



HOSPITAL
PHARMACY
ADMINISTRATION



Special points of interest:

- Clinical Pharmacy Implementation
- Medication Errors Reporting & Prevention
- Pharmacists Continuous Education
- HPA News & Achievements

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HPA Newsletter

Volume II, Issue VII

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HPA Latest Updates

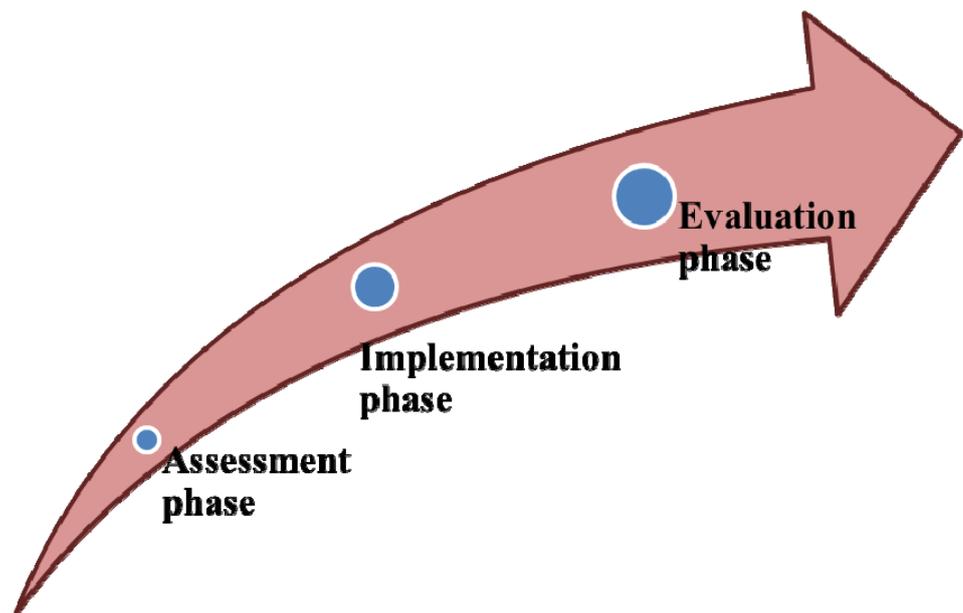
On 13 January 2016, a meeting was held at CA-PA between “ Hospital Pharmacy Administration -HPA team members”, “ Governmental Inspection, team members”, “ Menofia Clinical pharmacy inspectors, at menofia directorate”

That meeting was to discuss the steps to launch the clinical pharmacy implementation in menofia. The following was discussed to be begun with :

- Assessment of menofia hospitals, and categorizing them into 3 stages.
- Selecting a model hospital.
- Selection of “Clinical pharmacy, team members” according to the scoring system .
- Facilitate training for clinical pharmacists at stage I hospitals .



Phases of clinical pharmacy implementation





“With the increase in the number of medications taken by individual patients has come an increase in the potential for drug–drug interactions.”



The Need for Improved Management of Known Drug Interactions.

NO HARMe received a medication error report concerning a hypertensive, diabetic and Hypercholesterolemic patient who entered ICU and was prescribed (omeprazole) for treatment of the stress ulcer and antiplatelet (clopidogrel) which have a serious interaction (**Category X drug interaction**).

Omeprazole (Prilosec, Zegerid) belongs to group of drugs called proton pump inhibitors. It decreases the amount of acid produced in the stomach.

Omeprazole is used to treat symptoms of gastroesophageal reflux disease (GERD) and other conditions caused by excess stomach acid. It is also used to promote healing of erosive esophagitis (damage to your esophagus caused by stomach acid).⁽¹⁾ **Clopidogrel** is a platelet aggregation inhibitor. It works by slowing or stopping platelets from sticking to blood vessel walls or injured tissues.⁽²⁾

