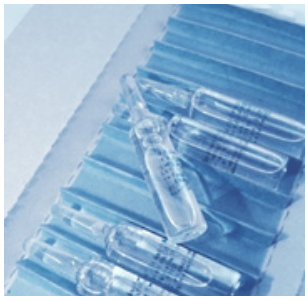
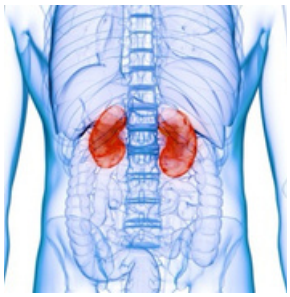
OFFICIAL PUBLICATION APRIL 2023

# SYNERGIA Newsletter

Drug shortages hit a 10-year high in the first quarter of 2023 due to a combination of new and ongoing unresolved shortages, according to the latest Information from ASHP. As of April 2023, there are 301 drugs in shortage—100 more than in the same time five years ago, and up from 295 at the end of 2022. Within the first quarter of 2023, 47 new drugs went on shortage. Chemotherapy drugs, many of which do not have alternatives, have returned to the list of the top five drug classes affected by shortages, with 23 drugs currently in short supply. The other top drug classes on shortage include central nervous system (CNS) drugs (52), antimicrobials (35), fluids and electrolytes (30), and hormones (27).





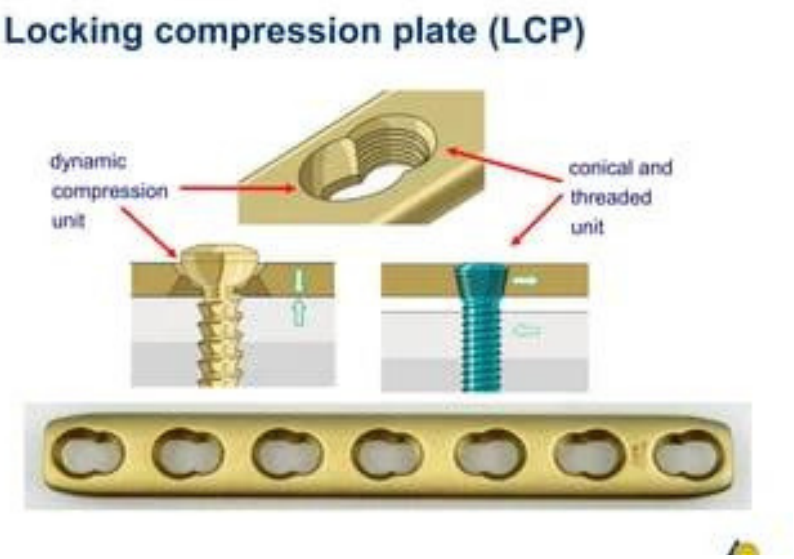
UPMC Researchers Hone Alerts for Drug-Associated AKI. Pharmacists can optimize care for admitted patients who are at risk for, or who develop, drug-associated acute kidney injury (AKI) by improving alert systems, according to a presentation at the 2023 meeting of the Healthcare Information and Management Systems Society (HIMSS). During the talk, speakers described a new system under development at UPMC (formerly known as the University of Pittsburgh Medical Center). Drugs are involved in approximately 30% of AKI cases in hospitalized patients. But imprecise alert systems mean at-risk patients could be overlooked, “The goal is to develop alerts that are accurate,”

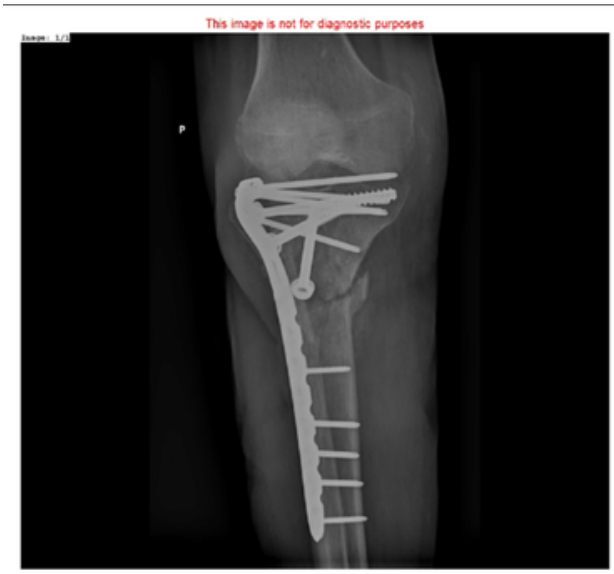
## EDITOR'S DESK

We the editorial committee have a great privilege on releasing the Official Newsletter of Krupanidhi College of Pharmacy. Synergia Newsletter highlights interactive activities and academic progress of students and faculty members. We extend our sincere thanks to our Honourable Chairman and our beloved Principal for their guidance and support. I do hope that the newsletter would encourage many more students to use it as a platform to express their creativity. we would like to thank our readers for their goodwill and encouragement.

