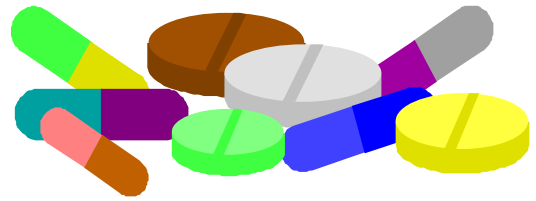


PostScripts



The Newsletter of the Pharmacy and Therapeutics Committee
and Department of Pharmacy Services
OHSU Hospitals and Clinics

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Oral Opioid Formulary Changes

Paul Bascom, M.D., P&T Committee chairman

Several seldom-used products were identified by the Palliative Medicine/Comfort Care Team and recommended for deletion from the Formulary.

Pentazocine (Talwin® and Talwin NX®), propoxyphene (Darvon N-100® and Darvon® Compound-65) and butorphanol nasal spray (Stadol NS®) were removed from the OHSU Formulary of Accepted Drugs, effective May 1.

Oxycodone/aspirin (Percodan®) and oxycodone/acetaminophen (Percocet®, Tylox®) will be removed from the OHSU Formulary of Accepted Drugs on Monday, June 2. A therapeutic interchange is in place to automatically switch to plain oxycodone plus either aspirin or acetaminophen in equivalent strengths. If the patient has an active order for aspirin or acetaminophen on a similar schedule, only the oxycodone order will be entered.

Combination opioid products should be avoided whenever possible, due to the risk of acetaminophen toxicity. The maximum daily dose of acetaminophen is 4 grams (8 extra strength or 12 regular strength Tylenol tablets) a day, and only 2 grams a day for patients with liver insufficiency.

Nursing IV Administration Chart

Patricia Markesino, R.N.

Recently, the Pharmacy and Therapeutics (P&T) Committee and the Nursing Leadership Council clarified the required monitoring of intravenous beta-blockers in the inpatient setting. When iv beta-blockers are used for the acute treatment of tachycardia or hypertension, patients must be on a telemetry unit or in a critical care area. When used for maintenance of continued beta-blocker therapy when patients are NPO, vital signs must be monitored every 15 minutes x 2.

The Nursing IV Administration Chart is the source for information on the required monitoring and equipment for administration of intravenous medications to OHSU inpatients. Find the complete Nursing Administration Chart in the Clinical Policy and Procedures Manual on the Ozone,
<http://ozone.ohsu.edu/HealthSystems/medstaff/iv-27table.pdf>.

Injectable Corticosteroid Shortage Continues

Brad Fujisaki, R.Ph., OHSU Drug Information Service

OHSU has been faced with a critical shortage of our chief parenteral corticosteroids, methylprednisolone (Solu-Medrol) and hydrocortisone (Solu-Cortef) since December 2002. This is a national shortage that was initially projected to end in March 2003; however, it now appears that the shortage will continue through the 2003 calendar year. This drug shortage is believed to stem from decreased availability of raw materials for one manufacturer and the inability for another manufacturer to compensate for the resulting increased demand for product.

In response to the national shortage in December 2002, the Department of Pharmacy Services forecasted the impact of this shortage on OHSU. Based on usage reports from previous months, utilization of injectable methylprednisolone and hydrocortisone at an unchanged rate would completely exhaust our supply. The Department of Pharmacy, therefore, employed the following strategies to ration the supply at OHSU:

- Removed all injectable methylprednisolone and hydrocortisone from non-critical Pyxis areas in the hospital and consolidated the supply in Central Pharmacy. Distribution of these agents to the OHSU clinics has also been rationed.
- Requested that all areas within OHSU Hospitals & Clinics make note of their current inventory of injectable methylprednisolone (Solu-Medrol) and hydrocortisone (Solu-Cortef) and return vials not expected to be used in the near future.
- Inquired whether patients with active orders for injectable methylprednisolone and hydrocortisone could be switched to alternative agents such as oral corticosteroids (prednisone, methylprednisolone) or injectable dexamethasone.
- Communicated with high-volume prescribers for input on the necessity of injectable methylprednisolone and hydrocortisone and whether alternatives exist.
- Utilized the Non-Formulary process for indications where no alternatives to injectable methylprednisolone or hydrocortisone exist.