Omeprazole decreases effects of clopidogrel by affecting hepatic enzyme CYP2C19 metabolism. High likelihood serious or life-threatening interaction. Contraindicated unless benefits outweigh risks and no alternatives available. Clopidogrel efficacy may be reduced by drugs that inhibit CYP2C19. Inhibition of platelet aggregation by clopidogrel is entirely due to an active metabolite. Clopidogrel is metabolized to this active metabolite in part by CYP2C19.⁽³⁾

Severity of Drug Interaction: Major⁽²⁾

Discussion: Diminished Anti-platelet Activity of clopidogrel due to Impaired CYP2C19 Function by Omeprazole

• Clopidogrel is a prodrug. Inhibition of platelet aggregation by clopidogrel is entirely due to an active metabolite. The metabolism of clopidogrel to its active metabolite can be impaired by use with concomitant medications, such as omeprazole, that interfere with CYP2C19 activity. Avoid concomitant use of clopidogrel and omeprazole. Co-administration of clopidogrel with 80 mg omeprazole, a proton pump inhibitor that is an inhibitor of CYP2C19, reduces the pharmacological activity of clopidogrel if given concomitantly or if given 12 hours apart.⁽⁴⁾

"FDA reminder to avoid concomitant use of Plavix® (Clopidogrel) and omeprazole"

The U.S. Food and Drug Administration (FDA) is reminding the public that it continues to warn against the concomitant use of Plavix® (Clopidogrel) and omeprazole because the co-administration can result in significant reductions in clopidogrel's active metabolite levels and antiplatelet activity.⁽⁵⁾ FDA wishes to emphasize additional facts that

may be a source of confusion among healthcare professionals:

- With regard to the proton pump inhibitor (PPI) drug class, this recommendation applies only to omeprazole and not to all PPIs. Not all PPIs have the same inhibitory effect on the enzyme (CYP 2C19) that is crucial for conversion of Plavix into its active form.

- Pantoprazole (Protonix) may be an alternative PPI for consideration. It is a weak inhibitor of CYP2C19 and has less effect on the pharmacological activity of Plavix than omeprazole.⁽⁵⁾

How to Avoid This Medication Error:

- Ensure that pharmacy information systems have programming to detect dangerous drug-drug interactions and that the system is updated regularly according to the recommended schedule.
- Develop processes to support timely review of all medication orders by a pharmacist, ideally before administration of the first dose.
- Develop training programs for health care professionals.

Free Drug Interaction checker programs:

- Medscape
<http://reference.medscape.com/drug-interactionchecker>
- Drugs.com
http://www.drugs.com/drug_interactions.html
- Rx List
<http://www.rxlist.com/drug-interaction-checker.htm>

Credible Drug Interaction Checker, that need subscription:

- Lexi comp
<http://www.crlonline.com/lco/action/interact>
- Uptodate

References:

1. Drugs.com. Omeprazole: Uses, Side Effects & Dosage Guide - Drugs.com [Internet]. 2016 [cited 14 January 2016]. ([Click Here](#))
2. Drugs.com. Clopidogrel: Indications, Side Effects, Warnings - Drugs.com [Internet]. 2016 [cited 14 January 2016]. ([Click Here](#))
3. Reference.medscape.com. Multi-Drug Interaction Checker [Internet]. 2016 [cited 14 January 2016]. ([Click Here](#))
4. Fda.gov. Zegerid (omeprazole/sodium bicarbonate) powder for oral suspension and capsules [Internet]. 2016 [cited 14 January 2016]. ([Click Here](#))
5. Fda.gov. FDA reminder to avoid concomitant use of Plavix (clopidogrel) and omeprazole [Internet]. 2016 [cited 14 January 2016]. ([Click Here](#))

COPD mild exacerbations, Uncontrolled Diabetes

Shoubra General Hospital

Presenting Complaint:

Mr. M A is a 56 year old male patient, 105 kg, He was admitted to the Internal Medicine department on 5/12/2015 suffering from Chest tightness, Difficulty of breathing, Productive cough, Polyuria, Polydipsia

Diagnosis:

COPD mild exacerbations

Patient History:

Having Medical History of HTN, DM, IHD (performed CABG on April 2015)

Medication History:

Aspirin, Bisoprolol, Trimetazidine, Captopril, Salbutamol inhaler, Isosorbide Dinitrate, Glimepiride

Subjective:

The patient was suffered from: Chest tightness, Difficulty of breathing, Productive cough, Polyuria

Objective:

1. Laboratory Investigation:

Hb 13.8 u/L, **WBCs** 10×10^3 μ L, **Platelets** 212/ μ L, **Na** 135 mEq/L, **K** 4.5 mEq/L, **S. Cr** 1.2 mg/dL, **Urea** : 50 mg/dl, **ALT** : 21 IU/L, **AST** : 32 IU/L, **Random Blood Glucose** : 290

2. Physical Examination:

Vital Signs: **BP**: 150/100, **HR** :80, **R.R** : 18 breath/min, **L.L.(Lower limb)**: No edema, **Chest**: Coarse Crepitation, Emphysema, **Heart** S1,S2

3. U.S Abdomen:

Abdomen : lax

4. Diagnosis:

COPD mild exacerbations, uncontrolled Diabetes Mellitus, HTN

Assessment:

Pharmaceutical related problems:

1. COPD
2. Diabetes, HTN

Problem 1: Treatment of COPD:

Etiology:

The primary cause of COPD is exposure to tobacco smoke. tobacco smoking accounts for as much as 90% of COPD risk. ([Click Here](#))

Current Therapy:

Nitroglycerin Retard 2.5 mg Tab. At 8 a.m, 4 p.m
Acetyl Salicylic Acid 150 mg every 24 hours
Bisoprolol 5 mg every 12 hours
Captopril 25 mg every 24 hours
Glimepiride 3 mg every 8 hours
Levofloxacin 500 mg P.O every 24 hours
Beclomethasone+ Salbutamol inhaler every 8 H
Bisolvon syrup 15 ml every 8 hours
Ipratropium bromide Inhalation every 6 hours

Therapy Indicated: ([Click Here](#))

Plan:

Problem 1: Treatment of COPD:

Therapeutic Objective:

Oral and inhaled medications are used for patients with stable disease to reduce dyspnea and improve exercise tolerance. Most of the medications used are directed at the following 4 potentially reversible causes of airflow limitation in a disease state that has largely fixed obstruction:

- Bronchial smooth muscle contraction
- Bronchial mucosal congestion and edema
- Airway inflammation
- Increased airway secretions⁽¹⁾

Interventions:

- Smoking cessation and restriction of other potential risk factors, e.g. occupational dusts and chemicals.
- Reduce the risk of exacerbations, e.g. influenza and pneumococcal immunization.⁽²⁾

Monitoring Parameters:

Chest x ray,

Clinical Pharmacist Intervention:

Problem 1: Treatment of COPD:

- Add Atorvastatin 40-80 mg every 24 hours
The patient has past medical history of IHD and coronary artery bypass graft surgery 8 months ago

Patient Education:

Patient counseling for the following:

- Stop smoking.
- Decrease weight, Avoid pollutants
- Do breathing exercises⁽³⁾

Quiz:

1. Captopril should be discontinued when?

- A. mild renal impairment.
- B. Hyperkalemia (>5.5 mEq/L)
- C. Hypokalemia (<3.5 mEq/L)

2. Predicted Side effects after Salbutamol Administration ?

- A. TachyCardia, Hypokalemia .
- B. TachyCardia, Hyperkalemia .
- C. BradyCardia, Hypokalemia

3. Do you have any further recommendations?

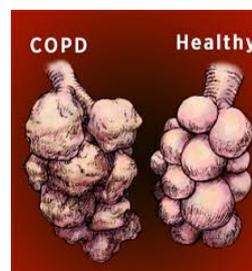
Please, contact us at:
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References:

1. Emedicine.medscape.com. Chronic Obstructive Pulmonary Disease (COPD) Treatment & Management: Approach Considerations, Smoking Cessation, Management of Inflammation [Internet]. 2016 [cited 11 January 2016]. ([Click Here](#))
2. Patient. Chronic obstructive pulmonary disease (COPD) | Patient [Internet]. 2016 [cited 11 January 2016]. ([Click Here](#))
3. WebMD. 11 Breathing Tips for People With COPD [Internet]. 2016 [cited 11 January 2016]. ([Click Here](#))



“COPD is a chronic lung disease that makes it hard to breathe, which includes chronic bronchitis and emphysema.”



