

Inpharmation Pharmacy Newsletter



JCAHO Medication Management

Medication Management is a crucial part of patient care. In fact, it's a national as well as a UH Patient Safety Goal.



Ira Dinerman, RPh., M.S.
Senior Pharmacist
Serving Downstate Pharmacy since
May 17, 1973

Inside This Issue

- 1 Medication Management for Safe Medication Use Practices
- 2 The Pharmacy and Therapeutics Committee
- 3 Clinical Update: Nesiritide (Natrecor®)
- 4 Pharmacy News
- 5 Pharmacy and Therapeutic Committee News
Additions to the formulary: Tramadol (Ultram®), Eplerenone (Inspra®)
- 6 P&T News
- 7 Deletions from the formulary
- 8 Therapeutic Interchange – Ace- Inhibitors
- 9 Report of Adverse Drug Reactions for May & June 2005

Medication Management for Safe Medication Use Practices

As the Director of Pharmacy and Secretary of the Pharmacy and Therapeutics Committee, I would like to welcome all of you to this important feature that will become a permanent part of our newsletter.

Too often in the world of medication therapy we read in the media about permanent injury or death of a patient due to a medication error. More times than not the error usually occurs due to a system problem surrounding the medication management process or poor control over the use of the medication.

In these series of articles, I shall present and discuss the controls on medication use, the medication management process, and the safety nets that can avert a tragic error.

Inpharmation (Pharmacy Newsletter) a bi-monthly newsletter provided for the employees at the University Hospital of Brooklyn. This publication communicates information regarding drug policy, formulary changes, medication usage evaluation results, adverse drug reactions, medication administration and monitoring, and other topics.



Main Pharmacy • 2854/56

Main Pharmacy Fax • 2855

Cassette Exchange Areas • 2476

Associate Director • 3158

Director • 3115

Director's Fax • 3360

Materials Manager • 3069

ADR Reporting Hotline • 1890

Clinical Pharmacist • 1527

Research Pharmacist • 4340

P.I. Coordinator • 4237

CCC Pharmacist • 4238

O.R. Satellite Pharmacy • 1622

Parental Nutrition Lab • 3072

Oncology Drug Prep Lab • 2034

Floor Stock & Robotics • 2476

I.V. Lab • 4889

Pharmacy Services

Editorial Staff:

Roopali Sharma, Pharm.D.

**Raquel Bell
Designer**

Contributors:

Nicholas Galeota, M.S., RPh

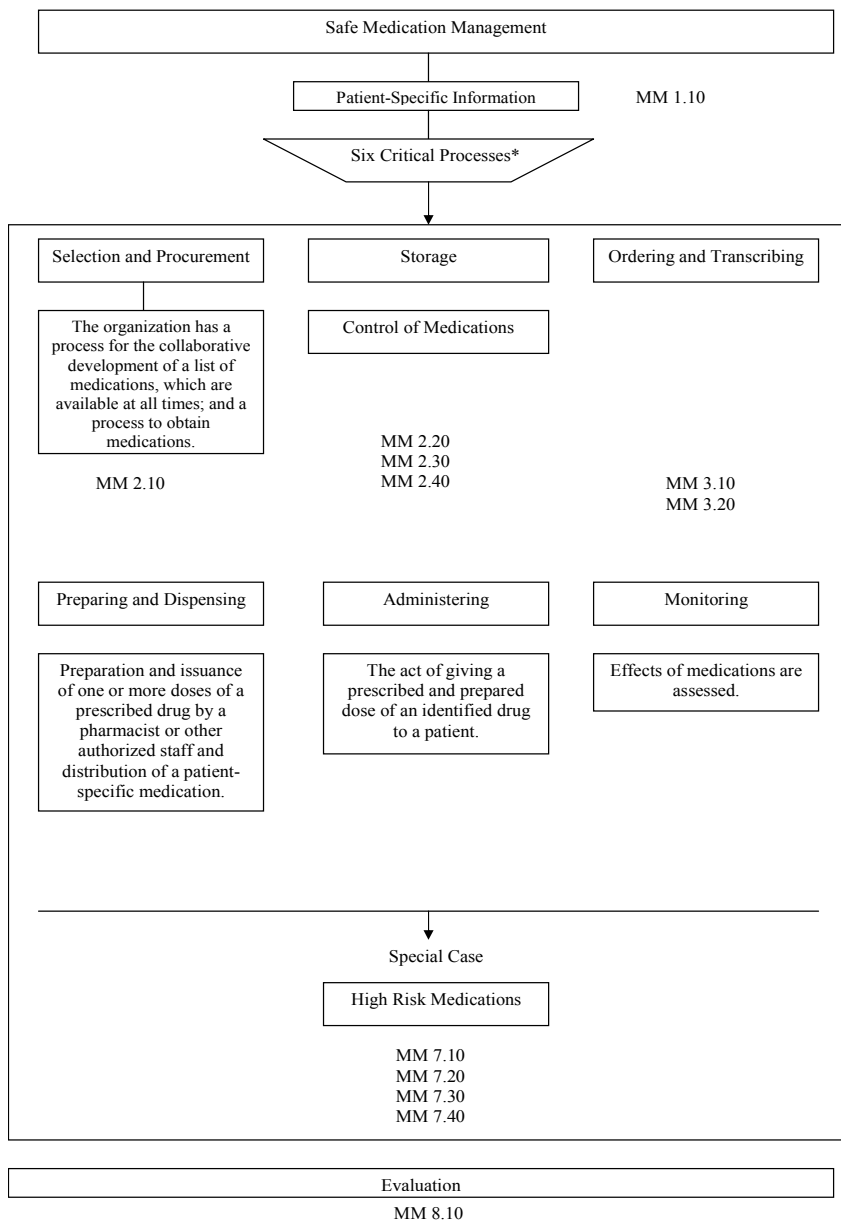
Alan Hui, Pharm.D.

