



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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## HPA Latest Updates

Hospital pharmacy Administration In corporation with the training department at CAPA and pharmacy administration in Cairo, Giza directorate organized a series of workshops for hospital pharmacists in El- Giza Chest Hospital .

This training course are about hospital and clinical pharmacy for one week and repeated for five weeks during April and may

The aim of this training to increase the pharmacist awareness about :

- Importance of clinical pharmacy
- International medication management standard

- Role of pharmacists in P&T committee
- Drug information centers
- Medication errors detection and prevention
- Antimicrobial Stewardship program
- Drug-drug Interactions
- Pharmacovigilance



**Dear our valued pharmacists:**

This section of the newsletter is yours. Now you can **share your ideas, experiences and recommendations** with your peers through our newsletter.

If you wish to publish your article in this section, please send it on the following email address:  
**[hosprix@eda.mohealth.gov.eg](mailto:hosprix@eda.mohealth.gov.eg)**

Best articles will be published with your name on the upcoming issues.

**Suggested topics includes (but not limited to):**

- News or success stories regarding clinical pharmacy implementation in your hospital.
- Case discussion illustrating clinical pharmacists' role and interventions.
- Cases of medication errors and recommendations for safe medication practices.
- Scientific publications or unpublished research results in the field of clinical pharmacy and pharmacy practice.
- Any other review article, or expert opinions related to hospital and clinical pharmacy practice in Egypt.



**“Health Professionals should be aware that some medications have different expression of strengths and therefore different doses (doses based on the Active moiety BASE and doses based on the SALT).”**



## A case of Caffeine citrate dose calculation error in premature neonate

NO HARMe received a medication error report involves a premature neonate who received incorrect loading dose of caffeine for treatment of apnea. The intended dose was 20mg/kg Caffeine Citrate, due to wrong calculation the actual dose received was 10mg/kg Caffeine Citrate (half the required dose). The error happened due to confusion between the concentrations of Caffeine Citrate VS Caffeine base.

### Discussion:

-Caffeine Citrate is a bronchial smooth muscle relaxant, a CNS stimulant, a cardiac muscle stimulant, and a diuretic. Caffeine Citrate USP is indicated for the short-term treatment of apnea of prematurity in infants between 28 and <33 weeks gestational age.

-This medication is available as Caffeine Citrate salt vial for injection in concentration of 10mg/1 ml.

-The loading dose of the drug in the treatment of apnea is 20 mg/kg Caffeine CITRATE equivalent to 10 mg/kg Caffeine BASE.

-A calculation error occurred because the prescriber used the dose of the reference dose of caffeine BASE (=10mg/kg) and applied it with the product of Caffeine CITRATE SALT.

-The indication of Caffeine in those patients is very critical and the drug itself is very risky if not taken appropriately. Fortunately in this case the administered dose lies within the acceptable therapeutic range of the drug. However, this error may reoccur elsewhere which may result in sub therapeutic dose (this can be fatal due to failure of apnea treatment) or conversely an overdose (which is also serious and includes seizures, tachypnea, vomiting, hyperglycemia and other complications)

### How to Avoid This Medication Error:

- 1-Drug information should be available during prescription to check the exact reference dose.
- 2-Prescribers should be aware that some medications may have different expression of strengths and therefore different doses (doses based on the Active moiety BASE and doses based on the SALT).
- 3-Pharmacists and nurses should double check drug dose calculation during prescribing, before dispensing and before administration.
- 4-In this kind of products, the external label as well as the drug insert should clearly mention

both concentrations of the SALT and the BASE and the corresponding doses.

5-Any similar incidents should be internally and externally reported so as other healthcare professionals can be more cautious with such products that carry a high potential for dose calculation errors.

### References:

1. Citrate C. Caffeine Citrate - FDA prescribing information, side effects and uses [Internet]. Drugs.com. 2016 [cited 12 May 2016]. ([Click Here](#))



# Hepatorenal Syndrome - Case

Embaba Hospital

## Presenting Complaint:

F.M is a 63 years old female patient, 80 kg. She was admitted to the ICU on 1/5/2016 suffering from hebetus coma.

## Diagnosis:

Hepatorenal Syndrome

## Patient History:

Having HCV.

## Medication History:

Gastrobiotic tablet<sup>®</sup>, Lactulose syrup

## Subjective:

The patient was suffered from: fatigue, malaise, or dysgeusia

## Objective:

### 1. Laboratory Investigation:

**Hb** 9 u/L, **WBCs**  $15.8 \times 10^3 \mu\text{L}$ , **RBCs** 2  $\mu\text{L}$ ,  
**Na** 138 mEq/L, **K** 4.5 mEq/L, **S. Cr** 2.5 mg/  
dL, **Urea** 120 mg/dL, **PLT** 382  $\mu\text{L}$

### 2. Physical Examination:

Vital Signs: **BP:** 98/70, **HR:** 87

### 3. Diagnosis:

Hepatorenal Syndrome

## Assessment:

Pharmaceutical related problems:

