4-2009

Pharmacy Newsletter : April 2009

Pharmacy Department
Aga Khan University Hospital

PHARMACY NEWSLETTER

April 2009 Vol. 17, No. 1

Published by
The Drug and Poison Information Centre, Department of Pharmacy Services,
Aga Khan University Hospital, Stadium Road, P.O. Box 3500, Karachi 74800, Pakistan.
Pharmacy Newsletter intends to provide information regarding the Pharmacy and Therapeutic Committee's decisions, current concepts in drug therapy, MOH (Pakistan), FDA (USA), CSM (UK) and other regulatory agencies' warnings, drug interactions, ADR and matters related to drug usage.
Opinions expressed are of the authors and do not necessarily represent AKUH views / recommendations. Publication of this Newsletter has been funded by an endowment grant of Pharmacists Group of Ontario, Canada

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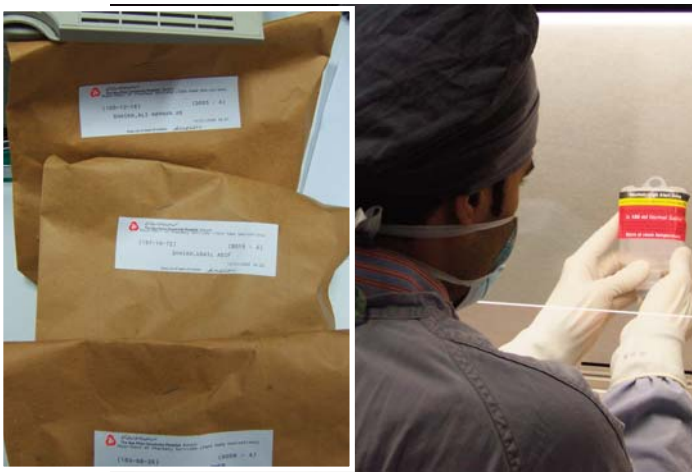

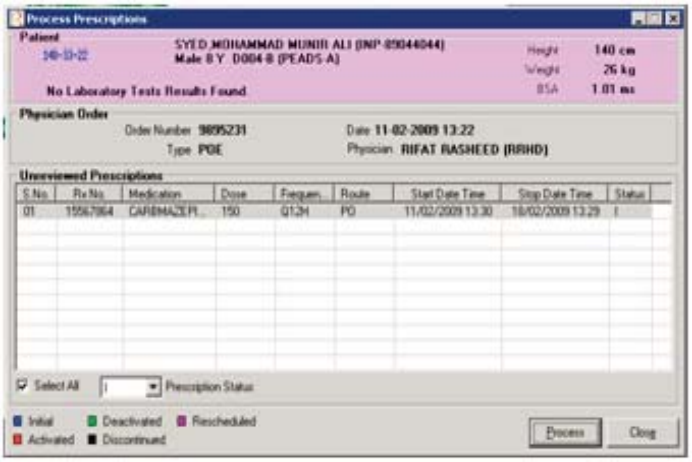

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PHARMACY NEWS

Take Home dispensing time reduced

To achieve timely dispensing of Take Home, Pharmacy department initiated a project in which Take Home orders of specific pharmacies (C1, C2) have been diverted to a single pharmacy (Peads) for a specific duration of time (from 12:00-4:00 pm). The concept of Take Home pharmacy has resulted in speedy delivery of Take Home medications. The mean take home dispensing time was reduced from 50 minutes to 30 minutes.

High alert medications

This policy intends to provide specific written procedures for the safe storage, prescribing, dispensing, administration and handling of concentrated electrolytes that have been designated as high-alert medications by JCIA . Currently a project has been initiated that involves dispensing of premixed/diluted High Alert Medications including Potassium Chloride, Potassium Phosphate, Magnesium Sulfate and Hypertonic Saline, and 100% beds have been covered through this.

