



HOSPITAL  
PHARMACY  
ADMINISTRATION



### Special points of interest:

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

### Inside this issue:

- |   |   |
|---|---|
| HPA latest updates  | 1 |
| An actual medication error with IV Nitroglycerin (Tridil®) without dilution                         | 2 |
| Deep Venous Thrombosis - Case Report  | 3 |
| Psoriasis: highlights on pathogenesis, adjuvant therapy, and treatment of resistant and problematic | 4 |

# HPA Newsletter

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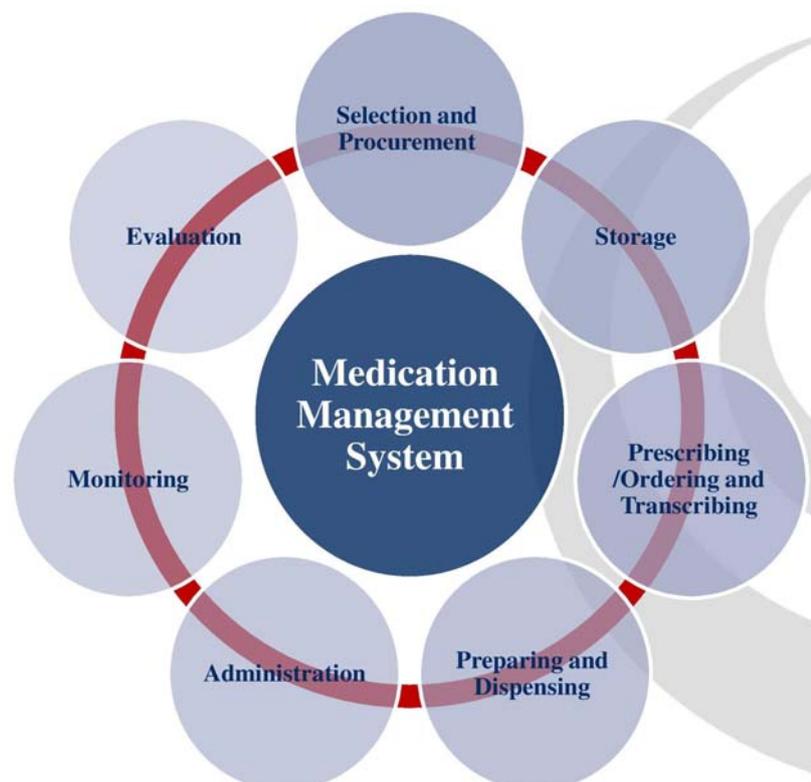
## HPA Latest Updates

Hospital pharmacy administration participated in a workshop for hospital pharmacists, was held in sharm Elshiekh.

The workshop was within a series of workshops to be held in remote governorates like Aswan, Hurghada, and Sharm Elshiekh.

The lecture was about "medication management system" which its objective was to educate the pharmacist about the importance of this role in each step of the medication management system, starting from "selection and procurement and ending to evaluation"

All pharmacists must clearly understand that pharmacists and pharmacy staff should be well recognized as integral members of the interdisciplinary healthcare team.





## An Actual Medication Error With IV Nitroglycerin (Tridil®) Without Dilution

NO HARMe received a report describing the use of 7 ml Tridil® without dilution during endovascular angioplasty for ischemic diabetic foot to a patient with blood pressure 180/120 mmHg. The elderly patient suffered from severe hypotension that required admission to the ICU.

### Discussion:

1. Nitroglycerin (or Glyceryl trinitrate) is a direct acting vasodilator available for **oral, sublingual, transdermal, rectal and Intravenous** administration. <sup>(1)</sup>
2. The **parenteral nitroglycerin (Tridil®)** is available in the Egyptian market as a **concentrated solution of 5mg/ml**. <sup>(2)</sup>
3. It is indicated for treatment or prevention of angina pectoris; acute decompensated heart failure (especially when associated with acute myocardial infarction); perioperative hypertension (especially during cardiovascular surgery); induction of intraoperative hypotension. <sup>(3)</sup>
4. The concentrated IV solution must be first diluted with **dextrose (5%) or sodium chloride (0.9%)** to yield a final concentration of **50 mcg/ml, 100 mcg/ml or 200 mcg/ml**. <sup>(1,3)</sup>
5. For treatment of Angina/coronary artery disease, it should be administered as IV infusion with a **rate of 5 mcg/minute** that can be gradually increased up to a **maximum of 400 mcg/minute**. <sup>(1,4)</sup>
6. Few references reported the use of intra-arterial nitroglycerin during endovascular operations with a bolus dose of 100 mcg. <sup>(5,6)</sup>

