



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

HPA latest updates

HPA attended several conferences in clinical pharmacy which are International Pharmaceutical Federation (FIP) and Symposium about Clinical Research on Animals.

FIP was conducted in Dusseldorf-Germany from 29th of September till 3rd of October discussing topics about Evidence Based Medicine and Medication Therapy Management.

Attending FIP conference has many pros like

a) Experience transfer and Exchange in clinical pharmacy field from different countries.

b) Getting to know different cultures and norms.

c) Getting to share experience from different Egyptian governmental sectors travelling together.

Clinical Research on Animals Symposium was conducted in National Cancer Institute in 3rd of October to discuss the application of the decree that states the use of Animals in Clinical Research which is considered a great opportunity for strategic development of regulating clinical research in Egypt either on Animals or Humans.





A Case of Digoxin Toxicity Due to Digoxin and Amiodarone Drug Interaction

NO HARMe received a medication error report concerning an elderly male patient with chronic atrial fibrillation and chronic heart failure, who was prescribed Digoxin (0.25 mg once daily except Fridays) and Amiodarone (400mg once daily). Consequently, the patient suffered from nausea, vomiting and bradycardia. Blood samples were taken to monitor serum digoxin level and results indicated digoxin toxicity.

Physician stopped Digoxin and Amiodarone for 2 days until blood pressure and heart rate became 110/70 and 68 respectively. Afterwards, the patient was prescribed digoxin alone.

Digoxin is frequently used to treat common cardiac diseases in the elderly (heart failure, atrial fibrillation). Elderly are at risk for toxicity due to age-related changes. Additionally, elderly frequently have concomitant diseases which affect the pharmacokinetics in digitalis glycosides; hypo- and hyperthyroidism and renal function decline will affect clearance of digoxin. Must be observant for noncardiac signs of toxicity in elderly such as anorexia, vision changes (blurred), confusion, and depression. Changes in dose may be necessary with declining renal function with age; monitor closely. ⁽¹⁾

Amiodarone [U.S. Boxed Warnings (tablet)]: Only indicated for patients with life-threatening arrhythmias because of risk of substantial toxicity. Alternative therapies should be tried first before using Amiodarone. Patients should be hospitalized when Amiodarone is initiated. ⁽²⁾

Elderly: avoid antiarrhythmic as first-line treatment. Elderly patients may be predisposed to toxicity due to reduced renal, hepatic, or cardiac function. It is recommended to monitor thyroid function (TSH) quarterly for those elderly taking Amiodarone for extended periods ⁽²⁾

Amiodarone may increase the serum concentration of Cardiac Glycosides. ⁽³⁾

Both medications are considered to be potentially inappropriate in this patient population (Beers Criteria: Quality of evidence - high; Strength of recommendation - strong). ^(1,2)

Severity of Drug Interaction: Major⁽³⁾

Risk Rating: D (Consider therapy modification). ⁽³⁾

Discussion:

In patients receiving digoxin therapy, administration of oral Amiodarone regularly results in an increase in the serum digoxin concentration that may reach toxic levels with resultant clinical

toxicity. Amiodarone taken concomitantly with digoxin increases the serum digoxin concentration by 70% after one day.

According to Amiodarone SmPC (Summary of Marketed Product Characteristics) under section (4.5 Interaction with other medicinal products and other forms of interaction), it was stated the following: ⁽⁴⁾

Some of the more important drugs that interact with Amiodarone include warfarin, digoxin, phenytoin and any drug which prolongs the QT interval. ⁽⁴⁾

Administration of Amiodarone to a patient already receiving digoxin will bring about an increase in the plasma digoxin concentration and thus precipitate symptoms and signs associated with high digoxin levels. Clinical, ECG and biological monitoring is recommended and digoxin dosage usually has to be reduced. A synergistic effect on heart rate and atrioventricular conduction is also possible. ⁽⁴⁾

How to Avoid This Medication Error:

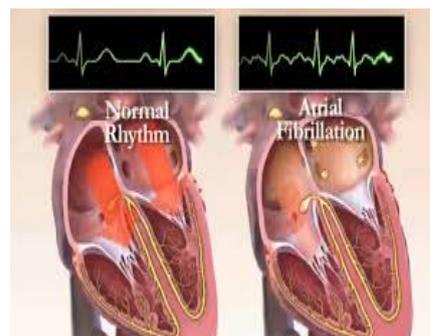
- i. Reduce the dose of cardiac glycosides by 30% to 50% or reduce the frequency of administration when initiating concomitant Amiodarone therapy. ⁽¹⁾
- ii. Monitor for increased serum concentrations and toxic effects (eg, gastrointestinal symptoms, visual disturbances, cardiac arrhythmias) of cardiac glycosides. ⁽¹⁾

