



THE AGA KHAN UNIVERSITY

eCommons@AKU

---

Pharmacy Newsletter

Publications

---

9-2017

## Pharmacy Newsletter : September 2017

Pharmacy Department  
*Aga Khan University Hospital*

Follow this and additional works at: [http://ecommons.aku.edu/pharmacy\\_newsletter](http://ecommons.aku.edu/pharmacy_newsletter)

 Part of the [Pharmacy and Pharmaceutical Sciences Commons](#)

---

### Recommended Citation

Pharmacy Department, "Pharmacy Newsletter : September 2017" (2017). *Pharmacy Newsletter*. Book 1.  
[http://ecommons.aku.edu/pharmacy\\_newsletter/1](http://ecommons.aku.edu/pharmacy_newsletter/1)

# PHARMACY

September, 2017 Vol. 27, Issue 02

NEWSLETTER

*Newsletter advisory committee/members of Pharmacy & Therapeutic Committee*

**Editor-in-Chief**

Dr Bushra Jamil,  
Chairperson P & TC

**Editor**

Dr Syed Shamim Raza  
*Service Line Chief, Pharmacy Services*

**Editorial Staff**

Saharish Nazar, *Assistant Manager Quality Assurance - Pharmacy*

Dr Kashif Hussain, *Specialist, Infectious Disease Pharmacist*

Dr Ale Zehra, *Clinical Pharmacist*

Dr Hafsa M Ashfaq, *Clinical Pharmacist*

Dr Shayan Ahmed, *Pharmacist*

**Published by**

Drug & Poison Information Centre  
Pharmacy Services  
Aga Khan University Hospital Stadium  
Road, P.O. box 3500, Karachi 74800,  
Pakistan

Pharmacy Newsletter provides information regarding the decisions of P & TC, current concepts in drug therapy, warnings and cautions issued by various regulatory agencies, drug interactions, ADRs and matters related to drug usage.

Opinions expressed are of authors and does not necessarily represent AKUH's view/recommendations.

Publication of this newsletter has been through an endowment grant from Pharmacist group of Ontario, Canada

**Drug & Poison Information Centre,**  
Tel: +92 21 34861504, 1506, 1477, 1479  
Email: drug.information@aku.edu  
hospital.aku.edu/Karachi/pharmacy

**Inside this Issue:**

Drug - Drug Interaction-A case Report...Page 1

Survey on Knowledge and Awareness of Pharmacists about Venous.....Page 2

Pregnancy Risk & Lactation Safety of Antiretroviral (HIV).....Page 3

Dengue Vaccine - Hope for Future.....Page 4

## Drug - Drug Interaction-A case Report

*Dr Mahreen Muzzamil, Pharmacist*

60 year old female presented to ER with complain of head and neck pain which subsided after naproxen 500mg BID. The hypertension was managed by nitroglycerine infusion. During rounds next day it was identified that 3 doses of amlodipine 5mg and 2 doses of losartan 50mg was not enough to decrease the blood pressure. A third agent, bisoprolol was added without any significant result. The clinical pharmacist pointed out an interaction that naproxen and ACE inhibitors/Angiotensin receptor blockers cause an increase in blood pressure. Naproxen was discontinued and hypertension was controlled with amlodipine 5mg BID and losartan 50mg QD

Naproxen is an NSAIDs. It may decrease the antihypertensive (probable mechanism: additive effects on renal function; decreased renal prostaglandin production) and natriuretic effect of ACE inhibitors or angiotensin receptor blockers (ARBs). When concomitant use is required, monitor for antihypertensive efficacy and assess renal function periodically for signs of renal deterioration or failure especially in patients who are elderly, volume-depleted, or with preexisting renal dysfunction.

