



# PHARMACY BULLETIN

Shifa International Hospitals Ltd.

شفا انٹرنیشنل ہسپتال لمیٹڈ

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## Use of ACE Inhibitors may Increase Risk of Lung Cancer.

Abid Jamil, Principal Pharmacist

The use of angiotensin-converting enzyme (ACE) inhibitors to lower blood pressure was associated with an overall increased risk for lung cancer of 14% compared to hypertension therapy with angiotensin receptor blockers (ARBs), a large, population-based cohort study shows.

An analysis of primary care records of almost one million patients in the United Kingdom showed that as treatment with ACE inhibitors continued, the risk for lung cancer increased. For patients who took ACE inhibitors for 5 years, the risk for lung cancer increased by 22% compared to those who took ARBs. The increased risk for lung cancer peaked at 31% for patients who took ACE inhibitors for 10 years or longer.

Secondary analyses showed that the use of ACE inhibitors for less than 5 years was not associated with an increased risk for lung cancer.

Source: *BMJ*, 24 Oct 2018

## DOACs in management of HIT

*Fatima Ashfaq Butt, Clinical Pharmacist Infectious Disease*  
Heparin-induced thrombocytopenia (HIT) is a life-threatening condition that can occur in patients exposed to unfractionated or low molecular weight heparin, regardless of the dose, schedule, or route of administration.

Patients with HIT require anticoagulation with a non-heparin agent. Accumulating evidence from observational studies suggests that direct oral anticoagulants (DOACs; eg, dabigatran, apixaban, edoxaban, rivaroxaban) reduce thrombosis risk in HIT without stimulating HIT antibodies .

"Uptodate" now consider these agents among the options for individuals with HIT, either in the acute setting or if anticoagulation is needed in the future. The choice among these and other anticoagulants takes into account a number of factors including the urgency of anticoagulation, possible need for urgent reversal, and renal and hepatic function.  
Source: Uptodate, Topic 1369 Version 56.0



Pharmacy team at 1st National Scientific Congress, Medication Safety Workshop, held on 15-16 December 2018 at Pak China Friendship Centre Islamabad.

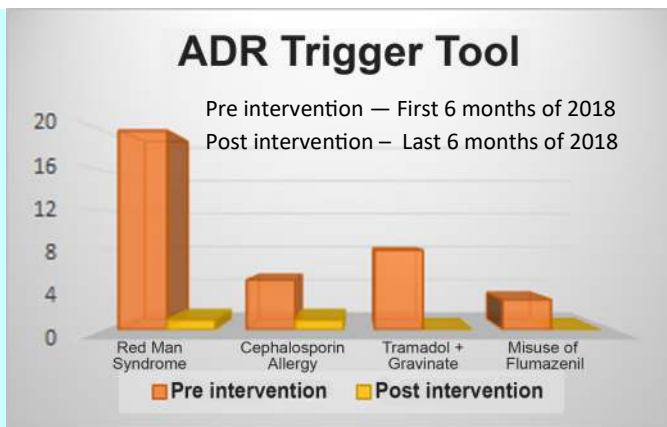
## Inside this issue

- ⇒ ACE Inhibitors linked to increased lung Cancer
- ⇒ Be aware it's a season of Pollen Allergy!
- ⇒ Colistin monotherapy - less mortality?!
- ⇒ Frequently asked question, Colistin to Colistimethate Conversion
- ⇒ Drug safety Alert, Valporate containing drugs

## ADR Under-reporting? Use Trigger Tool!

Burhan Saeed Clinical Pharmacist Paediatrics

Trigger tool is one of the active data collection process in which trigger drugs (E.g. Stat Antihistamine, Stat Hydrocortisone dose) are followed in order to identify an ADR. Pharmacy ADR trigger tool helped a lot in detecting the ADRs that would normally go unreported via voluntary reporting. Certain ADRs reduced significantly after detection and trend analysis, like rashes with Tramadol when used with Gravinate in same syringe and Redman's syndrome caused by fast infusion of Vancomycin.



## Frequently Asked Question

(Rehan Anjum, Clinical Pharmacist ICU)

### How many mg of Colistin are present in Colistimethate sodium injection?

**Colistin**, also known as **polymyxin E**, is an antibiotic produced by certain strains of the bacteria *Paenibacillus polymyxa*. Colistin is a mixture of the cyclic polypeptides colistin A and B and belongs to the class of polypeptide antibiotics known as polymyxins. The polymyxins (colistin and polymyxin B [PMB]) are old antibiotics that are a key part of the therapeutic armamentarium against multidrug-resistant Gram-negative pathogens. Colistin and PMB have very similar chemical structures and antibacterial activity *in vitro*. Whereas PMB is administered to patients in its active form, **colistin is used in the form of its inactive prodrug colistimethate (CMS), and conversion to colistin is required *in vivo*.**

Colistin has two units that is MIU (Million international units) and mg (milligrams). The European medicine agency use units as MIU while American units are mg. So there is a lot of confusion in prescribing and dispensing of colistimethate sodium.

