



PHARMACY BULLETIN

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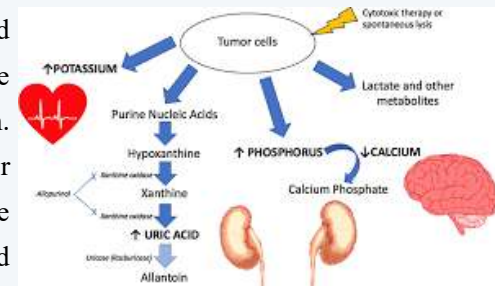
and much more....

Clarifying the role of Rasburicase in tumor lysis syndrome

Bushra Anjum Principal Oncology Pharmacist

Tumor lysis syndrome (TLS) is a complication of malignancies with high tumor cell proliferation, tumor burden, and chemo-sensitivity. It manifests with the release of intracellular components and results in hyperkalemia, hyperphosphatemia, hypocalcemia, and hyperuricemia. These biochemical abnormalities may lead to serious complications such as renal failure, cardiac dysrhythmias, and death. Rasburicase, a recombinant urate oxidase enzyme, is a new agent indicated in the treatment or prophylaxis of hyperuricemia in pediatric patients with cancer who are at high risk for TLS.

However, randomized controlled trials are required to establish the comparative efficacy of rasburicase with Allopurinol in the adult population. Preliminary evidence suggests that single-dose or reduced-dose rasburicase may be effective in the prophylaxis and the treatment of hyperuricemia and TLS. *Reference: Prevention and treatment of tumor lysis*



syndrome, and the efficacy and role of rasburicase Nael Alakel-Jan Middeke-Johannes - OncoTargets and Therapy

Gastrointestinal toxicity associated with Sodium Polystyrene Sulfonate

Sana Akhter Inpatient Pharmacist

Sodium polystyrene sulfonate (SPS) is an ion exchange resin that exchanges is prescribed for treatment of patients with hyperkalemia, it has been implicated in GI injuries, intestinal ischemia or thrombosis, although the absolute incidence was low. Despite only modest efficacy and reported cases of catastrophic intestinal necrosis and perforation associated with its use, sodium polystyrene sulfonate is widely used for treatment of hyperkalemia in patients with kidney disease. In two large observational studies including more than 50,000 individuals, the use of SPS was associated with an increased risk (twofold) of serious GI toxicity, including ulceration and perforation.

Minimizing use in older patients seems prudent whenever possible. In addition, judicious use of K⁺ sparing drugs and dietary restriction of potassium in high-risk patients can lower risk for severe hyperkalemia, and also the need to use SPS. These SPS should not be used to treat hyperkalemia, except in rare circumstances in which other options have failed or are unavailable. *Reference: Hans-Christoph Diener. Stroke - Medscape - Nov 01, 2019.*



DO YOU KNOW K+ BANK?

Drugs Causing Hyperkalemia

- K** K-Sparing Diuretics (Spironolactone)
- B** Beta Blocker e.g. Propranolol
- A** ACE inhibitors e.g. Captopril
- N** NSAIDs e.g. Aspirin
- K** K+ supplements (e.g. KCl)



COVID-19 (CORONA VIRUS)

Irfan Khan , Inpatient Staff Pharmacist

What is a coronavirus?

Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19.



What is COVID-19? COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019.

Is COVID-19 the same as SARS? No. The virus that causes COVID-19 and SARS are different. SARS is more deadly but much less infectious than COVID-19. There have been no outbreaks of SARS anywhere in the world since 2003.

What are the symptoms of COVID-19?

The most common symptoms are **fever, tiredness, and dry cough**. Some patients may have aches and pains, nasal congestion, runny nose, sore throat or diarrhea. These symptoms are usually mild and begin gradually. Some people become infected but don't develop any symptoms and don't feel unwell. Most people (about 90-95%) recover from the disease without needing special treatment.

How does COVID-19 spread?

The disease can spread **from person to person through small droplets** from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets. This is why it is important to stay more than 1 meter (3 feet) away from a person who is sick.

Who is at risk of developing severe illness?

Older persons and persons with pre-existing medical conditions (such as high blood pressure, heart disease, lung disease, cancer or diabetes) appear to develop serious illness more often than others.

Is there any vaccine or treatment for COVID-19?

Not yet, but vaccine trials are in progress and will be available if found safe and effective for use in humans.

Is it safe to receive a package from any area where COVID-19 has been reported?

Yes. The likelihood of an infected person contaminating **commercial goods is low** and the risk of catching the virus that causes COVID-19 from a package that has been moved, travelled, and exposed to different conditions and temperature is also low.

Should I wear a mask to protect myself?