**References:**

- *FDA Center for Drug Evaluation Research. FDA draft guidance for industry: drug interaction studies—study design, data analysis, implications for dosing, and labeling recommendations. 2012.*
- *Kurata C, Uehara A, Sugi T et al: Syncope caused by nonsteroidal anti-inflammatory drugs and angiotensin-converting enzyme inhibitors. Jpn Circ J 1999; 63:1002-1003.*

---

## Differential Diagnosis of Increased Cardiac Troponin Levels

*Dr Kashif Hussain, Infectious disease, Specialist*

Cardiac troponin (cTn) testing is an essential component of the diagnostic workup and management of acute coronary syndromes (ACS). Although over the past 15 years the diagnostic performance of the previous gold-standard assay, creatine kinase-MB, has not changed appreciably, the ever-increasing sensitivity of cTn assays has had a dramatic impact on the use of cTn testing to diagnose ACS.

### Causes of elevated Plasma Cardiac Troponin Other Than Acute Coronary Syndromes.

| Cardiac Causes                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                              | Non-cardiac Causes                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Cardiac contusion resulting from trauma</li> <li>• Cardiac surgery</li> <li>• Cardio-version</li> <li>• Endomyocardial biopsy</li> <li>• Acute and chronic heart failure</li> <li>• Aortic dissection</li> <li>• Myocarditis or endocarditis / pericarditis</li> </ul> | <ul style="list-style-type: none"> <li>• Aortic valve disease</li> <li>• Hypertrophic cardiomyopathy</li> <li>• Tachyarrhythmia</li> <li>• Brady-arrhythmia, heart block</li> <li>• Apical ballooning syndrome</li> <li>• Post-percutaneous coronary intervention</li> <li>• Rhabdomyolysis with myocyte necrosis</li> </ul> | <ul style="list-style-type: none"> <li>• Pulmonary embolism</li> <li>• Severe pulmonary hypertension</li> <li>• Renal failure</li> <li>• Stroke, subarachnoid hemorrhage</li> <li>• Infiltrative diseases, e.g., amyloidosis</li> <li>• Cardio-toxic drugs</li> <li>• Critical illness</li> <li>• Sepsis</li> <li>• Extensive burns</li> <li>• Extreme exertion</li> </ul> |

#### References:

- Melanson SEF, Morrow DA, Jarolim P Earlier detection of myocardial injury in a preliminary evaluation using a new troponin I assay with improved sensitivity. *Am J Clin Pathol.* 2007;128:282–286.
- Jaffe AS, Babuin L, Apple FS Biomarkers in acute cardiac disease: the present and the future. *J Am Coll Cardiol.* 2006; 48:1–11.

## Survey on Knowledge and Awareness of Pharmacists about Venous Thromboembolism and Anticoagulation in Pakistan

Sumaira Khan, Specialist

Venous thromboembolism (VTE) is considered to be the most common preventable cause of hospital-related deaths. Hospitalized patients undergoing major surgeries and those with acute medical illness are at an increased risk of VTE. Since management of VTE is multidisciplinary, it is critical that pharmacists should have adequate understanding of the anticoagulation. Studies reported 60% of VTE cases occur during or following hospitalization. VTE is negated agenda in the region which requires awareness among not only pharmacist but Physicians and nurses as well. Purpose of this cross sectional study the was to investigate pharmacists' awareness and knowledge of VTE, and perioperative management of anti-coagulated patients in a hospital.

All pharmacists agreed that VTE prophylaxis is clinically important, , 75% pharmacists were aware of institutional policy for thromboprophylaxis, 95% agreed that their institute should have peri-operative guidelines available for safe care, 100% agreed that pharmacists can play important role in VTE guideline development in their institutes, only 33% pharmacists were aware of perioperative management of heparin, only 52% were aware of appropriate use of DVT prophylaxis in hospitalized patients, 53.66% knew that patients can develop DVT after discharge, only 34.15% aware of VTE occurrence within 90 days of hospitalization in majority of hospitalized patients.

Pharmacists can also play a key role in helping hospitals achieve performance measures by aiding in the development and implementation of local VTE guidelines, policies, and other quality improvement initiatives providing valuable education for other health care professionals like doctors, Nurses and patients alike.