1. Hepatorenal Syndrome
2. HCV

### Problem 1: Treatment of HRS

**Etiology:** due to cirrhosis, severe alcoholic hepatitis, or (less often) metastatic tumors, but can also have fulminant hepatic failure from any cause ([Click Here](#))

### Current Therapy:

- Plasma for 6 days
- Levophed<sup>®</sup> amp. 50cm glucose 5%
- Glucose 5% 15cm /hr
- Dopamine amp. /50cm glucose 5%
- Lactulose Enema /4hrs
- Ceftriaxone<sup>®</sup> 2gm /24hrs
- Zantac amp.<sup>®</sup> / 8hrs
- Lactulose syrup 15cm/8hrs
- Albumin /12hrs
- Gastrobiotic<sup>®</sup> 2 tab./8hrs
- Vastarel<sup>®</sup> /12hrs
- Flagyl vial<sup>®</sup> /8hrs
- Captopril 25mg/8hrs

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

## Plan:

### Problem 1: Treatment of HRS:

#### Therapeutic Objective:

- Dopamine (2-5 mcg/kg/min)
- Vasopressin analogues (ornipressin, terlipressin), somatostatin analogues (octreotide), and alpha-adrenergic agonists (midodrine).
- Albumin Useful for plasma volume expansion and maintenance of cardiac output.

- Treatment of underlying cause of liver disease<sup>(1)</sup>

#### Interventions:

- Low-dose dopamine (2-5 mcg/kg/min) is frequently prescribed to patients with renal failure in the hope that its vasodilator properties may improve renal blood flow<sup>(1)</sup>

#### Monitoring Parameters:

- B.P, AST, ALT, BUN, S.cr, K

#### Clinical Pharmacist Intervention:

##### Problem 1: Treatment of HRS:

- Patient should stop captopril because she has hypotension.

#### Patient Education:

##### Patient counseling for the following:

- Patients can take a multivitamin without iron.
- A balanced, low-fat (less than 30% of total calories) diet is recommended. Patients with cirrhosis should limit sodium intake to less than 2 grams per day
- Obese patients are encouraged to lose at least 3 to 5% of their body weight.
- Stop alcohol and smoking<sup>(2)</sup>

## Quiz:

### Which drug needs dose adjustment ?

- A. Dopamine
- B. Zantac.
- C. Gastrobiotic

### 2. What preventive action to avoid esophageal varices ?

- A. Propranolol
- B. Atenolol .
- C. Carvidolol

### 3. Do you have any further recommendations?

Please, contact us at:  
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## References:

1. Hepatorenal Syndrome Treatment & Management: Approach Considerations, Medical Care, Surgical Care [Internet]. Emedicine.medscape.com. 2016 [cited 11 May 2016]. ([Click Here](#))
2. Core Concepts - Counseling Patients with Chronic Hepatitis C - Evaluation, Staging, and Monitoring of Chronic Hepatitis C - Hepatitis C Online [Internet]. HepatitisC.uw.edu. 2015 [cited 11 May 2016]. ([Click Here](#))



**“HRS is an extremely serious condition it should be treated as a medical emergency.”**



## Last Month Quiz Answers

1. C
2. C



## Egyptian Scientific Publication: **Anti inflammatory effects of statin in COPD**

*Nasef Abdelsalam Rezka, , Ahmad Elewab*

**ABSTRACT** Statins are now becoming recognized as powerful anti-inflammatory agents that exert beneficial effects beyond low-density lipoprotein cholesterol reduction .

COPD patients receiving statins obtain a benefit from these therapeutic agents. Clearly, the best medical evidence for the association of statins with improved outcomes for COPD patients.

We aimed in this study to assess anti inflammatory effects of statin in COPD patients.

### Patients and methods

We studied 28 patients with chronic obstructive lung disease. Fourteen patients (11 male and 3 female) receiving statin due to hyperlipidemia (9 patients received simvastatin and 5 patients atorvastatin), and other 14 patients (11 male and 3 female) not hyperlipidemic. All patients were subjected to Pulmonary function (spirometry) pre and at end of study. Sputum induction before and at end of 10 months from statin starting, and determination of leptin, total and differential cell count pre and at end of study.

### Results

After 10 months from statin intake we found significant decrease of TCC in statin group and also high significant decrease of sputum leptin, neutrophils, and COPD exacerbation in the same group when compared to control group. And significant decrease of TCC in statin group pre and at end of study with high significant decreases of sputum leptin, neutrophils, and COPD exacerbation of statin group pre and 10 months of statin intake. Tiotropium bromide has positive significant effects on sputum leptin in statin group.

### Conclusion

We conclude that statin may lower the exacerbation in patients with chronic obstructive lung diseases and may lower the total cell count of inflammatory cells, sputum leptin and neutrophils.

### Keywords

Statin; COPD

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



**“ Statins have anti-inflammatory and immunomodulating properties which could possibly influence inflammatory airways disease .”**





## 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](http://www.eda.mohealth.gov.eg)  
or,
- Email us at:  
[medication.errors.system@gmail.com](mailto: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**