Units of CMS	Mg of CMS	Colistin Base Activity
1 MIU	80 mg	33.33 mg
One injection of Colistimethate sodium in SIH:		
3 MIU	240 mg	100 mg
12,500 Units	2.4 mg	1 mg colistin

### Important:

Colistin is a restricted antibiotic, as it's a "Last" resort against multi-drug resistant organisms esp. resistant to Carbapenems.

- \* Always send cultures 'before' starting therapy
- \* Narrow down/de-escalate as per culture reports
- \* Use optimal dose for min. possible time period
- \* Treat the patient—Not the lab! (beware of colonization)
- \* Adjust dose if creatinine is deranged.

### Patient has a right:

- ⇒ To be listened carefully
- ⇒ To be treated with respect and care
- ⇒ To be guided in best possible way!



Pharmacist Fatima Ashfaq Butt is now a **Certified Infectious Diseases (ID) Pharmacist** from **Society of Infectious Disease Pharmacists - SIDP (USA)**.



This certification is another milestone achieved towards specialty based pharmacy practice; and it will definitely help improving Antimicrobial Stewardship in the hospital which is certainly the need of the day.

## A case report: HCL in Severe Metabolic Acidosis

(Sajjad Ullah Clinical Pharmacist MICU)

A 67 year-old man who was presented in Shifa with SOB, cough and fever in ER and later admitted to MICU, was found to have a Pneumonia and Bronchiectasis, and later he develop severe metabolic alkalosis, with a PaCO<sub>2</sub> of 55.1 mm Hg, PaO<sub>2</sub> of 264.4mmHg, pH of 7.562, and plasma bicarbonate concentration of 47.0 mMol/l. He was treated with Acetazolamide, intravenous hypertonic saline 3%, but did not improve in next 48 hours. Though patient had renal insufficiency, but did not meet the criteria of dialysis. It was decided by ICU team and consultant that intravenous infusion of Hydrochloric Acid (HCL) could be a good choice to treat this patient.

HCL infusion for metabolic alkalosis thus prepared by passing 100 mL of 1 normal (1 N) HCL through a 22 micron filter into 900 mL of isotonic saline, or sterile water, to produce a 0.1 N (100 mEq/L) solution of HCL. This solution was then infused through a central venous catheter into the superior vena cava over 8 to 24 hours. It should be taken into care that HCL may react with plastic bag, so we used a glass container for a 24 hours infusion, and intravenous tubing should be changed every 12 hours<sup>1</sup>. Caution is required because infiltration of this solution will necrose tissues, and this complication can be fatal.

The patient responded very well after 3 to 4 hours with 150ml of HCL infusion and rest of the infusion was stopped. Patients' ABGs also improved and patient got stable hemodynamically.

Source: Javaheri S, Nardell EA. Severe metabolic alkalosis: a case report. *Br Med J (Clin Res Ed)*. 1981;283(6298):1016-7.

## It's the season of Pollen Allergy.... Be Alert!

Pollen grains are tiny particles which are released from trees, weeds, and grasses. Pollen grains function is to fertilize other parts of plants, but many never reach their targets and remain suspended in atmosphere. The suspended pollen grains in the air reach the human respiratory track through inhalation, triggering a type of seasonal allergy called pollen allergy. Most species of pollen have some level of allergenicity but not all of them. Many allergens can be avoided to a great extent. But it is hard to evade from windborne pollen when the pollen count is high. Extremely high concentration of pollen is observed in spring (March-April) and relatively less high pollen concentration in monsoon season. Islamabad is among the cities with the highest pollen counts in the world. Peak Pollen season in Islamabad starts from first week of March and ends in April.

(Muhammad Gulzaib  
Ambulatory Care Pharmacist)

### SYMPTOMS

1. Sneezing accompanied by a runny or clogged nose
2. Itching eyes, nose, and throat
3. Watering of eyes
4. Difficulty in breathing
5. Conjunctivitis
6. Some people with pollen allergy may develop asthma



### AVOID

1. Dust
2. Insect sprays
3. Tobacco smoke
4. Fresh tar or paint
5. Use of perfumes
6. Walking in garden
7. Using carpets on the floor
8. Pets in the bedroom



### To Do

- Wear a face mask
- Keep windows and door closed
- Keeping the window of car close while travelling
- Visit your physician as soon as you find any symptoms

### Anti-Allergics available at Shifa International Hospital Islamabad

Cetirizine	Zyrtec, Rigix	Triamcinolone	Nasacort AQ spray
Fexofenadine +/- Pseudoeph.	Fexet, Telfast	Montelukast	Singulair, Myteka, Freehale
Lorattidine	Lorin, Softin	Desloratidine	Destidine
Ebastine	Kestine		