References:

- I. Crlonline.com. Login [Internet]. 2015 [cited 8 October 2015]. ([Click Here](#))
- II. Crlonline.com. Login [Internet]. 2015 [cited 8 October 2015]. ([Click Here](#))
- III. Crlonline.com. Login [Internet]. 2015 [cited 8 October 2015]. ([Click Here](#))
- IV. Medicines.org.uk. Amiodarone 100mg Tablets - Summary of Product Characteristics (SPC) - (eMC) [Internet]. 2015 [cited 8 October 2015]. ([Click Here](#))



“Amiodarone taken concomitantly with digoxin increases the serum digoxin concentration by 70% after one day”



Unstable Angina (ASC)- Case Report

Shoubra General Hospital

Presenting Complaint:

Mr.MM is 65 years patient was admitted to the ICU on 8/10/2015 suffering from typical chest pain not relieved by nitrate.

Diagnosis:

Unstable angina.

Patient History:

having History of renal impairment and Bronchial asthma, non- diabetic, non hypertensive. known to be heavy smoker. He is 60kg weight

Medication History:

Nitromack 2.5mg(1*2), Quibron 300mg (1/2*2), Vastarel MR (1*2).

Subjective:

The patient was suffered from: chest pain, sweating, shortness of breath .

Objective:

1. Laboratory Investigation:

CKMB:8 % of CK, **Ck:**100 IU/L, **WBCs** 9*10³ μL, **Platelets** 250/ μL, **Sodium** 135 mEq/L, **Potassium** 4.5 mEq/L, **Toxin:** negative
S. Cr 2.5 mg/dL, **HB** 9 g/dL

2.Physical Examination:

Vital Signs:

GEN: B.P: 135/90 mmHg, **Temp.:** 37 °C, **RR:** 18 breaths/min, **H.R** 95 bpm, **L.L.** (Lower limb): No edema, **Chest:** Wheezy, **Heart** S1,S2

3.ElectroCardioGram(ECG):

ST Depression (VI-V4).

4.Diagnosis:

Unstable angina.

Assessment:

Treatment of Unstable angina

Treatment of renal impairment

Problem I:Treatment of Unstable angina:

Etiology: May be due to:

- I. Coronary artery disease due to atherosclerosis is the most common cause of unstable angina. ([Click Here](#))

Current Therapy:

- I. Capoten 25mg(1/4 tab q 8hrs)
- II. Zantac 50mg iv(1 amp q 8hrs)
- III. Plavix 75mg (1 tab q 24hrs)
- IV. Altiazem 60mg tab(1 tab q 12 hrs)
- V. Nitroderm Patch5mg for 16 hours q 24 hr
- VI. Ator 40mg tab (1 tab q 24hrs)
- VII. Clexane 60mg (syring q 12 hrs)
- VIII. Vastarel MR tab. (1 tab q12 hrs)

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

Plan:

Problem I: Treatment of Unstable angina:

Therapeutic Objective:

- Blood thinners (antiplatelet drugs) are used to treat and prevent unstable angina. You will receive these drugs as soon as possible if you can take them safely.
- Other treatments may include medicines to control blood pressure, anxiety, abnormal heart rhythms, and cholesterol (such as a statin drug) .^{(1),(2)}

Interventions:

- All doses should be adjusted according to the patient Crcl.

Monitoring Parameters:

- ECG and Crcl

Clinical Pharmacist Intervention:

Problem I: Treatment of Unstable angina:

- I. trtimetazidine is contraindicated when cr.cl.< 30ml/min, & his Cr.Cl.=25 ml/min
- II. Ranitidine with Cr.Cl.<50ml/min is 50mg IV/ IM,q18-24 hr.