- The OHSU Drug Information Service has reviewed the published literature for alternatives to injectable methylprednisolone and hydrocortisone.

With these rationing strategies employed since late December 2002, we have been able to continue to maintain a supply of drug product to provide for the indications where not alternatives to injectable methylprednisolone and hydrocortisone exist. We are hearing that more and more hospitals across the country are exhausting their supply of product.

If you would like further information about this national shortage, please see the ASHP Drug Shortages Resource Center:

<http://www.ashp.org/shortage/methylprednisolone.cfm?cfid=17941211&CFToken=90507544>. You may also contact the OHSU Drug Information Service at ext 4-7530, with any questions.

IV Pantoprazole Shortage Continues and Restrictions Tighten

Kate Farthing, Pharm.D., Drug Information Service

The use of iv pantoprazole (Protonix) is restricted to an 80 mg single dose administered in the ED or ICU prior to endoscopy. Any patient able to tolerate oral medications (by mouth or feeding tube) should receive lansoprazole capsules or suspension.

Patients needing continued iv medications should be considered for iv ranitidine therapy. To approve continued therapy with iv pantoprazole, GI attending physicians must call in the approval to the Central Pharmacy (ext 4-0699 or ext 4-1139 for pediatric patients), and provide the pharmacist with the patient's name and location. If the patient is in an ICU, call the approval to the ICU Pharmacy (ext 4-4375) during the hours of 0600-2200. All other requests for iv pantoprazole will be routed to the pharmacist carrying the non-formulary pager (pager 1-1982).

There is no known resolution date for the iv pantoprazole shortage, and Wyeth expects the shortage to continue through mid-2003. For additional therapeutic alternatives, visit the Drug Shortages Resource Center, <http://www.ashp.org/shortage/pantoprazole.cfm?cfid=17045953&CFToken=32367009>. A current list of products on back order or in short supply at OHSU is available on the OHSU Formulary website, www.formularyproductions.com/ohsu.

OHSU Revises Compounding Policy to Improve Patient Safety

Gae Ryan, Pharm.D., Director of Pharmacy Services

In order to maximize patient safety, the Medical Board and the Pharmacy and Therapeutics (P&T) Committee have placed new restrictions on the preparation and administration of Pharmacy compounded products. Compounded drug products are defined as any product manipulated by Pharmacy to a form that is not included in the FDA approved labeling. This policy was developed at the request of Risk Management after several deaths from the administration of compounded products were reported in other states.

The new policy allows the pharmacist to process orders for compounded drug products only if the following criteria are met:

- Ingredients are United States Pharmacopeia (USP)-standardized products; **AND**
- Stability data is available or expiration dating can be ascertained for the final compounded preparation; **AND**
- No commercial product similar to the proposed compounded preparation is available;

AND AT LEAST ONE OF THE FOLLOWING:

- There is medical literature published in a referred journal to support the safety and efficacy of the product, **OR**
- Medical necessity clearly outweighs any potential risk and no other therapeutic alternative is available, **OR**
- The patient (legal guardian/power of attorney), for whom the product is intended has signed an informed consent that addresses the potential risks of therapy.

Because the policy was developed to deal with medico-legal risk, provision has been made for life-threatening clinical situations where patient care would warrant accepting risk under approved guidelines:

- If the product has never been compounded by the Pharmacy and does not meet the criteria, the prescriber may request approval of the product through the P&T Committee of the Medical Staff.
- If the product does not meet the criteria, but has been made by the Pharmacy prior to implementation, the prescriber may request approval of the product through the P&T Committee of the Medical Staff, and the Pharmacy will continue to compound the product while the decision is pending. If the prescriber decides not to request approval, the Pharmacy will no longer compound the product.



Report Adverse Drug Reactions (ADRs) or Suspected Drug Events (SDEs) to the OHSU Drug Information Service, ext 4-7530.

