HOSPITAL PHARMACY ADMINISTRATION

HPA Newsletter

Volume II, Issue X April 2016

Special points of interest:

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

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HPA Latest Updates

General rules for pharmacist responsible for applying clinical pharmacy

On behalf of ministerial decree 391 for 2012 about clinical pharmacy unit and DIC unit establishment

The decree is stating collaboration between HPA and inspection department at CAPA with general pharmacy administration in all ministry of health sectors.

There are complementary roles between previously stated administrations for implementing the decree.

-There will be selection of clinical pharmacy inspector team in each sector of ministry of health based on the following qualifications:

- Clinical pharmacy practice experience
- Post graduate studies
- Passing personnel and written hospital clinical pharmacy exam

Moreover,

Under supervision of HPA team in stage of clinical pharmacy implementation in hospital and what is needed in this stage from essential tools

Eventually,

Under supervision of clinical pharmacy inspectors at CAPA in stage of clinical pharmacy follow up and what is needed in the stage of evaluation and follow up .

-There were two meetings conducted with El-Monofya at 5/4/2016 and El-Qaliobya directorate at 4/4/2016.

It is concluded from two meetings that certain points were needed to be fulfilled:

- Make sure that those pharmacists will apply clinical pharmacy practice throughout hospital specialties step wisely.
- Clinical pharmacist will be selected in each hospital based on defined scoring system that was designed by hospital pharmacy administration at CAPA.
- If there is clinical pharmacist team already existing in hospital, they should be re-evaluated through evaluation form that was designed by hospital pharmacy administration at CAPA.
- In each hospital the selection of clinical pharmacy team and DIC team will be under supervision of clinical pharmacy inspectors. The teams should be totally devoted to applying clinical pharmacy practice without performing other tasks aside from clinical pharmacy service.

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:
hosprx@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.

Ranitidine Frequently Prescribed with Wrong Frequency

"Ranitidine is indicated for treatment of duodenal ulcer, gastric ulcer, gastroesophogeal reflux disease (GERD), stress ulcer prophylaxis (SUP) in critically ill patients and other indications."

No HARMe received more than 10 valid reports involved errors in the prescribed frequency/ regimen of the H2 blocker (RANITIDINE). Those errors involved the use of Ranitidine oral (150 mg tablet) or parenteral (50 mg IV/IM ampoule) in adult patients for Stress Ulcer Prophylaxis or GERD.

The reports either described using an inappropriately low frequency in patients with normal kidney function or using an inappropriately high frequency for patients with impaired renal function who need dose adjustment.

Discussion:

- Ranitidine is an H2-blocker available in the Egyptian market in different dosage forms and concentrations (including but not limited to 150 mg oral tablets and 50 mg ampoule for IV/ IM administration).
- This drug is indicated for treatment of duodenal ulcer, gastric ulcer, gastroesophogeal reflux disease (GERD), Pathological hyper secretory conditions, stress ulcer prophylaxis (SUP) in critically ill patients and other indications.[1,2]
- **For adult patients with normal kidney function (or CrCl ≥50 mL/min): the recommended dose of Ranitidine in stress ulcer prophylaxis:** [1,2]

- IV: 50 mg amp. q 6-8 hours

- oral (nasogastric tube): 150 mg q 12 hours

- Three out of ten reports described the use of IV ranitidine in patients with normal kidney function every 12 hours instead of the recommended 6-8 hours interval. And one report involved the use of oral ranitidine every 8 hours instead of every 12 hours.
- **For adult patients with impaired renal function (CrCl < 50 ml/min) the general recommended dose of Ranitidine is:** [1,2]

- IV: 50 mg every 18 to 24 hour

- Oral: 150 mg every 24 hours

- **The ASHP recommended the following dose adjustments in case of stress ulcer prophylaxis in patients with (CrCl < 50 ml/min):** [1]

  - IV: Intermittent bolus: 50 mg every 12 to 24 hours

  - Oral: nasogastric (NG) tube: 150 mg 1 to 2 times daily

- Six out of ten reports described the use of oral or IV ranitidine in patients with impaired renal function every 8 hours instead of the recommended 12-24 hours interval.
- During reports review, it was noted that in **most of the reported errors** there was **no clear indication** for prescribing ranitidine and **no established risk factors** that requires stress ulcer prophylaxis.
- Some studies calculated that **56% - 69%** of patients received prescriptions for stress ulcer prophylaxis with no indications. **What are the evidence based indications for the use of Ranitidine and similar agents in stress ulcer prophylaxis?** Check references no. [4,5]

How to Avoid This Medication Error:

1-**Drug information** should be readily available during drug prescribing, dispensing and administration. Such information can be available through drug information centers, hospital formulary, mobile applications or any other feasible methods.