Last Month Quiz Answers

1. C
2. B

Egyptian Scientific Publication:

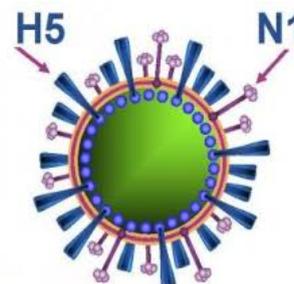
Avian influenza vaccination in Egypt: Limitations of the current strategy

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ABSTRACT Vaccination of domestic poultry against avian influenza (AI) has been used on a large-scale in South East Asia since 2003 and in Egypt since 2006 to fight H5N1 highly-pathogenic avian influenza (HPAI) epidemics. The decision to use mass vaccination against HPAI in Egypt was taken as an emergency measure based on positive impact of such control measures in Vietnam and the People's Republic of China. However, three years on, the impact on disease control of AI vaccination in Egypt has been very limited. Despite the continuous vaccination of poultry against HPAI, poultry outbreaks and human cases are reported regularly. A recent assessment study highlighted substantial weaknesses in the current immunization programme and its lack of positive impact on the spread of infection or the maintenance of public health safety. The shortcomings of the vaccination strategy may be attributed in part to a lack of sufficient support in terms of funding and communication, the absence of an efficient monitoring system, and inadequate training of

field technicians. The difficulties of blanket vaccinations in semi-commercial farms and household poultry sectors are well known, however, improvements in the industrial sector should be possible though better government controls and greater collaboration with the private sector. AI vaccination should be regarded as just one control tool within a broader disease control program integrating surveillance, outbreak investigation, disease management systems, and the rigorous implementation of bio-security measures. If incorrectly implemented, AI vaccination has a limited impact as a disease control measure. Moreover, without strict bio-security precautions undertaken during its application, farm visits to vaccinate poultry could facilitate the spread of the virus and therefore become a risk factor with important implications on the maintenance of the virus and potential risk for human exposure.

To read the full article, please ([Click Here](#))



“Bird flu, or avian flu, is an infectious type of influenza that spreads among birds. In rare cases, it can affect humans .”





HOSPITAL PHARMACY ADMINISTRATION



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HPA

Our Newsletter

The Hospital Pharmacy Administration Newsletter aims to publicize up-to-date news, information, resources, and recent healthcare topics that have an impact on the patient's quality of care in addition to practices serving physicians and pharmacists. A main goal of this publication is to send our news and updates on health care drug related issues, recently reported and have direct impact on Clinical and Hospital Pharmacy practice in Egypt.

Hospital Pharmacy Administration (HPA)

Vision

To implement and spread clinical awareness among our hospital pharmacists to ensure better patient quality of care.

Mission

To manage and assure that hospital pharmacists meet each individual patient's drug-related needs through provision of pharmaceutical care services.

Goals and Objectives

Increase awareness of hospital Pharmacists on the importance of applying clinical knowledge in their pharmacy practice through:

- Plotting an appropriate pharmaceutical care plan for each patient according to his medication use strategy.
- Helping healthcare team through promptly responding to drug information requests.
- Integrating patient counseling into the process of dispensing.

NO HARMe

NO HARMe is a national voluntary medication error and 'near miss' reporting program founded for the purpose of sharing the learning experiences from medication errors. Implementation of preventative strategies and system safeguards to decrease the risk for error-induced injury and thereby promote medication safety in healthcare is our collaborative goal.

To report a medication error to NO HARMe:

- Visit our website: www.eda.mohealth.gov.eg
or,
- Email us at:
medication.errors.system@gmail.com

NO HARMe guarantees confidentiality
and security of information received



**WHEREVER THE ART OF
MEDICINE IS LOVED,
THERE IS ALSO A LOVE
FOR HUMANITY**