#### Reference:

- Dobesh PP, Trujillo TC, Finks SW. Role of the pharmacist in achieving performance measures to improve the prevention and treatment of venous thromboembolism. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy.* 2013 Jun 1;33(6):650-64.

## Pregnancy Risk & Lactation Safety of Antiretroviral (HIV)

Dr Shayan Ahmed, Pharmacist

The U.S. Food and Drug Administration (FDA) categorizes pregnancy risk in 5 categories:

- **A** = Adequate studies in pregnant women, no risk
- **B** = Animal reproduction studies, no fetal risk; no controlled studies in pregnant women
- **C** = Animal reproduction studies have shown fetal adverse effect; no controlled studies in humans; potential benefit may warrant use despite potential risk
- **D** = Evidence of human fetal risk; potential benefit may warrant use despite potential risk
- **X** = Animal and human studies demonstrate fetal abnormalities; risks in pregnant women clearly exceed potential benefits

| Antiretroviral (HIV) Drugs        |                         |                                                                                                                                                                                                                                                  |
|-----------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drug                              | Pregnancy Risk Category | Lactation Status                                                                                                                                                                                                                                 |
| <b>Abacavir*</b>                  | C                       | Due to the risk of postnatal transmission of HIV, the Centers for Disease Control and Prevention does not recommend breastfeeding for HIV-infected mothers, including those who are receiving combination antiretroviral therapy or prophylaxis. |
| Atazanavir                        | B                       |                                                                                                                                                                                                                                                  |
| Darunavir                         | C                       |                                                                                                                                                                                                                                                  |
| Delavirdine                       | C                       |                                                                                                                                                                                                                                                  |
| Didanosine                        | B                       |                                                                                                                                                                                                                                                  |
| Dolutegravir                      | B                       |                                                                                                                                                                                                                                                  |
| <b>Efavirenz*</b>                 | D                       |                                                                                                                                                                                                                                                  |
| Elvitegravir                      | B                       |                                                                                                                                                                                                                                                  |
| Emtricitabine                     | B                       |                                                                                                                                                                                                                                                  |
| Enfuvirtide                       | B                       |                                                                                                                                                                                                                                                  |
| Etravirine                        | B                       |                                                                                                                                                                                                                                                  |
| Fosamprenavir                     | C                       |                                                                                                                                                                                                                                                  |
| Indinavir                         | C                       |                                                                                                                                                                                                                                                  |
| <b>Lamivudine*</b>                | C                       |                                                                                                                                                                                                                                                  |
| <b>Lopinavir*</b>                 | C                       |                                                                                                                                                                                                                                                  |
| Maraviroch                        | B                       |                                                                                                                                                                                                                                                  |
| Nelfinavir                        | B                       |                                                                                                                                                                                                                                                  |
| <b>Nevirapine*</b>                | B                       |                                                                                                                                                                                                                                                  |
| <b>Raltegravir*</b>               | C                       |                                                                                                                                                                                                                                                  |
| Rilpivirine                       | B                       |                                                                                                                                                                                                                                                  |
| <b>Ritonavir*</b>                 | B                       |                                                                                                                                                                                                                                                  |
| Saquinavir                        | B                       |                                                                                                                                                                                                                                                  |
| <b>Tenofovir disproxil (TDF)*</b> | B                       |                                                                                                                                                                                                                                                  |
| Tipranavir                        | C                       |                                                                                                                                                                                                                                                  |
| Zalcitabine                       | C                       |                                                                                                                                                                                                                                                  |
| <b>Zidovudine*</b>                | C                       |                                                                                                                                                                                                                                                  |

\*Drugs are the part of AKUH Formulary supported by National AIDs Control Program (NACP).

