

PHARMACY AND THERAPEUTICS NEWSLETTER

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http://www.tarzanacme.com/pharmacy_newsletter.aspx

P&T COMMITTEE ACTIONS

FORMULARY

Additions:

Apixaban (Eliquis®) – Oral anti-coagulant agent.

DRUG SHORTAGE!!

The ASHP Drug Shortage "QuickLinks" is on the front page of the hospital intranet:

<http://www.ashp.org/DrugShortages/Current/>

Current Shortages Impacting PTMC

- Propofol (Diprivan®) IV
- Na and K Phosphate IV
- Magnesium Sulfate IV
- Adult and Ped MVI Injection
- Dextrose 50% 50 mL Injection
- Trace Elements IV

POLICY UPDATE

Insulin IV Forms:

Current EPIC Columnar Insulin IV pilot medication utilization evaluation (MUE) found that patients reached therapeutic blood glucose goal in average of 3.9 hours without hypoglycemia. Protocol compliance improved from previous reviews.

The EPIC Columnar insulin IV protocol will be the sole IV insulin protocol for PTMC. IV insulin administration will be approved only in **CVICU and ICU**. DOU and CVU will no longer be approved areas. The Pregnant Glycemic Control protocol will continue to be available in L&D and Post-partum unit. All IV insulin requires a physician to order using pre-printed forms.

Antibiogram 2012 and Empiric Antibiotic Guidelines: Available at the PTMC intranet at the following link.

<http://in.providence.org/ca/facilities/ptmc/departments/rxportal/rx/Documents/Antibiogram/Antibiogram%202012%20-%20Emp%20Abx%20Guideline%2011-2012.pdf>

CODE t-PA:

Code BRAIN has been changed to **CODE STROKE**. When patients with a stroke need alteplase (t-PA), **CODE t-PA** will be called. A pharmacist will then respond to prepare medications and provide drug information.

Look-Alike Sound-Alike Medication:

The 2013 updated medication list has been posted in all medication rooms.

MEDICATION SAFETY

ADVERSE DRUG REACTION (ADR)

First Quarter Report 2013

The ADR rate for the first quarter 2013 was 3.4%, comparable to the previous quarter. The classes of medications most frequently associated with inpatient ADR's continue to be analgesics, anti-infectives, and anti-diabetic agents. Outpatient ADRs were most frequently associated with anticoagulants.

- Insulins (glargine, aspart, regular) were the medications most reported for severity L2.
- The number of analgesic ADR reports increased slightly compared to the 4th quarter of 2012 (N=13 vs 10). This increase may be due to increased surveillance from the pharmacist prospective opioid usage review pilot project. The analgesic ADR rate has

been trending down for the past year, from continued education of medical, nursing, and pharmacy staff.

- The incidence (N=3) and the severity (L1) of inpatient warfarin ADRs remains low. Complications from outpatient warfarin are the most frequent medication related admission to the hospital. There is an increased trend of hospitalizations associated with bleeding from dabigatran (Pradaxa®), a new oral anticoagulant.

MEDICATION UPATE

Apixaban (Eliquis®) - New Formulary Medication

Apixaban is a new oral anti-coagulant indicated to reduce the risk of stroke and systemic embolism in patients with nonvalvular atrial fibrillation. It is a direct-acting, selective, reversible, inhibitor of factor Xa.

Dose: 5 mg PO bid

Reduce dose to 2.5 mg PO bid for patients:

- With two of the following: age \geq 80 years, weight \leq 60 kg, or Scr \geq 1.5 mg/dL
- With coadministration of a strong inhibitor of cytochrome P450 CYP3A4 and P-gp (e.g. ketoconazole, itraconazole, ritonavir, clarithromycin)

Probiotics for Prevention of *Clostridium difficile* Associated Diarrhea

Clostridium difficile has become one of the most common hospital acquired infections, and a common cause of diarrhea due to extensive use of antibiotics. The use of broad spectrum antibiotics such as extended penicillins, cephalosporins, clindamycin, and fluoroquinolones have been associated with *C. difficile* – associated diarrhea (CDAD). CDAD contributes to increased hospital lengths of stay, and health care costs. *C. difficile* infections in the United States cost an estimated \$750 million to \$3.2 billion annually.

There is increasing evidence that probiotics have beneficial effects on reducing the incidence of CDAD by restoring the normal microflora of the gut, and preventing colonization of pathogenic bacteria. A large meta-analysis in the December 2012 issue of the Annals of Internal Medicine showed that in high risk patients, concomitant use of probiotics (such as *L. acidophilus*, *L. casei*, *B. bifidum*, or *S. boulardii*) with doses of 10 billion to 100 billion colony

forming units given daily during the duration of antibiotic treatment, had a 66% reduction in the incidence of CDAD.

Probiotics are considered relatively safe with some common adverse events including nausea, flatulence, and taste disturbance. There has been a concern for bacteremia in immunocompromised or severely debilitated patients. This meta-analysis did not report any serious adverse events related to probiotics use in immunocompromised or severely debilitated patients.

Prophylactic use of probiotics has the potential to prevent hospital-acquired *C. difficile* infection in patients on antibiotic therapy. Florajen®, a probiotic with 20 billion live cultures of *Lactobacillus acidophilus* per capsule, is available at PTMC pharmacy for physician use.

CORRESPONDENCE

Dr. Glen Komatsu, a palliative physician on staff at PTMC and Little Company of Mary Torrance, has responded to the opioid conversion table published in the 1st Quarter issue of the P&T Newsletter.

Methadone equivalence to morphine changes with the dose of morphine. Methadone is at least 4 times stronger than morphine at low doses and as much as 20 times stronger at high doses (high dose morphine 10mg \approx methadone 2.5 - 0.5 mg).¹ Intravenous methadone is twice as strong as oral methadone. This non-linearity of equivalence is due to the unique pharmacokinetic profile of methadone which includes extensive bioavailability, long half-life, lipophilicity, and incomplete cross-tolerance.²

Pain or palliative care consults are recommended when converting patients to intravenous methadone from other opioids due to the complex pharmacokinetics of methadone.

REFERENCES:

1. Dan Farber Cancer Institute Pain Management Table and Guideline 2013. https://d12vjkv4xzz5l.cloudfront.net/uploads/7a382cf7c80c3373d54449ea4ff28879/original/Pain_Management_Guidelines_2013_pink_book.pdf.
2. Shaiova L, Berger A et al. Consensus guideline on parenteral methadone use in pain and palliative care. Palliative and Supportive Care;6:165-176.

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