Poster presentation

Pharmacist Shaukat Ali Muttaqi Shah presented a poster (*Quantitative Analysis of Drug-Drug Interaction in Ambulatory Care Setting*) in a congress at Basel, Switzerland. The presentation was organised by Federation of International Pharmaceuticals (FIP).

Clinical pharmacy services coverage

The floors covered by clinical pharmacists include:
ICU, CICU, CCU, NICU, Peads, C2 post call, stroke unit, Gastroenterology, Psychiatry and Oncology. Through pharmacists' intervention, total cost avoidance in the year 2008 is:
Rs 9,845,000.

Reducing errors related to Look Alike Sound Alike drugs (LASA)

A multidisciplinary project was completed with the target of reducing the errors associated with LASA drugs to 50%. The major interventions of the group to achieve the target were: TALL man lettering, use of cautionary labels for look-alike drugs and computer alerts for physician and nurses for LASA drugs.

Height weight update through Computerised Physician Order Entry (CPOE)

Patient demographics and related information is of utmost importance while prescribing drugs and reviewing the orders. Among these, the height and weight of patient is a vital and important information based upon which the drugs could be prescribed and dispensed in right dose and frequency. For ensuring compliance, Pharmacy in collaboration with IT worked to ensure the availability of this information to users prescribing, reviewing and dispensing the medications. Since children are more prone to dose variations and the right dose and frequency is detrimental in avoiding treatment failure or overdose, the team selected this group of patients for the implementation of this project in initial phase. Therefore currently no order for a child would be accepted by the COPE system if the height and weight information is not updated. A similar process will be adopted for adult patients in next the phase.

FDA ALERTS

Alert regarding Clopidogrel

Decrease in effectiveness may be due to genetic differences or because of interference with other drugs. FDA recommends the following regarding clopidogrel use:

- Healthcare providers should continue to prescribe and patients should continue to take clopidogrel as directed, because clopidogrel has demonstrated benefits in preventing blood clots that could lead to a heart attack or stroke.
- Healthcare providers should re-evaluate the need for starting or continuing treatment with a PPI in patients taking clopidogrel.

Summary of FDA Alerts 2008

Month	Drug(s)	Summary
November	Phenytoin	Increased risk of serious skin reactions including Stevens Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) from phenytoin therapy in Asian population
November	Biphosphonates	No increased risk of atrial fibrillation in patients treated with a bisphosphonate drug
October	OTC cough and cold drugs	Modified product labels of OTC cough and cold medicines as 'do not use' for children under 2 years of age
September	Statins	New indications amyotrophic lateral sclerosis (ALS), a neurodegenerative disease often referred to as ' Lou Gehrig's Disease'
September	Rituximab	Risk of Progressive multifocal leukoencephalopathy PML
August	Simvastatin/Ezitimibe	Combination used resulted in large number of cancers and cancer associated deaths, whereas no additional CVS protection observed
August	Simvastatin/Amiodarone	Dose dependent adverse effects including Rhabdomyolysis, muscle injury, renal failure and deaths have been reported with this combination
July	Erythropoietin	Use of Erythropoietin can increase the risks of thrombovascular events, shortened time to tumor progression or recurrence, and shortened survival time
July	Bevacizumab	Several cases of microangiopathic hemolytic anemia (MAHA) in patients with solid tumors receiving Avastin in combination with sunitinib malate
July	Fluoroquinolone	Increased risk of developing tendinitis and tendon rupture in patients taking fluoroquinolones for systemic use
June	Antipsychotics	'Conventional and atypical antipsychotics' increases risk of mortality in elderly patients treated for dementia-related psychosis
May	Mycophenolate Mofetil	Reports of infants born with serious congenital anomalies, including microtia and cleft lip and palate, following exposure to mycophenolate mofetil (MMF) during pregnancy
March	Montelukast	Possible association between the use of and behavior/mood changes, suicidality (suicidal thinking and behavior) and suicide
February	Heparin Sodium	Reports of serious adverse events including allergic or hypersensitivity-type reactions, with symptoms of oral swelling, nausea, vomiting, sweating, shortness of breath, and cases of severe hypotension
February	Varenicline	Serious neuropsychiatric symptoms, including changes in behavior, agitation, depressed mood, suicidal ideation, and attempted and completed suicide
January	Antiepileptics	Patients receiving antiepileptic drugs had approximately twice the risk of suicidal behavior or ideation (0.43%) compared to patients receiving placebo (0.22%)
January	Bisphosphonates	Possibility of severe and sometimes incapacitating bone, joint, and/or muscle (musculoskeletal) pain in patients taking bisphosphonates