Only wear a mask if you are ill with COVID-19 symptoms (especially coughing) or looking after someone who may have COVID-19. Disposable face mask can only be used once. If you are not ill or looking after someone who is ill then you are wasting a mask.

The most effective ways to protect yourself and others against COVID-19 are

- **Washing your hands** thoroughly with soap and water, or using an alcohol-based hand sanitizer.
- **Properly covering your nose and mouth** with a tissue or your sleeve when coughing.
- **Avoiding close contact** maintain a distance of at least 1 meter. (3 feet) from people who are coughing or sneezing.

In any case, if you have fever, cough and difficulty breathing seek medical care early to reduce the risk of developing a more severe infection and be sure to share your recent travel history with your healthcare provider .

Minimal composition of a set of PPE for the management of suspected or confirmed cases of COVID-19

Protection	Suggested PPE
Respiratory protection	FFP2 or FFP3 respirator (valved or non-valved version)*
Eye protection	Goggles (or face shield)
Body protection	Long-sleeved water-resistant gown
Hand protection	Gloves

* In case of shortage of respirators, the use of face masks (surgical or procedural masks) is recommended. When this type of PPE is used, the limitations and risks connected to its use should be assessed on a case-by-case basis.

European Center of Disease Prevention & Control, Technical Report, Feb 2020



Discharge Medication Reconciliation:

Bakhtawer Raza Chauhan, Take home Pharmacy Services

The patients with co-morbidities are usually found keeping and following the prescriptions from multiple consultants all at once. Medication reconciliation at the point of discharge helps patients to get right advice and cost effective medication therapy. The process involves developing a list of medications patient was taking prior and during hospitalization and then comparing it with the medications prescribed at the time of discharge. Once an optimum final list of medications suggested by pharmacist is approved by physician, it is then communicated to the patient or patient's attendants. The medicines patients have to take at home are physically separated from the medicines to be discontinued. This avoids confusions leading to medication errors such as omissions, duplications, dosing errors and drug interactions; and helps medication therapy optimization that may avoid readmissions.



Reconciliation also helps finding out more symptoms patient develops during hospitalization but has not discussed with primary consultant which pharmacist notifies to physician and changes are made accordingly. Patients also praise and acknowledge the role of pharmacists who help them in getting to know their medicines well and help in increasing compliance.

Venous Thromboembolism (VTE) & Estrogen-Based/ Hormonal Birth Control in women

Muhammad Awais, Anticoagulation/ICU Clinical Pharmacist

Blood clots can form in the deep veins, most commonly in a person's legs but sometimes in the arms and other locations. This is called deep vein thrombosis (DVT). Left untreated, blood clots can break off and travel to the lungs, which can be life threatening. This is called pulmonary embolism (PE).

Women face clotting risks (other than physical factors) unique to their gender, including: Pregnancy and childbirth, Hormone therapy for birth control (pill, patch, ring), for treating menopause symptoms, and Hormone therapy for cancer.

Most women can take hormonal birth control safely or experience no complications. However, hormonal birth control in any form (pill, patch, ring) can place a woman at increased risk for blood clots. Most forms of birth control contain estrogen and synthetic progesterone, or progestin, and cause the body to hormonally imitate pregnancy. This prevents pregnancy but also raises clotting risk. These combined contraceptives increase clotting risk 2-3 times over that of nonusers; risk is further increased in women with clotting disorders, history of blood clots and other risk factors. Progestin-only contraceptives (pill, IUD, implant, injectable) generally do not increase blood clot risk.

The reduced impact of Estradiol (E2) vs EE (ethinylstradiol) on coagulation translates into the epidemiologic evidence of a reduced number of events in E2 vs EE users, when progestins other than levonorgestrel are used. However, E2 may continue to negatively impact on the risk of VTE, and this should not be forgotten at the time of prescription. Family history of VTE or thrombophilia, age, and obesity are risk factors for VTE too. If these risk factors are not taken into consideration and excluded, they can overcome or hide the higher safety of E2 vs combined estrogen-progestin contraceptive (CEPCs) with EE.

Ref: Fruzzetti F, Venous thrombosis and hormonal contraception: what's new with estradiol-based hormonal contraceptives?. *Open Access J Contracept.* 2018;9:75–79. Published 2018 Nov 8.



