

FEBRUARY

2005

MEPERIDINE POLICY UPDATE

The Pharmacy and Therapeutics Committee approved the updating of the meperidine guidelines into a formal policy action. Meperidine should be used only for 1) prevention or treatment of drug induced or blood product-induced rigors and treatment of post anesthesia shivering and 2) management of acute episodes of moderate to severe pain in patients with unmanageable ADRs or allergies to other first-line opioids or treatment failure to other first line opioids.

The proposal aims to control meperidine by restricting its presence in the hospital. Meperidine 25 mg/mL syringes will remain only on units where treatment of induced rigors and post-anesthesia shivering could occur; all other meperidine syringes will be removed from all Pyxis stations except PACU's.

Analgesia orders for meperidine will no longer be processed but will be converted to first-line agents like morphine, hydromorphone or oxycodone.

Table 1: Equianalgesic Dosing Guide (Adapted from Univ Kansas Hosp Analgesic Reference Guide)

| Opioid | Forms [() = Nonformulary items] | Equianalgesic Dose | Dose Interval |
|---------------|--|----------------------|---------------|
| Morphine | Tablets: MSIR | PO: 30 mg | 2 – 4 hrs |
| | Liquid: (MSIR Solution), Roxanol Concentrate | IV: 10 mg | 2 – 4 hrs |
| | Suppository: (Rectal Morphine Sulfate) | PR: 30 mg | 2 – 4 hrs |
| Hydromorphone | Tablets: Dilaudid | PO: 7.5 mg | 3 - 4 hrs |
| | Liquid: Dilaudid | IV: 1.5 mg | 3 - 4 hrs |
| | Suppository: Dilaudid | PR: 7.5 mg | 3 - 4 hrs |
| Oxycodone | Tablets: OxyIR or Roxicodone | PO: 30 mg | 3 - 4 hrs |
| | Oxycodone/APAP tablets: Percocet, Roxicet | | |
| | Oxycodone/Aspirin: (Percodan) | | |
| | Liquid: Roxidocode, (OxyFAST) | | |
| Fentanyl | Oral Transmucosal: Actiq | IV: 100 mcg | 30 - 60 min |
| | | OTFC: unknown | 30 - 60 min |
| Hydrocodone | Hydrocodone/APAP Tablets: Lortab, (Lorcet), (Norco), Vicodin, (Vicodin ES), (Vicodin HP) | PO: 30 mg | 3 - 4 hrs |
| | Hydrocodone/Ibuprofen: (Vicoprofen) | | |
| | Hydrocodone/APAP Liquid: (Lortab Elixir) | | |
| Meperidine | Tablets: (Demerol) | PO: 300 mg | --- |
| | Liquid: Demerol | IV: 75 mg | 2 – 3 hrs |
| Morphine | Tablets: (Avinza), Oramorph SR, MS Contin, (Kadian) | PO : 30 mg | 8 – 12 hrs |
| Oxycodone | Tablets: OxyContin | PO: 30 mg | 8 – 12 hrs |
| Fentanyl | Transdermal Patch: Duragesic | TD: 15 mcg | 72 hrs |
| Methadone | Tablets: Dolophine, (Methadone) | Consult pain service | |
| | Liquid: (Methadone) | | |

CONCENTRATED ELECTROLYTES AND HYPOTONIC SOLUTIONS POLICY

The Pharmacy and Therapeutics Committee passed a formal proposal on the management of concentrated electrolyte and hypotonic solutions. Storage of these solutions will be limited to the pharmacy department except for specific instances.

For the purposes of this policy, hypotonic solutions are defined as those with osmolarity of less than 154 mOsm/liter (that of 0.45% sodium chloride). Concentrated electrolytes include potassium chloride at 2 mEq/mL or greater, potassium phosphate at 3mM/mL or greater, sodium chloride greater than 0.9%, magnesium sulfate (50% or greater), and calcium chloride (10% or greater).

Fifty- percent magnesium and 10% calcium chloride will continue to be stored in drug trays for emergent use only.

Normally, sterile water (volumes greater than 30 mL) or quarter normal saline (0.225% sodium chloride) will not be administered without additives that raise osmolarity. The decision to use these solutions without additives will be made on a patient-specific basis based on consideration of patient size as well as fluid volume and rate of administration.

Hypertonic solution will also only be dispensed on a patient-specific basis. The maximum osmolarity will be 1100 mOsm/liter for peripheral intravenous access.

HANDLING OF LOOK-ALIKE SOUND-ALIKE MEDICATIONS

The Pharmacy and Therapeutics Committee approved a list of look-alike sound-alike medications (LASA) and safety strategies. The goal of the list is to prevent errors resulting from unintended interchange of LASA medications. The list will be revised annually after a review of medication-related incident reports.

See Table 2 on next page.

