Intranasal midazolam Formulary Review

An intranasal midazolam formulary review was presented following a request for the addition to the MLH adult formulary by physicians from the emergency department. Intranasal midazolam is a benzodiazepine sometimes used for status epilepticus in patients who lack direct venous access. Recent studies have demonstrated that the intranasal route offers a safe and effective alternative to intravenous (IV) or intramuscular (IM) administration of midazolam in adult and pediatric patients. Intranasal midazolam has been shown to decrease time of seizure cessation by eliminating the time needed to establish IV access. Intranasal administration has a lower incidence of adverse effects such as respiratory depression and sedation, despite the delivery of a higher dose as compared with IV administration. Currently, Methodist Le Bonheur Healthcare uses the intranasal route of midazolam for pain and anxiolysis in pediatric patients. In addition, Memphis Fire Department EMS personnel utilize intranasal midazolam per protocol for patients who are actively seizing while in route to the emergency room. P&T voted to add intranasal midazolam to the adult inpatient formulary (intranasal midazolam is currently on the pediatric formulary). The administration of intranasal midazolam will be restricted to use in adult patients who are actively seizing and lack direct venous access. The use will also be restricted to emergency room attending physicians only.

Clinical Pearls:

Dosing: For patients greater than or equal to 50 kg, use 10 mg intranasal for 1 dose. For patients less than 50 kg, use 5 mg intranasal for 1 dose. Intranasal midazolam may be repeated times 1 dose, with a maximum of 2 doses total by with ED staff and/or EMS. If patient continues to seize, consider alternative therapy.

Administration: Draw up dose in an 1-3 luer lock syringe, attach Mucosal Atomization Device to syringe, and then quickly press syringe plunger to deliver medication into the nasal passage. Alternate nostrils based on total volume of dose – Do not exceed 1ml per nostril per administration.

Monitoring: Monitor for seizing cessation with minutes of administration (onset of action-3-5 minutes, time to peak effect- 10-15 minutes, and duration of effect -30-45 minutes), vital signs (including respiratory rate), and adverse effects

Most Common Adverse Effects: Drowsiness, nasal irritation, and epistaxis

Exclusion criteria (per MD discretion): Hypersensitivity to midazolam, airway abnormalities, pre-existing respiratory distress, severe upper airway congestion or obstruction, dysphagia or aspiration concerns.

Implementation date is pending, and further education will be provided to ED staff prior to implementation
Benadryl, Ativan, and Decadron (B.A.D.) PCA IV Infusion

B.A.D. IV infusion pumps are used for intractable nausea and vomiting via PCA. A request was made to change the concentration of the components and lower the infusion rate limit to be able to run at 0.1ml/hr. The requested changes would increase the concentration of diphenhydramine and lorazepam and decrease the concentration of dexamethasone. P&T voted to add the changes to the formulation and changes to setting for the B.A.D. pump. The following changes were approved:

Final concentrations of the components:
- Diphenhydramine-5 mg/mL
- Lorazepam-0.133mg/mL
- Dexamethasone-0.133mg/mL

Settings for the B.A.D. PCA Pump:
- Loading dose: Lower hard limit 0.1 mg, Upper soft limit 2 mg, Upper hard limit 10 mg
- PCA dose: Lower hard limit 0.1 mg, Upper soft limit 2 mg, Upper hard limit 5 mg
- Continuous rate: Lower hard limit 0.1 mg/hr, Upper hard limit 20 mg/hr

Brief Updates

I. SQ Heparin Standard Administration Time for VTE Prophylaxis Update
   As educated in the September P&T Newsletter, administration times of SQ heparin BID doses for VTE prophylaxis will be standardized to 06:30 and 18:30. The current SQ heparin BID administration time is 10:00 and 22:00, which allows for duplicate anticoagulation errors to go unnoticed by nurses between shift changes. The new standard administration times will go into effect on November 6, 2012.

II. Standard Epidurals for Post-Operative Pain in Adults Update
   In the September edition of the P&T Newsletter, it was announced that the new standard epidural for post-operative pain in the adult patients at Methodist LeBonheur Healthcare was approved to be fentanyl 5mcg/mL with ropivacaine 0.2%. This change will go into effect on November 6, 2012.

III. The following items were reviewed and approved: Look Alike Sound Alike Drug Policy, Unapproved Abbreviations, and Nutrition Consult for Cystic Fibrosis.

IV. Critical Drug Shortage: Sodium Thiosulfate
   During the shortage of sodium thiosulfate, nitroprusside infusions will be sent without any sodium thiosulfate added. Pharmacy is notified when a nitroprusside infusion stays on a patient’s profile for greater than 48 hours. Upon receipt of this notification, the pharmacist will contact the prescriber to discontinue the order if not being used. If the nitroprusside is being infused greater than 48 hours, the pharmacist will contact the prescriber to recommend an alternative agent (e.g. nicardipine) to replace the nitroprusside infusion. If the prescriber wants the infusion to continue past 48 hours, the pharmacist will request a cyanide level be ordered (if not already done so).

Where can I find shortage information at Methodist?
Drug shortage information is posted on MOLLI. Click on drug information then drug shortages. Also, it is posted on Methodist MD under Quality and Patient Safety, Pharmacy and Therapeutics, then under Drug Shortages. Individual drug shortage memos (e.g. sodium thiosulfate, propofol) are posted on Methodist MD home page under recent news.

Upcoming P&T Agenda Items:
Formulary reviews: IVIG, IV ibuprofen, Daliresp, Suprep, Nebivolol
MUEs: levalbuterol, warfarin
Next P&T Meeting: November 1, 2012