Formulary Updates (Visit Shifa Intranet Home Page—click Medication Updates for details)

Brand	Generic	Class	Indications
Hilfo-B	Tenofovir Alfenamide	Antiviral	Hepatitis B
Trexol 50mg	Methotrexate	DMARD	Arthritis
Tecentriq	Atezolizumab	Monoclonal antibody of IgG1 isotype	Different types of cancer
Savesto 50mg	Sacubitril/Valsartan	Angiotensin Receptor-Neprilysin Inhibitors (ARNi)	Heart Failure
Simbrinza Eye drops	Brinzolamide + Brimonidine	Anti Glaucoma	Reduction of intraocular pressure



Help us in Identifying ADRs

Sundus Maria (Clinical Pharmacist ICU)

As a health care professional, this question often comes to mind as to why report the adverse drug reactions? and why it is so important? It is well known that all drugs carry the potential to produce both desirable and undesirable effects. No drug is absolutely safe under all circumstances of use or in all patients. As health care professionals we must be vigilant about the undesirable effects. Adverse Drug reactions occur on daily basis in a hospital setting and they are difficult to identify as they often mimic natural disease states. Such reactions lead to an increased cost in care and cause the patients to lose confidence in their physicians. Underreporting of ADRs esp. in pediatrics because of the lack of published data is of great concern. Because of absence of appropriate clinical trials in the pediatric population, they are at a high risk. The reported ADRs identify new reactions, the frequency of ADR reports is recorded and risk factors are identified. The information is shared with the prescribers to prevent future ADRs.

How to identify: In both the inpatient and outpatient setting, a patient's new or worsening symptom may be the first sign of an ADR. In IPD pharmacy, stat orders for naloxone, flumazenil, diphenhydramine, antiemetics, vitamin K, corticosteroids, or anti-diarrheal may alert the pharmacist that an ADR has occurred. In OPD pharmacy, patients often seek advice to treat various symptoms at home. For example, if a patient asks the pharmacist for a recommendation to treat diarrhea, inquiry about medications the patient is taking can determine whether diarrhea is a known ADR associated with the drug therapy such as with antibiotics. Laboratory tests may also assist in identifying an ADR. A new order for a serum drug level may alert the practitioner to investigate whether an ADR caused by drug toxicity or treatment failure is occurring. The practitioner should take a close look at the patient to assess whether an ADR is the potential culprit. Any Allergic Reaction must be reported immediately by the Nurses or doctors to the pharmacy (hotline 3977).

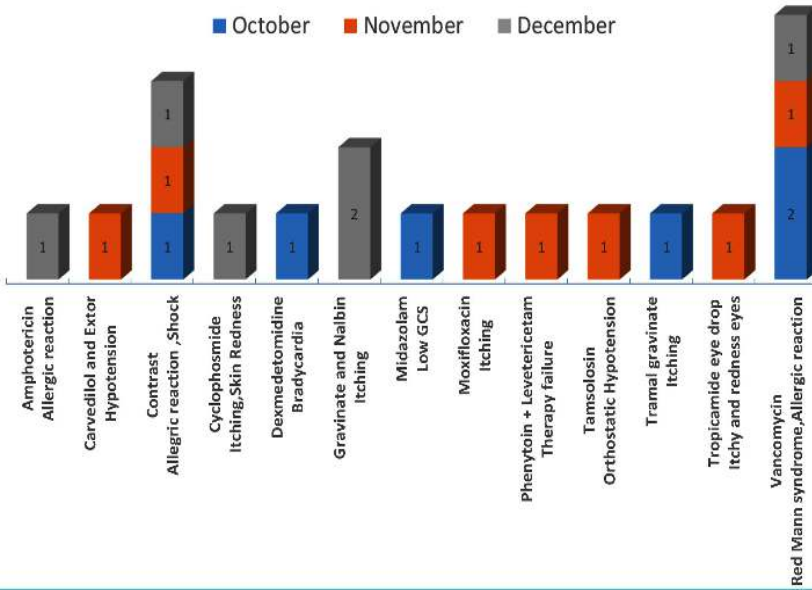
The exercise of reporting ADRs demands cooperation among all healthcare providers. We realize healthcare professionals have heavy workloads and we would greatly appreciate your support. We need You to report more frequently and report even when you are not sure a side-effect has been caused by a medicine. Identifying a new risk could have a major impact on the clinical management of patients.

ADRs MUST BE REPORTED FOR:

- ⇒ Newly added drugs
- ⇒ Serious or Life threatening reactions, or
- ⇒ That result in prolonged hospital stay, shifting to higher level of care, use of reversal agents or therapy to manage symptoms
- ⇒ Unusually increased frequency of known reaction/ side effect
- ⇒ Unusual / bizarre reactions

Adverse Drug Reactions Report

■ October ■ November ■ December



Javeria Khalid (Clinical Pharmacist) Presenting Poster

Komal Fizza (Associate Manager) and Rehan Anjum (Clinical Pharmacist) as a guest speaker at Antimicrobial Stewardship workshop in Annual MMIDSP conference at Lahore.

Inhalers are not Air Fresheners



REPORT ADR @ 3977 Email: Drug.information@shifa.com.pk

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Thank you , we are looking forward for your valuable feedback.



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