Table 2: Look- Alike Sound-Alike Medications

| LASA Drug Names | Generic (lowercase) and Proprietary (uppercase) Names | Safety Strategies |
|---|--|--|
| Acetohexamide and Acetazolamide | Acetohexamide (DYMELOR); Acetazolamide (DIAMOX) | Items are stored in segregated areas based on non-formulary status of acetohexamide; tallman lettering used in all databases for acetazolamide |
| Amphotericin B products (lipid-based and conventional) | Amphotericin B lipid complex (ABELCET); Amphotericin B liposomal (AMBISOME); Amphotericin B (FUNGIZONE) | Lipid-based Amphotericin products must be ordered by proprietary name; pre-printed order form required for Abelcet use; items stored in segregated areas based on non-formulary status of Ambisome; "pop-up" alert in pharmacy system |
| Captopril and Carvedilol | Captopril (CAPOTEN); Carvedilol (COREG) | Correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator |
| Carboplatin and Cisplatin | Carboplatin (PARAPLATIN); Cisplatin (PLATINOL) | Tallman lettering used in all databases for both drugs; "pop-up" alert in pharmacy system; items stored in non-adjacent bins in all storage areas |
| Cephalosporin products | Multiple entities on formulary | Correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator |
| Cyclosporine products | Cyclosporine (GENGRAF, NEORAL, SANDIMMUNE) | Cyclosporine products must be ordered using the proprietary name; tallman lettering used to differentiate from cycloserine (non-formulary); correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator |
| Dobutamine and Dopamine | Dobutamine (DOBUTREX); Dopamine (INTROPIN) | Tallman lettering used in all databases for both drugs; correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; items stored in non-adjacent bins in all storage areas |
| Fentanyl and Sufentanil | Fentanyl (SUBLIMAZE); Sufentanil (SUFENTA) | Drugs stored in separate drawers in CII-Safe (inpatient pharmacy) and in isolated Pyxis carousel drawers in any storage areas outside of the inpatient pharmacy |
| Ferrous Gluconate and Ferrous Sulfate | Ferrous Gluconate; Ferrous Sulfate (no proprietary names) | Correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; "pop-up" alerts in Pyxis and pharmacy system; items stored in non-adjacent bins in all storage areas |
| Glipizide and Glyburide | Glipizide (GLUCOTROL); Glyburide (GLYNASE, DIABETA, MICRONASE) | Tallman lettering used in all databases for both drugs; correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; "pop-up" alerts in Pyxis and pharmacy system |
| Hydralazine and Hydroxyzine | Hydralazine (APRESOLINE); Hydroxyzine (ATARAX or VISTARIL) | Tallman lettering used in all databases for both drugs; "pop-up" alerts in Pyxis and pharmacy system; correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; items stored in non-adjacent bins in all storage areas |
| Insulin products | Regular Insulin (NOVOLIN R); Isophane Insulin NPH (NOVOLIN N); Insulin Aspart (NOVOLOG); Insulin Glargine (LANTUS) | All insulin products dispensed in a unit-dose syringe with the exception of regular insulin and insulin aspart (rapid-acting); refrigerators containing floor stock of regular insulin and insulin aspart must be labeled to direct segregated storage of these two products |
| Lamivudine and Lamotrigine | Lamivudine (EPIVIR); Lamotrigine (LAMICTAL) | Tallman lettering used in all databases for both drugs; "pop-up" alerts in Pyxis and pharmacy system |
| Quinidine and Quinine | Quinidine (QUINIDEX); Quinine (no proprietary name) | Correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; "pop-up" alerts in Pyxis and pharmacy system; items stored in non-adjacent bins in all storage areas |
| Retrovir and Ritonavir | Zidovudine (RETROVIR); Ritonavir (NORVIR) | Drugs stored according to generic name; segregated storage based on need for refrigeration of ritonavir; ritonavir is not stored in Pyxis |
| Sulfasalazine and Sulfisoxazole | Sulfasalazine (AZULFIDINE); Sulfisoxazole (GANTRISIN) | Tallman lettering used in all databases for sulfisoxazole; correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; items stored in non-adjacent bins in all storage areas |
| Sustained/ Controlled-Release versus Immediate-Release products | Multiple entities on formulary | Correct placement of each drug in Pyxis routinely audited by Pyxis Coordinator; sustained/controlled-release products stored in color-coded bins to differentiate from immediate-release products; "pop-up" alert in Pyxis |
| Vinblastine and Vincristine | Vinblastine (VELBAN); Vincristine (ONCOVIN) | Tallman lettering used in all databases for both drugs; "pop-up" alert in pharmacy system; items stored in non-adjacent bins in all storage areas |

MULTI-DOSE VIAL POLICY

A formal policy on the storage, labeling, and discarding of multi-dose vials (MDVs) was presented and approved. Multi-dose vials include insulins and any other products labeled as 'Multi-dose' or 'Multiple dose'.

MDVs will be stored in accordance with the temperatures listed on the vial's label. These vials will be clearly and permanently labeled with the date of initial entry. MDV's will be discarded after 28 days have passed since initial entry, if there is suspected or visible contamination, if deterioration is suspected, if particulate matter is detected, if storage conditions are deemed inappropriate, or if the vial is empty.