DRUG SAFETY UPDATE

Amiodarone - Fluconazole

Amiodarone (antiarrhythmic, group III) is a potent 'membrane active' cationic amphiphilic compound which has both polar and nonpolar constituents. While Fluconazole, a triazole antifungal, acts by inhibiting the fungal cytochrome P-450 dependent enzyme, lanosterol-14-alph-demethylase. An Adverse drug reaction occurred due to the simultaneous use of Fluconazole and Amiodarone, that is QT-prolongation. As concurrent use of amiodarone and fluconazole may result in an increased risk of cardiotoxicity (QT prolongation, torsades de pointes, cardiac arrest) with severity is major. Strict cardiac monitoring and caution is required when used concurrently.

N-Acetylcystein (IV)

To protect kidneys from the toxic effects of dyes used in different procedures (for example pre and post catheterisation) Acetylcysteine is one of the drugs of choice. N-Acetylcysteine (NAC) is given intravenously pre-op and after that oral doses are given for 48 hours. An adverse effect of rash followed by phlebitis was reported, when patient was given intravenous Acetylcysteine post-op instead of oral. Then by discontinuing IV-NAC patient recovered from the adverse reaction occurred. *Advise:* injudicious use of IV NAC may result in ADRs and hence the proper protocol for NAC administration should be followed. The guidelines and research done on the prophylactic dose of NAC, usually recommends an oral dose of 600-1200 mg PO Q12h X 4 doses, 2 doses pre-contrast and 2 doses post-contrast is optimal; and another option is IV Acetylcysteine 600-1200 mg IV x 1 over 15 minutes, then 600-1200 mg PO q12h x 4 doses post-procedure along with hydration (IV formulation is available for high risk patient's with acute ST-elevation MI undergoing cardiac catheterisation).

Digoxin Toxicity

Digoxin is a cardiac glycoside used in cardiac arrhythmia. Digoxin exerts a positive ionotropic effect on both the normal and failing heart, which increases linearly with the dose, and is mediated through inhibition of transmembranous active transport of sodium and potassium. Since we do not have Digoxin Immune Fab available in Pakistan the treatment modalities for Digoxin overdose include anti-arrythmics, charcoal and cholestyramine. Cholestyramine was found to have minimal effect on digoxin absorption and excretion in man but was reported to decrease the serum digoxin half-life from 75.5 hours to 19.9 hours in a 94 year old man with chronic digoxin toxicity and renal insufficiency.

ESTABLISHMENT OF A NEW ANTI- H.PYLORI REGIMEN: SEQUENTIAL THERAPY

According to the American College of Gastroenterology (2007), an alternative dosing regimen is sequential therapy. Eradication rates exceeding 90% may be achieved with sequential therapy consisting of a proton pump inhibitor (40 mg daily) plus amoxicillin (1 g twice daily) for the first 5 days, followed by PPI(20 mg), clarithromycin (500 mg) and tinidazole (500 mg) twice daily for the remaining 5 days or standard 7 days treatment [PPI (20 mg), clarithromycin (500 mg) and amoxicillin (1 g) twice daily]. The sequential therapy is well tolerated by children, adults and elderly patients and may be superior to clarithromycin-based triple therapy in patients with clarithromycin-resistant H. pylori infections.