2-**Complete patient information** including (indication, patient age, results of renal function and all relevant information) should be well documented and readily available during drug prescribing, dispensing and administration.

3-During prescribing and before dispensing, **pharmacists should double check** on the ordered drug dosing and regimen and recommend any dose adjustments required.

4-There should be **clear hospital policy** for prescribing proton pump inhibitors and H2 blocker s for **stress ulcer prophylaxis** based on the well-known evidence based risk factors to ensure rational use of those medications and avoid unnecessary costs and side effects.

References:

1. Ranitidine (Lexi-Drugs) [Internet]. Online.lexi.com. (Click Here)
2. Zantac, Zantac 150 Maximum Strength (ranitidine) dosing, indications, interactions, adverse effects, and more [Internet]. Reference.medscape.com. 2016. (Click Here)
3. Ladan Mohebbi K. Stress ulcer prophylaxis in the intensive care unit. Proceedings (Baylor University Medical Center) [Internet]. 2009. (Click Here)
4. Trauma T. Stress Ulcer Prophylaxis - Practice Management Guideline [Internet]. East.org. 2016. (Click Here)

Diabetic ketoacidosis - Case

Embaba Hospital

Presenting Complaint:

E.M is a 70 years old female patient, 80 kg, She was admitted to the ICU on 5/4/2016 suffering from disturbed conscious level and hyperglycemia.

Diagnosis:

Diabetic ketoacidosis

Patient History:

Having Medical History of thyroidectomy

Medication History:

Eltroxin 50mg tablet®

Subjective:

The patient was suffered from:

Weakness, Nausea and vomiting, Rapid weight loss

Objective:

1. Laboratory Investigation:
   Hb 11 u/L**, WBCs** 11*10³ µL, , **Na** 145 mEq/L, **K** 3.1mEq/L, **S. Cr** 1 mg/dL, **Urea** 23 mg/dL, acetone in urine,, RBG 413 mg/Dl, ABG: PH 6.7, Pco2 29mmHg, HCO3 17.6mmHg
2. Physical Examination:
   Vital Signs: **BP:** 140/80**, HR:** 60
3. Diagnosis:
   Diabetic ketoacidosis

Assessment:

Pharmaceutical related problems:

1. Diabetic ketoacidosis
2. Hyperglycemia

Problem 1: Treatment of DKA:

Etiology:

The most common scenarios for diabetic ketoacidosis (DKA) are underlying or concomitant infection (40%), missed or disrupted insulin treatments (25%), (Click Here)

Current Therapy:

- Ceftriaxone® 2gm i.v/24hr
- Risk® vial/100cm normal saline/24hrs
- Aspocid® 75mg/24hrs
- 50Unit insulin /50cm normal saline in a rate of 6cm/hr
- Normal saline/ringer in a rate 100cm/hr
- Eltroxin® 50 mcg once daily

Therapy Indicated: (Click Here)

Plan:

Problem 1: Treatment of DKA:

Therapeutic Objective:

- Correction of fluid loss with intravenous fluids
- Correction of hyperglycemia with insulin
- Correction of electrolyte disturbances, particularly potassium loss
- Correction of acid-base balance
- Treatment of concurrent infection, if present.

(1)

Interventions:

- Fluid resuscitation is a critical part of treating patients with DKA
  - Administer 1-3 L during the first hour.
  - Administer 1L during the second hour.
  - Administer 1L during the following 2 hours
- The initial insulin dose is a continuous IV insulin infusion using an infusion pump, if available, at a rate of 0.1 U/kg/h.
- When blood sugar decreases to less than 180 mg/dL, isotonic sodium chloride solution is replaced with 5-10% dextrose with half isotonic sodium chloride solution. (2)

Monitoring Parameters:

- Blood glucose level, k levels, ABG, pH

Clinical Pharmacist Intervention:

Problem 1: Treatment of DKA:

- Patient should take potassium ampoule/500ml normal saline because potassium level< 3.3mEq/L

Patient Education:

Patient counseling for the following:

- Never skipping insulin doses
- Make sure that your blood sugar levels are within their normal range
- Testing your urine for ketone levels during periods of high stress or illness

Quiz:

1. **What intervention should be taken if K level is less than 3.3mEq/L?**
   A. Withdraw insulin
   B. Administer potassium infusion .
   C. A&b
2. **What intervention should be taken if PH less than 6.9 ?**
   A. Fluid resuscitation
   B. Stop insulin .
   C. Sodium bicarbonate
3. **Do you have any further recommendations?**
   Please, contact us at:
   hosprx@eda.mohealth.gov.eg

References:

1. Diabetic Ketoacidosis Treatment & Management: Approach Considerations, Correction of Fluid Loss, Insulin Therapy [Internet]. Emedicine.medscape.com. 2016 [cited 10 April 2016]. (Click Here)
2. Diabetic Ketoacidosis Treatment & Management: Approach Considerations, Correction of Fluid Loss, Insulin Therapy [Internet]. Emedicine.medscape.com. 2016 [cited 10 April 2016]. (Click Here)

Clinical Pharmacy

DIABETIC KETOACIDOSIS

"Diabetic ketoacidosis (DKA) is a serious condition that can lead to diabetic coma (passing out for a long time) or even death."

