running for 3 readings.
10. If the dose is increased, repeat the monitoring specified in Procedure #9.
11. If the dose is stable and the patient indicates that pain is controlled monitor BP, HR, RR, pain score and side effects twice a day.

DEALING WITH SIDE EFFECTS
1. Be aware of and monitor for potential side effects which include
   1.1. numbness around the mouth
   1.2. tinnitus
   1.3. dizziness
   1.4. slurring of speech
   1.5. lightheadedness
   1.6. redness or swelling at the site
   1.7. headache
   1.8. metallic taste in mouth
   1.9. seizures (rare)
   1.10. anaphylactic reaction
   1.11. cardiovascular – myocardial depression, bradycardia, hypotension, hypertension or cardiovascular collapse
2. If the patient experiences tinnitus, metallic taste in mouth, an increase or decrease in systolic BP greater than 10 mm Hg, lightheadedness, perioral numbness or dizziness, reduce the infusion by 50% and notify the physician.
3. If the patient experiences visual blurring, muscle twitching, seizures or heart rate less than 50, discontinue the infusion and notify the physician.

REFERENCES
Lidocaine Infusion Montreal Sept 2008 Van Guten San Diego Hospice


**RELATED DOCUMENTS**

**Forms**
- PP00332MR Preprinted Lidocaine Orders
- CD2487MR Lidocaine Documentation Record

**Other**
- Patient Brochure - Lidocaine for Pain in Palliative Care (WD85-1429)

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