



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

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CAPA Head's Message

Globally, pharmacy practice is passing through dramatic conceptual changes. Where, the concept inter-professional health care team started to replace the old fashion of individual players (physician, pharmacist, nurse, etc.). This necessitates the provision of pharmacists with up to date knowledge and skills to be patient and drug oriented rather than drug oriented profession. This was the main driving force for the Central Administration for Pharmaceutical Affairs (CAPA) to establish the Hospital Pharmacy Administration (HPA). Since that time HPA at CAPA pioneered in grasping and disseminating knowledge and experiences with all relevant stakeholders. The role of HPA was crowned through establishing the first clinical pharmacy practice standards. To keep its pivotal role, HPA initiated this newsletter to provide all relevant updates with its partners and stakeholders. We do believe and wish that this newsletter will be of a great help and added value to all our valua-

ble readers and followers.

So, be the first and join our **UNIQUE** journey...

UNIQUE = (Ultimate New Interesting Quality & Unusual Experience)

Sincerely,
Tamer Essam, PhD
Head of Central Administration of Pharmaceutical Affairs (CAPA)



HPA Achievements in Clinical Pharmacy Implementation All over Egypt

Hospital Pharmacy Administration (HPA) in the Central Administration of Pharmaceutical Affairs (CAPA) successfully established "**Clinical Practice Standards**" and its main aim is to enforce proper application of clinical pharmacy throughout the Ministry of Health (MOH) Directorates, and serves as a powerful tool in implementing good pharmacy practice to achieve optimal benefit to patients.

All governorates and sectors are well aware with the latest clinical practice standards. Most of them formed a clinical follow-up team in cooperation with HPA for better implementation of clinical pharmacy.

Governorate hospitals are classified into 3 stages based on hospital pharmacy assessment reports on such hospitals in co-ordination with clinical pharmacy follow-up team in each governorate. Hospital pharmacy assessment is based

on finding qualified clinical pharmacist, optimum hospital pharmacy practice and a model hospital to train under qualified hospitals.

Stage I consists of 9 governorates (Cairo - Giza - Qalyubia - Alexandria - Behera - Menofia - Dakahlia - Domyat - Portsaid).

Stage 2 and 3 are under assessment.





A Case of Neonatal Death Due to Ceftriaxone and Calcium Containing Product Drug Interaction



NO HARMe received a medication error report concerning a female neonate who was prescribed **ceftriaxone** and **calcium-containing IV solutions**. Unfortunately, this led to patient death.

Fatalities reported in neonates receiving ceftriaxone and calcium-containing IV solutions, a crystalline material was observed in the lungs and kidneys at autopsy. In some cases, the same IV infusion line had been used for both ceftriaxone and the calcium-containing fluid and, in some, a precipitate was observed in the IV infusion line. At least 1 fatality occurred in a neonate who received ceftriaxone and calcium-containing fluids administered at different times and through different infusion lines; no crystalline material was observed at autopsy in this neonate. ⁽¹⁾

Intravenous Calcium containing products may enhance the adverse/toxic effect of Ceftriaxone. Ceftriaxone binds to calcium forming an insoluble precipitate. ⁽²⁾

“Ceftriaxone binds to Calcium forming an insoluble precipitate.”

Severity of Drug Interaction: Major. ⁽²⁾

Risk Rating: D (Consider therapy modification). ⁽²⁾

Discussion:

According to Ceftriaxone prescribing information, consider the following:

Ceftriaxone is contraindicated in :

- premature newborns up to a corrected age of 41 weeks (weeks of gestation + weeks of life).
- full-term newborns (up to 28 days of age) with
 - jaundice, or who are hypoalbuminaemic or acidotic because these are conditions in which bilirubin binding is likely to be impaired
 - if they require (or are expected to require) IV calcium treatment, or calcium-containing infusions because of the risk of precipitation of ceftriaxone-calcium ⁽³⁾

Cases of fatal reactions with calcium-ceftriaxone precipitates in lungs and kidneys in premature and full-term newborns aged less than 1 month have been described. At least one of them had received ceftriaxone and calcium at different times and through different intravenous lines. ⁽³⁾

The high risk of precipitation in newborns is due to their low blood volume and the longer half

life of ceftriaxone compared with adults. ^(1,3)