Last Month Quiz Answers

1. B

2 . C

Volume II, Issue X

Egyptian Scientific Publication:

Resveratrol Promotes Foot Ulcer Size Reduction in Type 2 Diabetes Patients, Faculty of Medicine, Alexandria University, , Egypt. Örebro University Hospital and School, Sweden

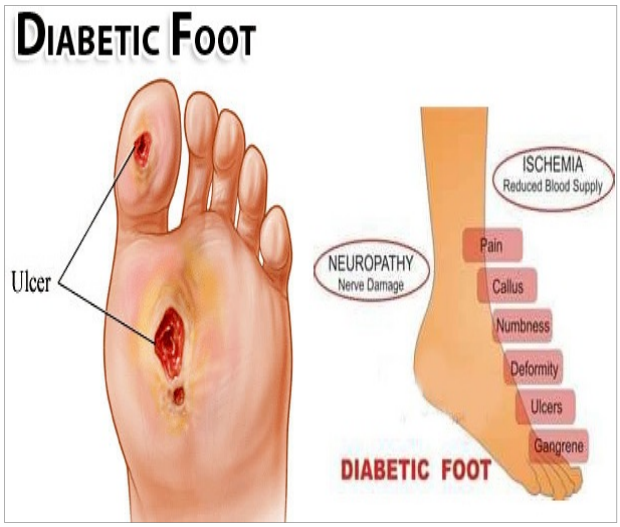
Yuriy K. Bashmakov,1 Samir H. Assaad-Khalil,2 Myriam Abou Seif,3 Ruzan Udumyan,4 Magdy Megallaa,2 Kamel H. Rohoma,2 Mohamed Zeitoun,2 and Ivan M. Petyaev1

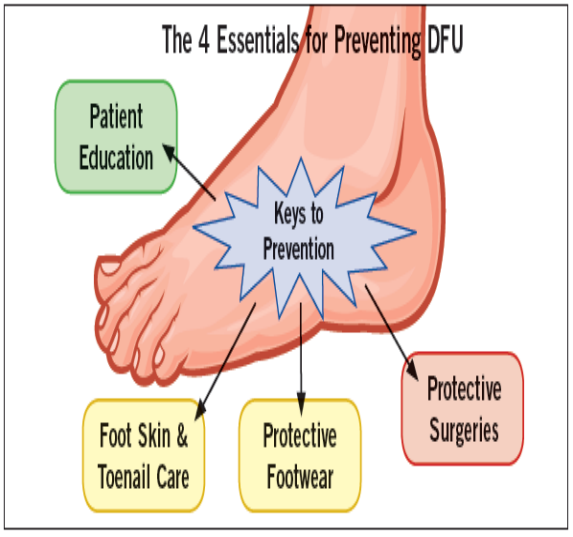
ABSTRACT Objective. The effect of a proprietary formulation of trans-resveratrol (t-RSV) on manifestations of diabetic foot syndrome (DFS) was studied in type 2 diabetic patients with newly diagnosed diabetic foot ulcers. Method. Placebo-controlled, examiner-blinded, parallel-group randomized controlled pilot clinical trial (ACTRN Clinical Trial Registry number 12610000629033) involving 24 patients with DFS (15 males and 9 females) divided into the placebo and RSV-treatment groups was performed. 50 mg of t-RSV or placebo capsules was given to each patient twice a day over a 60-day time period. Results. Reduction in the parameters reflecting diabetic ulcer size was more profound in the RSV group as compared to placebo. RSV-treated patients also had a marginally improved performance in the foot pressure test. A statistically significant decline in the plasma fibrinogen level, but not CRP, was also found in the RSV-treated patients. Some improvement in the plasma lipid profile and fasting glucose levels were not related to RSV-treatment, since they have been seen on both the RSV and placebo groups, revealing the effectiveness of medical supervision and education in the newly diagnosed patients with DFS. Conclusion. t-RSV supplementation promotes reduction of the foot ulcer size and reduces plasma fibrinogen level in type 2 diabetic patients.

To read the full article, please (Click Here)

Control your Diabetes. For Life.

" 80% of diabetes deaths are now occurring in low and middle– income countries."





HOSPITAL PHARMACY ADMINISTRATION

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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.

NO HARMe guarantees confidentiality and security of information received

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

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