The Pharmacy and Therapeutics Committee

Where better to start than in the beginning. The Pharmacy and Therapeutics Committee (P&T Committee) at the University Hospital of Brooklyn is charged with the responsibility for oversight of medication use wherever drugs are used within the institution to treat patients. The Committee is the standardization committee for medication use within our hospital. The Committee acts in an advisory, educational, and performance improvement capacity. The mission of the Pharmacy and Therapeutics Committee is to promote both cost effective and rational drug therapy. The Committee also serves as a liaison between Pharmacy and Medical staff. The recommendations made by the Pharmacy and Therapeutics Committee are then presented to the Executive Committee of the Medical Staff for approval before its recommendations can be acted upon. Its function is directly guided by the JCAHO standards relating to the Six Critical Processes of Safe Medication Management (see Table 1). (MM refers to Medication Management standards in the Joint Commission Manual. For further details, standards can be accessed online at www.downstate.edu).

The P&T Committee Members

- C. Shames, M.D., Chairperson – Medicine
- N. Galeota, M.S., R.Ph., Secretary - Pharmacy
- D. Caracciola, R.Ph – Pharmacy
- R. Sharma, Pharm. D. – Pharmacy
- A. Hui, Pharm. D. – Pharmacy
- L. Jeu, Pharm. D. – Pharmacy
- M. Islam – Pharmacy
- Ira Dinerman, M.S., R.Ph – Pharmacy
- M. Mishko, Pharm.D. – Pharmacy
- D. Viswanathan, M.D. – Psychiatry
- M. Augenbraum, M.D. – Infectious Diseases
- M. Resurreccion, M.D. – Anesthesiology
- G. Allen, Ph. D. – Epidemiology
- R. Joks, M.D. – Medicine
- M. Schoeneman, M.D. – Pediatrics
- S. Weiner, M.D. – Emergency Medicine
- M. Su, M.D. – Emergency Medicine
- A. Feit, M.D. – Cardiology
- M. Mendez - Radiology Administration
- M. Bougarin – Nursing
- A. Salmon, R.N. – Q/M
- D. Woods, R.N. – Nursing Administration
- W. Solomon, M.D. – Hematology/Oncology
- W. Gerdes – Hospital Administration
- C. El-Yournis, M.D. – Internal Medicine
- G. Gwertzman, M.D. – Surgery
- M. Green – Patient Safety Office
- C. Okundaye – Nursing
- S. Skidell – Dietary



The Committee's functions include but are not limited to:

- ❑ The addition or deletion of drugs from our formulary
- ❑ The review of non-formulary requests of drugs
- ❑ The formulation of policies and procedures for the safe use of medication
- ❑ The development of drug utilization evaluations to confirm proper use of medical by our medical staff
- ❑ The review of medication errors and their causality in order to develop plans of correction for future use of the involved medication
- ❑ The review of adverse drug reactions to insure proper documentation of patient idiosyncrasies or allergies
- ❑ The review of investigational drug protocols
- ❑ The review and evaluation of clinical interventions conducted by our clinical pharmacists
- ❑ The formulation of plans to deal with external events impacting medication use, i.e., drug recalls, infection outbreaks, drug shortages, disasters, etc.
- ❑ The responsibility for insuring our hospital's compliance with regulatory laws and standards relating to medication use

The Committee's membership represents a large cross section of clinicians that have direct ownership of the medication use process: physicians from various services, pharmacists, nurses. Hospital Administration is represented as well along with members from the Quality Management Department.