Solutions containing ceftriaxone should not be mixed with or added to solutions containing other agents except 1% Lidocaine Injection BP (for intramuscular injection only). ⁽³⁾

How to Avoid This Medication Error:

1. Do not reconstitute, admix, or co administer with calcium-containing solutions (eg, Ringer's solution, Lactated Ringer, Hartmann's solution, parenteral nutrition), even via separate infusion lines/sites or at different times in any neonate. ^(1,3)
2. Ceftriaxone should not be diluted or administered simultaneously with any calcium-containing solution via a Y-site in any patient. However, ceftriaxone and calcium-containing solutions may be administered sequentially of one another for use in patients other than neonates if infusion lines are thoroughly flushed (with a compatible fluid) between infusions. ^(1,3)
3. Ceftriaxone is not compatible with Amscrine, Vancomycin, Fluconazole, Aminoglycosides, Pentamidine, Clindamycin phosphate and Labetalol. ^(1,3)

References:

1. Fda.gov. Information for Healthcare Professionals: Ceftriaxone (marketed as Rocephin and generics) [Internet]. 2015 [cited 15 July 2015]. ([Click Here](#))
2. Crlonline.com. Lexicomp Online Login [Internet]. 2015 [cited 15 July 2015]. ([Click Here](#))
3. Medicines.org.uk. Ceftriaxone Ig Powder for solution for injection - Summary of Product Characteristics (SPC) - (eMC) [Internet]. 2015 [cited 15 July 2015]. ([Click Here](#))



AKI with DM Type I and Suspected DVT - Case Report

Presenting Complaint:

Patient was admitted with signs of:
Severe right renal colic since 7 days, Flank pain, Nausea, and Fever

Diagnosis:

AKI and Severe UTI

Patient History:

Diabetes Mellitus since 20 years, and History of DVT

Medication History:

Insulin 100 IU: 30 IU am before breakfast, and 20 IU pm before dinner

Subjective:

The patient was suffered from:
Severe right renal colic since 7 days, Flank pain, Nausea, Fever, Oliguria, Hypertension (170/110), and Suspected DVT with left lower limb edema

Objective:

1. Laboratory Investigation:

Hb g/dL 11.8, **RBCs**/ μ L 4.74, **WBCs** 10^3 / μ L 7.2, **Neutrophils** 81.8, **Platelets** / μ L 189, **PT** 11.3, **Sodium** mEq/L 125, **Potassium** mEq/L 5.2, **BUN** mg/dL 18, **S. Cr** mg/dL 1.1, **Blood Urea** mg/dL 39

2. Physical Examination:

Vital Signs:

GEN: The patient is alert, conscious, **B.P:** 170/110 mmHg, **Temp.:** 38.5 °C, **RR:** 14 breaths/min, **H & N:** Eye movement with palpation and Right retinal detachment, **Chest:** Free, bilateral entry, **LL:** Left Lower limb edema

3. U.S Abdomen:

Rt. Kidney measuring 12.3 cm, Lt. kidney 13.7. Both kidneys show normal echogenicity with good CMD, No stones, cysts, masses, or hydronephrosis seen

4. Diagnosis:

AKI, Severe UTI, Diabetes Mellitus Type I, Hypertension recently discovered, Right Retinal Detachment, and Suspected DVT with Left Lower Limb Edema

Assessment:

Pharmaceutical related problems:

1. Treatment of AKI
2. Treatment of Severe UTI
3. Treatment of Suspected DVT with Left Lower Limb Edema
4. Treatment of Hypertension recently discovered
5. Treatment of Diabetes Mellitus Type I
6. Treatment of Right Retinal Detachment
7. Treatment of Anemia

Problem I: Treatment of AKI:

Etiology: May be due to: Prerenal, Intrinsic, or Postrenal cause. ([Click Here](#))

Current Therapy: 500 cc NS IV/ 24 hrs.