# PROXIMAL TIBIAL FRACTURES USING LOCKING COMPRESSION PLATING

Dr. Mahesh Kumar Reddy, Assistant Professor
Orthopeadic Department, MVJMC&RH




## Introduction

The proximal tibial fractures involve various fracture configurations. The tibial plateau fractures comprise mainly Lateral condyle, Medial condyle and Bi condylar. Most of these involve articular surface of the tibia, which form part of a major weight bearing joint of axial skeleton of the human body. Demographically, majority of the patients are young adults with robust health. The majority of the injuries are due to, road traffic accidents. These fractures occur due to a combination of axial loading and varus or valgus force applied leading to articular depression.

Ø High speed two wheeler riding
Ø Bumper injuries due to direct trauma.

The high energy trauma results in diverse group of injuries, with various degree of severity.

Ø Ranging from simple injuries with predictably excellent results after non operative treatment.
Ø Complex fracture patterns that challenge even the most experienced surgeons, and many times results are not very satisfactory.
Ø Often these high velocity injuries are associated with various degrees of soft tissue injuries and many fractures are associated with limb threatening neuro vascular injuries, like acute compartment syndrome.

For the diagnosis of these various intra articular injuries encompassing tibial plateau needs high resolution imaging studies including

ØHigh quality digital radiography.
Ø 3-D C.T Studies.
Ø MRI Imaging

These imaging studies are required to assess the type of fracture, involvement of

ØArticular surface
Ø Stable or unstable and
Ø Involvement of supporting soft tissue structures of joint.

This will help the treating surgeon to select the best treatment options.

## Methodology

This study of surgical management of proximal tibial fractures was conducted in the Department of orthopaedics. Clearance was obtained from hospital ethical committee. During this period 30 patients were treated for proximal tibial fractures were treated by open reduction and internal fixation with buttress plate and LCP. Out of which 4 cases lost for follow up. All the required data was collected from the patients during their stay in the hospital, during follow up at regular intervals and from the medical records.

Surgical Technique Plate Osteosynthsis

1. Prior to the surgery, the patient & close relatives were counselled regarding the type of anaesthesia & type of surgery and possible outcome of the surgery Informed & written consent was taken
2. Medical evaluation of the patient and necessary treatment was instituted in certain patients where it was necessary.
3. Then the patient was evaluated any risk factors any type of anaesthesia by anaesthesists.
4. All the patients were kept nil orally for 8-10 hrs before surgery.
5. All the patients were given head & body bath, the whole limb to be operated was thoroughly cleaned including the back & private parts.
6. Inj. tetanous taxoid was given along with xylocaine test dose.
7. Adequate compatible blood (whole blood/packed cells) was arranged.
8. The required implanted in assorted sizes and instrumentation set was kept ready in each case.

Instruments and implants used in proximal tibial fractures

The various instruments required are

1. Reduction clamps (pointed) for reducing the fracture site.
2. Periosteum elevator: for elevation of periosteum
3. Screw drivers for 4.5mm cortical screws 4mm and 6.5mm cancellous screws (hexagonal drivers prefered).
4. Hand drill, power drill.
5. Drill bit of 3.2mm for drilling the bone
6. Tap of different sizes ie., 4.5mm and 6.5mm tap.

Follow up

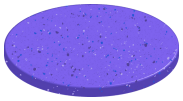
Ø Patients were followed up at 4 - 6weekly, 8-10wks, 12- 16wks intervals until fracture union and at once at the end of 1 year, 6 months and 1year thereafter.

Ø Periodic follow up of the patient was done at OPD days.

A thorough clinical assessment was made regarding the symptoms of pain, discomfort, walking ability, movement of joint, any bony tenderness, any abnormal mobility at fracture site presenting/disappearing and associated pain, any shortening of the limb. Any complications like infection, stiffness of joint, muscular wasting etc and recorded in detailed in patient proforma sheet, then followed radiological assessment comparing with previous x-rays. The fracture was said to united when there was bridging callus at the fracture site at least in three cortices in the anteroposterior and lateral views. Trabeculations extending across the fracture site was also taken into consideration. The scoring system used in this study was Modified Insall Knee Soscity Scoring System.