In closing for now, it should be understood that it is everyone's responsibility to insure safe medication use within our institution. The P&T Committee is the first step to accomplish safe and effective use of medications in our goal to provide quality care to our patients.

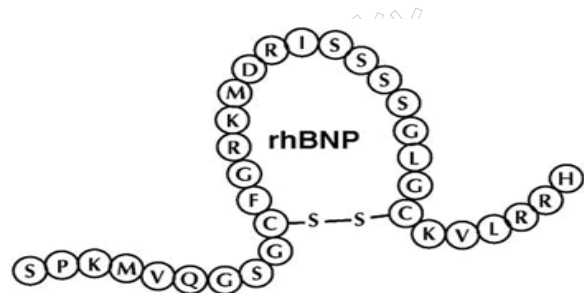
Clinical Update: Nesiritide

Nesiritide is the first therapy approved for the treatment of acute congestive heart failure since 1987. Nesiritide, a recombinant form of human B-type natriuretic peptide (hBNP), and a potent vasodialator is indicated for the treatment of patients with acutely decompensated congestive heart failure who have dyspnea (shortness of breath) at rest or with minimal activity. This agent was FDA approved in 2001. The approval of the drug was based on the evaluation of 10 completed clinical trials involving 1456 patients with congestive heart failure. These trials showed that the drug reduced dyspnea and produced dose-dependent reductions in pulmonary capillary wedge pressure and systolic arterial pressure when added to standard care.

In seven nesiritide clinical trials, at 30 days, 5.3% in the nesiritide treatment group died as compared with 4.3% in the group treated with other standard medications. In four clinical trials, at 180 days, 21.7% in the nesiritide treatment group died as compared with 21.5% in the group treated with other medications.

There is not enough information to know if there is an increased risk of death after treatment with nesiritide. Recent publications have raised questions about the safety of nesiritide with respect to worsening renal function and death. Nesiritide's manufacturer, Scios, has revised it product labeling and has highlighted these findings. Dear doctor letters were also sent which stated these findings and informed the clinicians about the 30-day and 180-day mortality data which previously did not appear on the package insert.

In June the Pharmacy and Therapeutics Committee discussed the use of nesiritide and has recommended to limit the use of nesiritide. It should only be used in patient with acute decompensated heart failure and the use of this agent has to be approved by cardiology attending and fellows.



Pharmacy News

1. Please be advised that the Department of Pharmacy will no longer stock *Recombivax-HB* vaccine for Adults. The current stock of *Recombivax-HB* will be used until it is depleted. **Engerix-B [Hepatitis B Vaccine (Recombinant)]** for Adults will be stocked in its place.
 - Additionally, please note the following:
 - Engerix-B Adult vaccine is available as 20 mcg/mL
 - Available in a single dose pre-filled syringe or single dose vials. The Pharmacy will stock the single dose pre-filled syringe
 - Pre-filled syringe labels contain Lot #, expiration date and manufacture information. They can be peeled off and affixed to the patient record for documentation purposes
 - Engerix-B Adult vaccine has a higher antigen content: 20 mcg/1 mL
2. A reminder to everyone, Atorvastatin (Lipitor®) is the only statin on formulary, other statins may be obtained after filling out the non-formulary request form appropriately.
3. Ondansetron (Zofran®) will be the primary 5-HT3 antagonist for chemotherapy induced nausea and vomiting at The University Hospital. Generic ondansetron will be available shortly.