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

Plan:

Problem I: Treatment of AKI:

Therapeutic Objective:

- Measures to correct underlying causes of AKI should begin at the earliest indication of renal dysfunction
- Maintenance of volume homeostasis and correction of biochemical abnormalities remain the primary goals of treatment
- Correcting anemia if significant

Interventions:

- Investigate the cause of AKI, if it is prerenal, renal (intrinsic), or postrenal obstruction
- Measure accurately the urine output

Monitoring Parameters:

Urine output, Sr. Cr., BUN

Clinical Pharmacist Intervention:

Problem I: Treatment of AKI:

- IV NS/ 24 hrs. with monitoring to blood pressure and 24 hrs. urine volume. Stop when hypertension or edema occur
- Investigation for the cause of AKI

Patient Education:

Patient counseling for the following:

1. Hyperkalemia
2. DM type I
3. Hypertension

Quiz:

1. What do you think the real cause of AKI in this case?

- A. UTI
- B. Uncontrolled DM Type I
- C. Both A and B

2. According to the previous answer, which type of AKI will be considered?

- A. Prerenal AKI
- B. Renal (Intrinsic) AKI
- C. Postrenal AKI

3. Do you have any further recommendations?

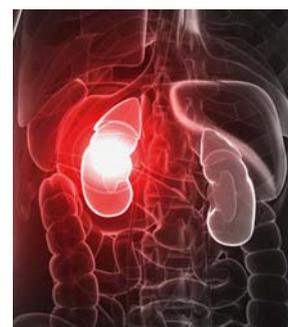
Please, contact us at:
hosprx@eda.mohealth.gov.eg

References:

1. Emedicine.medscape.com. Acute Kidney Injury: Practice Essentials, Background, Pathophysiology [Internet]. 2015 [cited 15 July 2015]. ([Click Here](#))



“Acute kidney injury (AKI) is defined as an abrupt or rapid decline in renal filtration function.”



Egyptian Scientific Publication: Pharmacoepidemiological study of self-medication in adults attending pharmacies in Alexandria, Egypt

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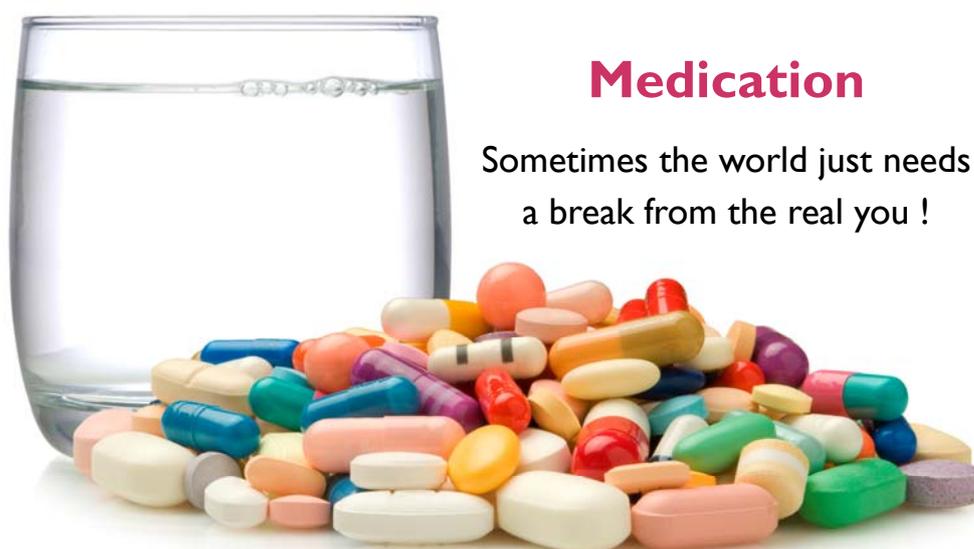
ABSTRACT A cross-sectional study was conducted to determine the extent and pattern of self-medication among adults, to identify their knowledge and practice concerning the purchased drugs and to calculate prescribing and purchaser care indicators. Following WHO methods, 35 pharmacies were randomly selected from districts in Alexandria city, Egypt. Of 1294 clients interviewed at these pharmacies, 1050 (81.1%) purchased self-medication; the commonest reason given was a belief that the condition was minor. The most frequently dispensed drugs were those for the respiratory system.

The mean number of drugs per encounter was 1.10, mean cost LE 7.29 and mean dispensing time 2.53 minutes. Purchasers' knowledge and practice regarding the purchased drugs were poor.

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



“Several aspects of irrational drug use were found in this study, with a very high rate of self-medication and poor knowledge and practice concerning the purchased drugs.”



Medication

Sometimes the world just needs
a break from the real you !



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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**