## Conclusion

Our study demonstrates improved outcomes in the locked plating group based on several variables evaluated. The 12% higher union rate at 6 months is superior to that of the external fixation group. The average time to union was superior in the plating group (13.5 VS 16 weeks), although the overall nonunion rates at latest follow-up were similar. The improved healing rate may potentially be related to the fixation characteristics of the locking plates, increased use of bone grafting, and/or a more adequate reduction. It should be noted that the overall union rate of 90% is supported by numerous studies in the literature that report union rates of 94% to 100% with plating.



# Evolution of Mesenchymal Stem Cell Therapy as an Advanced Therapeutic Medicinal Product (ATMP)—an Indian Perspective

Dr. Moinuddin Basha Assistant Professor
Orthopeadic Department, MVJMC&RH

Stem cells can be defined as cells that have the ability to self-replicate for an unspecified period. Under the right conditions and signals, depending on their origin and bio-plasticity, stem cells can differentiate into multiple cell lineages and develop into various mature cells. Stem cell therapy is a fast-developing branch of medicine that includes the most innovative regenerative therapies for the restoration of cell and tissue function in individuals with severe diseases which do not respond to conventional therapies, including surgeries, radiotherapies and pharmacologic treatments. Stem cell research has resulted in the emergence of cell-based therapies for incurable disorders, and more than 100 illnesses can now be addressed using stem cell therapy.

In the 1950s, stem cells were employed for the first time as a treatment for marrow aplasia in a mouse model. Of all therapies employed, there are two major categories, namely: (a) hematopoietic stem cell (HSC)-based cell therapy and (b) mesenchymal stem/stromal cells (MSCs)-based cell therapy. HSCs have been extensively researched and used over the last 60 years to treat acute myeloid leukaemia (AML), thalassemia, chronic myeloid leukaemia (CML), sickle cell anaemia, acute lymphoblastic leukaemia (ALL), aplastic anaemia, Hodgkin's lymphoma, Fanconi anaemia, and other non-Hodgkin's lymphoma subtypes. Since 2012, special interest was developed by researchers on MSCs due to their low immunogenicity compared to HSCs and other cell-based products. MSCs have also been shown to have significant immunological modulation and the ability to modulate the immune system of the host, making them useful in treatment. They offer a wide range of therapeutic uses and are quickly becoming a valuable tool for a variety of pathologies, including cardiac, neurological, and autoimmune illnesses, as well as dermatologic and oncologic disorders. MSCs are currently used in the treatment of graft versus host disease (GVHD), degenerative osteoarthritis, and Burger's disease. The development of MSC-based products is not only time-consuming, but is also a complex process that includes non-clinical and clinical studies as well as the marketing authorization imposed by various regulatory agencies, with each product demanding a distinct approach. More than 500 clinical trials on MSC-based products are currently in progress to assess their safety and adverse effects, to define dosages and administration routes, and to determine their efficacy as therapeutic agents at targeted diseases.

# Poster Presentation

Benison Binny, Dafney Sequeira, Deepika Karki, Rumana Khatija, Suikriti Sharma
PHARM D INTERNS
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# AN OVERVIEW OF THE HISTORY OF PHARMACOVIGILANCE

01

**1848**

**Hannah's Death in 1848 by Chloroform**

About 169 years ago, a young girl suffered from an infected toenail that required surgical removal. And after receiving chloroform anesthesia, she died. Hanna's case is not isolated. Many other patients also suffered the same destiny. Later in 1893, the Lancet published a report about these chloroform-associated deaths.

02

**1937**

**107 Americans Died in 1937 by Sulfanilamide Elixir**

However, the main factor in those individuals' deaths was not the sulfanilamide elixir but its solvent, diethyl glycol. The pharmaceutical corporations at the time were ignorant of diethyl glycol's toxicity, which resulted in this calamity. In response to this incident, the Federal Food, Medication, and Cosmetic Administration were established to ensure drug safety prior to its approval and distribution to the market.

03

**1938**

**US Federal Food and Drug Act 1938**

This act required that the pharmaceuticals should be "pure" and "free of any contamination".

04

**1955**

**Melena and acetylsalicylic acid (ASA)**

In a published study in 1938, Dr. Douthewaite assumed a causal relationship between the administration of acetylsalicylic acid and melena; however, the study findings couldn't confirm his hypothesis. But soon after, in 1955, it was proved that acetylsalicylic acid causes gastrointestinal toxicities.