Patient Education:

Patient counseling for the following:

- I. Eat smaller meals more often.
- II. Stay active. Rest often during exercise.
- III.Keep a healthy weight.
- IV.Avoid stress.
- V.Stop smoking⁽³⁾

Quiz:

1. What other treatment used in ACS?

- A. B-blockers
- B. Valsartan
- C. Aspirin

2. Are there any missing clinical interventions?

3. Do you have any further recommendations?

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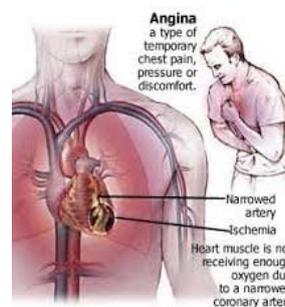
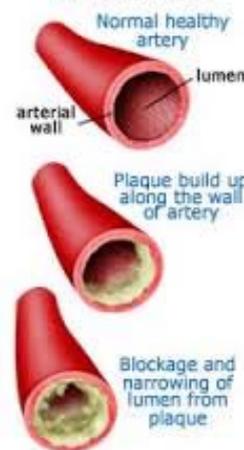
References:

1. Updated by: Michael A. Chen a. Unstable angina: MedlinePlus Medical Encyclopedia [Internet]. Nlm.nih.gov. 2015 [cited 13 October 2015]. ([Click Here](#))
2. Emedicine.medscape.com. Unstable Angina Treatment & Management: Approach Considerations, Initial Medical Management, Further Medical Management [Internet]. 2015 [cited 13 October 2015]. ([Click Here](#))
3. Online.lexi.com. Login [Internet]. 2015 [cited 13 October 2015]. ([Click Here](#))



“Angina happens when the heart muscle does not get the right amount of oxygen-rich blood.”

Coronary Artery Cross-Section



Last Month Quiz answers

1. B
2. Renal impairment

Egyptian Scientific Publication:

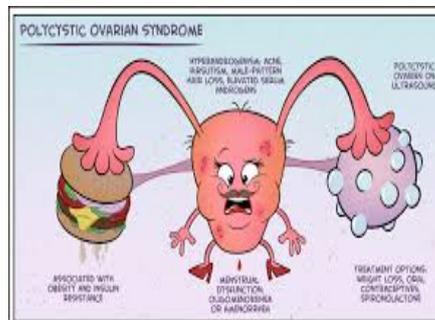
N-acetyl cysteine vs. metformin in treatment of clomiphene citrate-resistant polycystic ovary Syndrome

Aboubakr Elnashar, M.D., Mohi Fahmy, M.D., Ahmad Mansour, M.D., and Karima Ibrahim, M.S. Department of Obstetrics and Gynecology, Benha University Hospital, Benha, Egypt

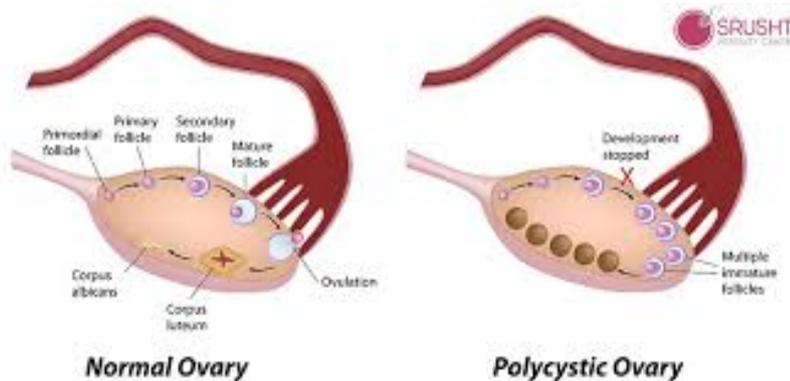
ABSTRACT To compare the effect of N-acetyl cysteine and metformin on hormonal profile (insulin and T) and ovulation rate in women with clomiphene citrate-resistant polycystic ovary syndrome. Prospective randomized controlled study. Department of obstetrics and gynecology in a university hospital in Egypt. Sixty-one infertile women with clomiphene citrate-resistant polycystic ovary syndrome were assigned randomly to receive either metformin (1,500 mg/d) or N-acetyl cysteine (1.8 g/d) for 6 weeks. Hormonal profile was determined before and after the course of treatment. Folliculometry was performed to assess ovulation. Ovulation rate and insulin and T changes. In the metformin group, there was a significant decrease in the fasting glucose, fasting insulin, and total T. In the N-acetyl cysteine group, there was no significant difference in the fasting glucose or fasting insulin and there was a signifi-

cant decrease in total T. There was no significant difference in the fasting glucose-fasting insulin ratio in both groups. In the metformin group, the rate of ovulation was 51.6% (16/31), vs. 6.7% (2/30) in the N-acetyl cysteine group, which was statistically significant. Metformin alone is an effective drug in inducing ovulation in clomiphene citrate-resistant polycystic ovary syndrome

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



“Metformin alone is an effective drug in inducing ovulation in clomiphene citrate-resistant polycystic ovary syndrome.”





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**