THERAPEUTIC EXCHANGE

Mometasone Nasal Spray (Nasonex®) to Fluticasone Nasal Spray (Flonase®)

There will now be a therapeutic substitution from nonformulary Nasonex nasal spray to formulary Flonase nasal spray. This substitution will only apply to the nasal spray formulation of these medications. Nasonex and Flonase are nasal spray corticosteroids indicated for the management of seasonal and perennial allergic and nonallergic rhinitis. Corticosteroids have a wide range of effects on multiple cell types and mediators involved in inflammation though the exact mechanism through which they effect allergic rhinitis is not known. In direct comparative trials, the two agents were shown to have similar efficacy profiles. Neither agent has a significantly different adverse event profile when compared to each other or to placebo. The two agents are dosed the same: 2 sprays per nostril once daily for adults and children greater than 12 years old, and 1 spray per nostril once daily for children ages 4 to 11.

| Formulary Additions and Deletions (January 1, 2004 - Present) | | | | | |
|--|-----------------------|--|----------------|-----------------|--------------------------------------|
| Generic Name | Trade Name | Therapeutic Class | Action | Date | Comments |
| Abarelix | Plenaxis | Palliative Agent | Added | 9/28/04 | |
| Acetylcysteine | Acetadote | Antidote | Added | 10/25/04 | |
| Atomoxetine | Strattera | Non-stimulant ADHD medication | Added | 9/28/04 | |
| BCNU Wafers | Gliadel | Chemotherapeutic | Added | 2/26/04 | |
| Brompheniramine | N/A | Antihistamine | Deleted | 3/19/04 | |
| Brompheniramine/ Phenylpropanolamine | N/A | Antihistamine/ Decongestant | Deleted | 3/19/04 | |
| Daptomycin | Cubicin | Antibiotic | Added | 1/25/05 | See Feb Pharmacy Key |
| Darbepoetin Alfa | Aranesp | Hematopoietic Agent | Deleted | 06/24/04 | |
| DTaP, Hep B (Recombinant), and IPV Combined | Pediarix | Vaccine | Added | 5/27/04 | |
| Doxorubicin HCl Liposomal | Doxil | Chemotherapeutic | Added | 5/27/04 | |
| Guaifenesin/ Codeine | N/A | Expectorant | Added | 1/22/04 | |
| Halothane | N/A | Inhalational Anesthetic | Deleted | 3/25/04 | |
| Insulin | Humalog 75/25 | Antidiabetic | Deleted | 9/28/04 | Autosubstitution to Novolog 70/30 |
| Insulin | Humulin | Antidiabetic | Deleted | 7/27/04 | See Sept Pharmacy Key |
| Insulin | Lente | Antidiabetic | Deleted | 9/28/04 | Autosubstitution to Lantus |
| Insulin | Novolin | Antidiabetic | Added | 7/27/04 | See Sept Pharmacy Key |
| Insulin | Novolin 70/30 | Antidiabetic | Added | 9/28/04 | Autosubstitution for Humalog75/25 |
| Insulin | Ultralente | Antidiabetic | Deleted | 9/28/04 | Autosubstitution to Lantus |
| Lansoprazole IV | Prevacid | Proton Pump Inhibitor | Added | 7/27/04 | See guidelines for use |
| Lidocaine 5% | Lidoderm | Local Anesthetic | Added | 8/28/03 | |
| Mepivacaine | Carbocaine | Peripheral Nerve Blocker | Added | 10/26/04 | See Nov Pharmacy Key |
| Mivacurium | Mivacron | Neuromuscular Blocker | Added | 2/26/04 | |
| Morphine Extended Release | Avinza | Narcotic Analgesic | Added | 4/29/04 | See guidelines for use |
| Moxifloxacin | Avelox | Antibiotic | Deleted | 6/24/04 | |
| Nateglinide | Starlix | Antidiabetic | Added | 4/29/04 | |
| Olanzapine for Injection | Zyprexa IntraMuscular | Antipsychotic | Added | 6/24/04 | See guidelines for use |
| Oseltamivir | Tamiflu | Antiviral | Added | 3/25/04 | |
| Pantoprazole IV | Protonix | Proton Pump Inhibitor | Deleted | 07/27/04 | See guidelines for use |
| Pravastatin | Pravahol | HMG-CoA Reductase Inhibitor | Added | 07/27/04 | See Sept Pharmacy Key |
| Risperidone Long-Acting | Risperdal Consta | Antipsychotic | Added | 2/26/04 | See guidelines for use |
| Rofecoxib | Vioxx | COX-2 Inhibitor | Deleted | 9/30/04 | Taken off the market |
| Tiotropium | Spiriva | Anticholinergic | Added | 07/27/04 | |
| Tirofiban | Aggrastat | Glycoprotein IIb/IIIa Inhibitor | Deleted | 01/25/05 | |
| Valsartan | Diovan | Angiotensin Receptor Blocker | Added | 09/28/04 | |
| Zonisamide | Zonegran | Antiepileptic | Added | 2/26/04 | |