Please leave your name, the patient's name, medical record number and a brief description of the drug event. Reports can also be submitted online, <http://www.ohsu.edu/hosp-PharmSrv/adr3.htm>

New Milligram Per Kilogram Ordering Policy

By Laura Ibsen, M.D., Pediatric Intensive Care Physician, Terre Haberland, R.N., Pediatrics, and Maureen Ober, Pharm.D., Department of Pharmacy Services

To insure patient safety, effective June 2, 2003, all medication orders for patients weighing less than 50 kilograms (kg) must include the following to be processed:

- Date and time of order
- Drug name, dose, route of administration and dosing interval. **NOTE:** Pediatric doses should not exceed the maximum adult dose and may be rounded to the nearest standard dose.
- Dose per kilogram of body weight, or per metered square calculation for chemotherapeutic agents
 - mg/kg/day or mg/kg/dose
 - mcg/kg/day or mcg/kg/dose
 - units/kg/day or units/kg/dose
- Patient weight on each order sheet containing medications
- Legible signature and pager number of the prescriber

The dose per kilogram body weight or per meter squared calculation can be excluded from the order only if the order is for:

- An intrathecal medication not based on body weight, **OR**
- An inhaled medication prescribed in unit or standard doses (e.g. metered dose inhalers, nebulizations), **OR**
- A medication identified on an individualized, pre-printed code sheet, **OR**
- A medication that is an adult dose. Such a medication must be identified as an "adult dose".

Abbreviations should be minimized to decrease the potential of the order being misinterpreted (see Unacceptable Abbreviations, <http://ozone.ohsu.edu/HealthSystems/pharmacy/BadAbbreviations.htm>).

- "D" should never be used, since it is unclear whether "day" or "dose" is intended.
- "U" or "IU" should always be spelled out as "units" since they may be misread as "0" or "10" and result in a ten-fold dosing error.

When writing the dose or dose calculation:

- If the number is less than one, it should contain a zero before the decimal point (0.1 mg).
- If the number is a whole number, a decimal point and trailing zero should not be added (1 mg, not 1.0 mg).

Unacceptable Abbreviations Table

The P&T Committee recognizes the following abbreviations as dangerous. The use of these abbreviations is considered unacceptable, and Pharmacy will not process orders containing these abbreviations without clarification to avoid medication errors.

UNACCEPTABLE ABBREVIATIONS			
AVOID	INTENDED MEANING	MISINTERPRETATION	CORRECTION
1.0	1	10	1 Do not use terminal zeroes for doses expressed in whole numbers
.5	0.5	5	0.5 Use a zero before a decimal when the dose is less than a whole number
U	unit	0 or 4 Causes a 10-fold overdose or greater 4U read as "40" or "44"	Spell out unit
IU	international unit	IV (intravenously)	Spell out unit
µg	microgram	mg	Use mcg or write micrograms
cc	cubic centimeters	Misread as "u" (units)	Use ml
x 3 D	days or doses	Misinterpreted as "doses" when "days" is meant and vice versa	Spell out days or doses
/ (slash mark)	To separate doses (e.g. 750mg/500mg/750mg)	Misread as the number "one"	Specify dose and schedule (e.g. 750mg po qam and qhs, 500mg po qnoon)
AZT	zidovudine (Retrovir)	azathioprine	Do not abbreviate
CPZ	Compazine (prochlorperazine)	chlorpromazine	Do not abbreviate
DTO	deodorized tincture of opium or diluted tincture of opium	Misinterpreted as diluted tincture of opium when deodorized tincture of opium is meant and vice versa	Do not abbreviate
HCL	hydrochloride	KCL	Do not abbreviate
MSO4	morphine sulfate	magnesium sulfate	Use MS or do not abbreviate
Nitro	nitroglycerin or nitroprusside	Misinterpreted as nitroprusside when nitroglycerin is meant and vice versa	Do not abbreviate
TAC	triamcinolone or tetracaine, adrenalin, cocaine	Misinterpreted as tetracaine, adrenalin, cocaine when triamcinolone is meant and vice versa	Do not abbreviate

Comments about this issue of PostScripts, or suggestions for future articles, may be directed to Kate Farthing, Department of Pharmacy Services, ext. 4-4250, farthing@ohsu.edu.