Reference:

[www.uptodate.com](http://www.uptodate.com)

## Polypill Drug Concept - Primary Prevention of Cardiovascular Disease

Dr Ale Zehra, Clinical Pharmacist

Non-communicable disease (NCDs) contribute globally two-thirds of all deaths. Cardiovascular diseases (CVD), Cancer, Diabetes and Chronic Lung Diseases are the 04 main NCDs. The concept of Polypill (multiple active pharmaceutical ingredients in tablet or capsule) or Polycap has gained broader acceptance now a day by the vision of clutch of research groups in the context of secondary prevention from CVD of NCDs. In 2003, Professor Nicholas Wald & Malcolm Law provided evidence for the potential efficacy of poly pill to prevent it from CVD by more than 80% to all adults over 55 and to adults of any age with one CVD risk factors by comprising a low-dose aspirin, folic acid, a potent statin with standard dose (eg, atorvastatin or simvastatin), and three BP-lowering drugs at half the standard dose (among thiazide diuretics,  $\beta$ -blockers, ACE inhibitors, ARBs, and calcium channel). Several study trial have been conducted but uptil now The Indian Polycap Study (TIPS) over 2000 subjects without cardiovascular disease, is the only published & first completed trial of (03 years period) Polypill, started in 2009 that tests primarily the feasibility and pharmacological effects of various polypill preparations to assess the efficacy and safety in a formulation of 3 common antihypertensive drugs (thiazide (12.5 mg), atenolol (50 mg), ramipril (5 mg) along with aspirin(100mg) and a statin (20mg) per day combined in Polycap. It's a timely need in Pakistan too to take an advantage of concept of poly pill & must conduct a study due to higher death rate by CVD.

### Reference:

- *Non communicable diseases –country profile,2011 Available at: [www.who.int/nmh/publications/ncd\\_profiles\\_report.pdf](http://www.who.int/nmh/publications/ncd_profiles_report.pdf)*
- *The Indian Polycap Study (TIPS); Effects of a polypill (Polycap) on risk factors in middle-aged individuals without cardiovascular disease (TIPS): a phase II, double-blind, randomised trial; The Lancet; Volume 373, Issue 9672, 18–24 April 2009, Pages 1341–1351..*

## Dengue Vaccine - Hope for Future

Dr Azeem Iftikhar, Pharmacist

Dengue is one of the endemic infection in Pakistan and most prevalent after monsoon season. WHO recommends that countries should consider introduction of the dengue vaccine CYD-TDV only in geographic settings (national or subnational) where epidemiological data indicate a high burden of disease. The first dengue vaccine, Dengvaxia (CYD-TDV) by one of the pharmaceutical manufacturer, was first registered in Mexico in December, 2015. CYD-TDV is a live recombinant tetravalent dengue vaccine that has been evaluated as a 3-dose series on a 0, 6 and 12 month schedule in Phase III clinical studies. It has been registered for use in individuals of 09 - 45 years of age living in endemic areas. The safety profile was considered good, and there was no indication of more severe dengue disease in breakthrough cases in vaccine recipients that occurred over the 25 months of active case surveillance. Post marketing surveillance reports shows it to be effective for young school going children's and adults. Its side effects and precautions are similar to that of other live vaccines. Let's hope to prevent the dengue infections by vaccination and adapting preventive measures.

### References:

- *Dengue virus infection prevention and treatment; Available at: [www.uptodate.com](http://www.uptodate.com)*
- *Dengue vaccine: WHO position paper – July 2016. Weekly epidemiological record 2016; 91(30): 349–64.*

### Provide us your Valuable Feedback!

To keep the Pharmacy Newsletter of Aga Khan University Hospital (AKUH) updated we would like to take your valuable feedback. We are grateful to you for sparing few minutes of your precious time to complete form by below online link or form can be emailed to you as well. Just drop us an email with subject **Newsletter Feedback**. Email us at: [drug.information@aku.edu](mailto:drug.information@aku.edu)

Thank you in advance for your feedback!

### Link:

<https://goo.gl/forms/Ghh1Nc2KY2jEkiUL2>



آغا خان یونیورسٹی ہسپتال، کراچی

The Aga Khan University Hospital, Karachi