Pharmacy & Therapeutics Committee News: Additions to the Formulary

Tramadol (Ultram®)

Tramadol (Ultram®) is a centrally acting synthetic opioid analgesic, indicated for the management of moderate to moderately severe pain. Apart from analgesia, tramadol administration may produce constellation of symptoms (including dizziness, sweating, nausea, constipation and pruritis) similar to that of other opioids. In contrast to morphine, tramadol has not been shown to cause histamine release. It may induce psychic and physical dependence of the morphine-type. It has been associated with craving and tolerance development. Withdrawal symptoms may occur if tramadol is discontinued abruptly. The usual starting dose is 25 mg/day qAM and it can be titrated in 25 mg increments as separate doses every three days to reach 100 mg/d (25 mg q.i.d) For additional relief of pain tramadol can be given as 50-100 mg q.i.d as needed for pain not to exceed 400 mg/day. If rapid analgesia is desired tramadol can be administered as 50-100 mg q.i.d without titrating but adverse events (CNS and GI) may be experienced by the patients.

Eplerenone (Inspra®)

Eplerenone (Inspra®) is an aldosterone blocker that selectively binds to mineralocorticoid receptors (relative to its binding to glucocorticoid, progesterone, and androgen receptors) INSPRA tablets contain 25 mg or 50 mg of eplerenone. It is indicated to improve survival of stable patients with left ventricular systolic dysfunction (ejection fraction $\leq 40\%$) and clinical evidence of congestive heart failure after an acute myocardial infarction. Eplerenone is contraindicated in all patients with the following: serum potassium >5.5 mEq/L at initiation; creatinine clearance ≤ 30 mL/min; concomitant use with the following potent CYP3A4 inhibitors: ketoconazole, itraconazole, nefazodone, troleandomycin, clarithromycin, ritonavir, nelfinavir, or other drugs described in their labeling as strong inhibitors of CYP3A4. The starting dose of eplerenone is 25 mg qd, it should be titrated in a single step to the target dose of 50 mg qd within 4 weeks as tolerated by the patient. It can be administered with or without food.



Deletions from the Formulary

- Choline and magnesium salicylate (Trilisate®)
- Salsalate (Disalcid®)
- Sulindac (Clinoril®)
- Nabumetone (Relafen®)

Another Therapeutic Interchange Approved: Ace-Inhibitors

Pharmacy and therapeutics Committee has approved another automatic therapeutic interchange program for ACE-inhibitors. Under this program all ACE inhibitors ordered except for Captopril will be automatically interchanged for Enalapril (Vasotec®) at equivalent doses. (Please see Table 2 for the dosage conversion.) Captopril (Capoten®) will remain as a formulary agent since it is the sole ACE-Inhibitor classified as a short-acting agent. Therefore, no agents will be automatically substituted for captopril.

Formulary Agent	Non-Formulary Agents							
Enalapril (Vasotec®)	Benazepril (Lotensin®)	Fosinopril (Monopril®)	Lisinopril (Prinivil®, Zestril®)	Moexipril (Univasc®)	Perindopril (Aceon®)	Quinapril (Accupril®)	Ramipril (Altace®)	Trandolapril (Mavik®)
Dosage Conversion								
5 mg/day	5 mg/day	5 mg/day	5 mg/day	3.75 mg/day	2 mg/day	5 mg/day	1.25 mg/day	1 mg/day
10 mg/day (2 divided doses)	10 mg/day	10 mg/day	10 mg/day	7.5 mg/day	4 mg/day	10 mg/day	2.5 mg/day	2 mg/day
20 mg/day (2 divided doses)	20 mg/day	20 mg/day	20 mg/day	15 mg/day	8 mg/day	20 mg/day	5 mg/day	4 mg/day
40 mg/day (2 divided doses)	40 mg/day	40 mg/day	40 mg/day	30 mg/day	16 mg/day	40 mg/day	10-20 mg/day	8 mg/day

Report on Adverse Drug Reactions May 2005

Diagnosis	Suspected Medication	Dose	Type of Reaction
Angioedema	Dicloxacillin	250 mg q4h	Skin, hives, rashes tongue swelling
Pneumonia/Rhabdomyolysis	Levofloxacin	500mg once then 250mg daily	Rash
Neutropenic	Amphoterecin B	70mg q24h	NKDA
Cardiogenic Shock	Doxorubicin	350mg/sq. meter	Sulfa, Penicillin, Morphine

Report on Adverse Drug Reactions June 2005

Diagnosis	Suspected Medication	Dose	Type of Reaction
Hypotension -- Dehydration	Depakote	1 gram three times a day	↑Amylase & Lipase level
Pneumonia/Pulmonary disease	Ceftriaxone	1 gram I.V. one dose	Rash, Itching
Urinary Tract Infection	Gatifloxacin	400mg orally daily	Arthritis, Macular erythematous