## Statins, The Highs and the Lows, The YESs and The Nos

Sana Fatima Staff Pharmacist

	Atorvastatin	Rosuvastatin	Fluvastatin	Lovastatin	Simvastatin	Pravastatin
<b>Origin</b>	Synthetic	Synthetic	Synthetic	Fungi	Fungi	Fungi
<b>Chemistry*</b>	lipophilic	Hydrophilic	Both	lipophilic	Lipophilic	Hydrophilic
<b>With Food Absorption</b>	Decrease	No effect	Decrease	Increase	No effect	Decrease
<b>Protein binding</b>	Extensively protein bound >90 %					50% bound
<b>Active form</b>	active hydroxy acid	active hydroxy acid	active hydroxy acid	prodrug , must be hydrolyzed	prodrug , must be hydrolyzed	active hydroxy acid
<b>First-pass metabolism</b>	All statins are subject to extensive first-pass metabolism with the exception of pravastatin					No first pass metabolism
<b>Metabolism</b>	metabolized by the 3A4 isoform	No extensive CYP450 metabolism	Metabolized by 2C9	metabolized by the 3A4 isoform	metabolized by the 3A4 isoform	No extensive CYP450 metabolism
<b>Excretion</b>	Bile	Feces	Feces	Bile	Feces	Feces
<b>Renal Dose Adjustment</b>	No Dose Adjustment	In severe Renal impairment	No Dose Adjustment	In severe Renal impairment	In severe Renal impairment	In Moderate to severe Renal impairment
<b>Potency</b>	Most Potent	Most Potent	Mild	Moderate	Moderate	Mild
<b>Administration time</b>	Long Half Life Any time of day			Short Half life In the evening when synthesis of endogenous cholesterol occurs		
<b>Pregnancy</b>	X	X	X	X	X	X

Source: Medscape Education, Which statin is right for my patient, Darrel Huliz

# Valproate Containing Drugs Safety Alert in Pregnancy

(Hafsa Khalid Resident Pharmacist)

Unborn babies exposed to valproate preparations in utero are at heightened risk of developing neurodevelopmental problems and congenital malformations. The European Medicine agency (EMA) and the Medicines and healthcare products regulatory agency have set forth fresh guidance to reduce the in utero valproate preparations.

## Valproate preparations must not be used during pregnancy.

- In girls and women of childbearing age, valproate preparations must not be used until the patient meets pregnancy prevention program.
- Effective contraception must continue without interruption during the entire period of treatment with valproate.
- All healthcare professionals who prescribe or dispense medicine containing valproate are required to ensure that all women of childbearing age are identified and counseled systematically regarding the use of valproate containing medicine.

## WITHDRAWAL OF VALPROATE CONTAINING MEDICINE

Indication	Alternatives
Manic episodes	Haloperidol, Olanzapine. Quetiapine, Lithium as a monotherapy
Unipolar Depressive Episodes	Lithium, Quetiapine, Aripiprazole
Bipolar Depressive Episodes	Quetiapine, Olanzapine, Olanzapine+ Fluoxetine, Lamotrigine
Prophylaxis of Manic and Depressive Episodes	Lithium
Schizophrenia	Augmentation of Clozapine with Fluoxetine or Aripiprazole
Anxiety Disorders	SSRI'S , SNRI'S
Epilepsy	Lamotrigine, Carbamazepine, Levetiracetam

**No anti-epileptic drug has proven safe during pregnancy. Treatment should be individualized for all patients.**

IN NON-PREGNANT WOMEN	IN PREGNANT WOMEN
<b>PATIENTS WHO ARE CURRENTLY WELL</b>	
Dose should be tapered off gradually over at least 4 weeks	Should be refer urgently to specialist review and cont. taking med. Until seen by this service
<b>PATIENTS WHO ARE CURRENTLY NOT WELL</b>	
Much faster cross tapering while introducing the alternatives	Should be managed with urgent referral to specialist

Women experiencing a relapse in pregnancy and develop manic episodes in pregnancy can be treated with anti-manic drugs (haloperidol, Quetiapine, Olanzapine) wit augmentation of benzodiazepines anxiolytics if needed.

**Source: MHRA Safety update, December 2018**



Formulary updates		
Brand	Generic	Class
Metoxone	Metalozone	Diuretic
Trulicity	Dulaglutide	GLP 1 Agonist
Cosentyx	Secukinumab	monoclonal antibody
Uniphos	Cyclophosphomide	Alkylating agent
Carmustine	Carmustine	Alkylating agent
Viktana	Sofosvobir + Velpatasvir	Antiviral



## Looking for Your Valuable Feedback

We want to bring to you valuable, updated and interesting information via Pharmacy Newsletter, so please spare some time to provide your valuable feedback in the form of comments or suggestions. Its your newsletter and with your help we'll make it better!

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