### How to Avoid This Medication Error: <sup>(7,8)</sup>

1. IV nitroglycerin should have **“HIGH ALERT MEDICATION”** labels on storage shelves, containers, product packages and loose ampoules.
2. **Limit the floor stock** of intravenous nitroglycerin to reduce the chance of errors. A reliable system for dispensing and delivering solutions from the pharmacy will eliminate the need for many floor stock items.
3. Prepare Intravenous nitroglycerin **only in the hospital pharmacy**. Intravenous solutions should arrive on patient care units in ready-to-use form, with no need for further manipulation by nursing staff.
4. **Premixed IV nitroglycerin** solutions should be available; this will reduce the possibility of mixing medication error. Pre-mixing will save time for pharmacy and nursing staff.
5. Only **one standard strength** of the premixed solution (**or as few as possible**) should be selected in the hospital formulary to avoid the risk of selecting the wrong strength.
6. High Alert Medications must be **double checked** before they are prepared, dispensed and administered to the patients.
7. The hospital must develop specific **guidelines** for procuring, storing, ordering, preparing, dispensing and administering high-alert medications including IV nitroglycerin).

### References:

1. Online.lexi.com. Login [Internet]. 2015 [cited 13 December 2015]. [\(Click Here\)](#)
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**“The concentrated IV solution must be first diluted with dextrose (5%) or sodium chloride.”**



## Deep Venous Thrombosis - Case Report

Ahmed Maher Teaching Hospital

### Presenting Complaint:

Mrs. M I is 33 years old, 100 kg female patient admitted to our ICU on 29/11/2015 suffering from bilateral lower limb tenderness and swelling

### Diagnosis:

DVT

### Patient History:

DVT history and pulmonary embolism one year ago

### Medication History:

warfarin for 3 months and IVC filter

### Subjective:

The patient was suffered from: bilateral lower limb tenderness and swelling

### Objective:

#### 1. Laboratory Investigation:

**Hb** 9.9u/L, **WBCs**  $10.3 \times 10^3/\mu\text{L}$ , **Platelets**  $352/\mu\text{L}$ , **PTT**: 64, **Sodium** 125 mEq/L, **Potassium** 4.5 mEq/L, **BUN** 13 mg/dl, **S. Cr** 0.65 mg/dl, **INR** : 1.4

#### 2. Physical Examination:

Vital Signs:

**BP**: 120/80, **HR** :85, **T**: 37, **RR**:12

**Chest**: harsh vesicular breathing, **lower limb**: tense calf muscle with tenderness, **heart** : S1, S2,

#### 3. U.S Abdomen:

Abdomen : lax with scar of previous cesarean section

#### 4. Diagnosis:

Extensive recurrent DVT

### Assessment:

Pharmaceutical related problems:

1. Treatment of DVT
2. pulmonary embolism

Problem I: Treatment of DVT:

**Etiology**: These may be categorized as acquired (e.g., medication, illness) or congenital (eg, anatomic variant, enzyme deficiency, mutation).

[\(Click Here\)](#)

### Current Therapy:

- 1- Heparin 8000 unit IV bolus then 5 amp heparin 5000 unit + 50 ml NS (infusion rate 5ml/hr) which changed to clexane 80 mg every 12 hrs
- 2-Warfarin 1mg every 24 hr, Alphintern tab every 8hr, Trental tab every 12 hr, Aspocid 75mg 2 tab daily
- 3-Daflon 150 mg every 8hr, Controloc 40 mg/24hr, Xarelto 20mg once daily (on discharge instead of warfarin)

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

### Plan:

**Problem I: Treatment of DVT:**

#### Therapeutic Objective:

- The primary objectives for the treatment of

(DVT) are to prevent pulmonary embolism, reduce morbidity, and minimize the risk of developing the postthrombotic syndrome (PTS).

- Heparin products used in the treatment of (DVT) include unfractionated heparin and low molecular weight heparin (LMWH) The efficacy and safety of LMWH for the initial treatment of deep venous thrombosis have been well established in several trials.
- Warfarin used for prophylaxis and treatment of venous thrombosis, PE<sup>(1)</sup>

#### Interventions:

- The dose of warfarin must be individualized and adjusted to maintain INR at 2-3<sup>(1)</sup>

#### Monitoring Parameters:

INR, PTT, Platelets

### Clinical Pharmacist Intervention:

**Problem I: Treatment of DVT:**

- Unnecessary medication (Trental, aspocid and daflon have no indication in DVT treatment)
- Initial dose of warfarin is 5-10mg for 2 days in healthy individuals (Inappropriate dose of warfarin 1mg)

### Patient Education:

**Patient counseling for the following:**

- Avoid letting the pressure stockings become very tight or wrinkled.
- Do not cross your legs when you sit.
- Prop up your legs on a stool or chair if your legs swell when you sit<sup>(2)</sup>

### Quiz:

#### 1. When to initiate xalerto after warfarin administration?

- A. INR < 4
- B. INR < 1
- C. INR < 3

#### 2. What is the suspected adverse event from heparin administration ?

- A. Kidney failure
- B. HIT
- C. Liver problem

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

Please, contact us at:

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### References:

1. Emedicine.medscape.com. Deep Venous Thrombosis Medication: Anticoagulants, Low Molecular Weight Heparins, Vitamin K Antagonists, Thrombolytics [Internet]. 2015 [cited 14 December 2015]. [\(Click Here\)](#)
2. Updated by: Todd Gersten a. Deep vein thrombosis - discharge: MedlinePlus Medical Encyclopedia [Internet]. Nlm.nih.gov. 2015 [cited 14 December 2015]. [\(Click Here\)](#)



**“DVT is the presence of coagulated blood, a thrombus, in one of the deep venous conduits that return blood to the heart.”**



### Last Month Quiz Answers

1. B
2. B

## Egyptian Scientific Publication:

### **Psoriasis: Highlights on pathogenesis, adjuvant therapy, and treatment of resistant and problematic cases (II)**

*El-Darouti, Mohammad; Abdel Hay, Rania M.*

**ABSTRACT** Psoriasis is a common inflammatory disease of the skin and joints. Its etiology has been linked to complex interactions between predisposing genes and the environment. The pathophysiology of psoriasis is characterized by epidermal hyperproliferation, enhanced antigen presentation, T-helper1 cytokine production, T-cell expansion, and angiogenesis. Tremendous advances in our understanding of this disorder have led to the development of novel therapeutics. In this review, we focus on specific advances in our understanding of the pathogenesis and the unrecognized severe effects of psoriasis, and the systemic treatment of resistant and problematic cases that are of major clinical relevance to the clinician.

**Conclusion:** Psoriasis is closely associated with atherosclerotic heart disease. Aspirin, simvastatin, and omega-3 should be always given to patients with psoriasis who are above 40 years and have extensive psoriasis.

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



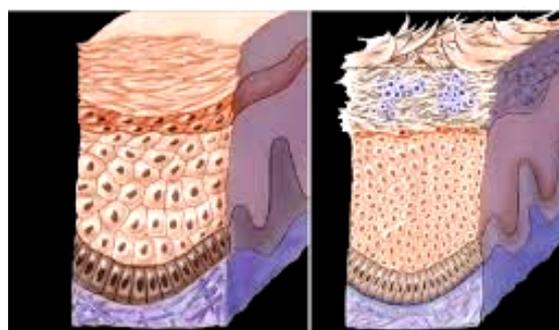
## Psoriasis



*“Management of psoriasis may involve drugs, light therapy, stress reduction, climatotherapy, and various adjuncts such as sunshine, moisturizers, and salicylic acid.”*



Difference Between normal Skin  
Psoriasis Skin



*Psoriasis doesn't  
have to limit your  
potential.*



## 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**