05

**1961**

**Thalidomide Tragedy**

Thalidomide was prescribed for morning sickness. Clinicians were confident that thalidomide was safe during pregnancy. But unfortunately, it caused abortion for many women besides fetal disabilities to born babies. And from 1961 to 1962, thalidomide was withdrawn from most countries worldwide.

06

**1964**

**Yellow Card Scheme**

In response to this crisis, the UK released the Yellow Card Scheme in 1964 to facilitate drug toxicities' reporting process. And in 1965, the European legislation was established to regulate the operation of medicinal products.

07

**1965**

**The European Legislation**

It was established to regulate the operation of medicinal products.

08

**1968**

**International Monitoring Programme**

The WHO founded the International Drug Monitoring Program in 1968 to detect adverse drug reactions worldwide. In 1978, the scientific and technical responsibility of the WHO Program was transferred to Sweden. And it was the start of the first WHO collaborating center, the Uppsala Monitoring Centre in Sweden.

09

**1995**

**European Medicines Agency (EMA)**

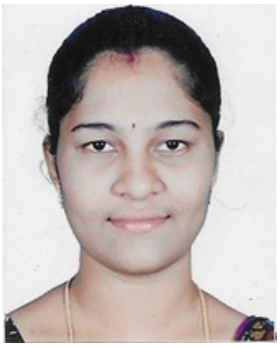
In 1995, the EMA was established. By monitoring and evaluating medicines in the European Union (EU) and the European Economic Area (EEA), the EMA played a crucial role in promoting and protecting human and animal health. Besides, it supports pharmacovigilance in the EU. And through its unique system, it prevents, detects, and assesses adverse drug events.

10

**2001**

**Eudravigilance**

In 2001, Eudravigilance, the official European database, started its role in analyzing and managing the suspected adverse drug events; it included the drugs under investigation, and that have been authorized for the market.



# INSULIN INJECTION TECHNIQUES

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·Diabetes is one of the most common non communicable diseases. It is the fourth leading cause of death in high- income countries, and there is substantial evidence that there may be an epidemic in economically developing and newly industrialized countries.

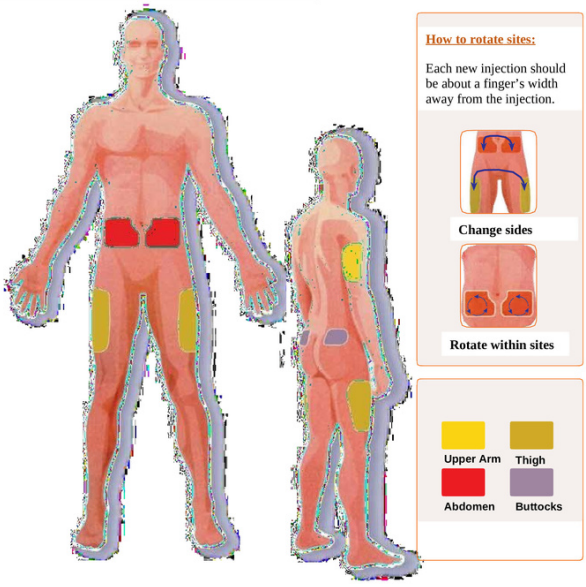
·Type 1 diabetes is an autoimmune disease characterized by progressive loss of functional β-cell mass. The single treatment option for most people diagnosed with the disease remains life-long administration of exogenous insulin. However, despite the availability of advanced insulinanalogues, many individuals with type 1 diabetes do not meet the recommended treatment goals. Consequently, mortality among people with this disease is three-times greater than in thegeneral population.

·Type 2 diabetesis a chronic condition that affects the way the body processesblood sugar. With type 2 diabetes, the body either doesn't produce enough insulin or it resists insulin. Treatment includes lifestyle modifications, use of oral hypoglycemic agents and exogeneous insulin.

·Insulin therapy is essential for treating of both T1DM and T2DM. It plays a vital role in the maintenance of blood glucose level and reduces diabetes complications. Effective insulin management helps patients improve adherence, facilitate self-management of people with DM, prevent the risk of hypoglycemia, and improve the quality of life. However,a large body of literature indicates that patientswith DM have insufficient knowledge about hypoglycemia and insulin use. The lack of such knowledge will likely result in the increased risk of hypoglycemia and severe complications. Effective insulin injection technique is essential to ensure effective management of diabetes. Those who administer insulin should understand how it works, in particular its link to blood glucose levels. Incorrect injection technique can cause various local site reactions such as lipoatrophy, lipohypertrophy, bruising, bleeding and amyloidosis.


## Mixing, drawing and injecting insulins:


## Site selection and rotation:



# COMPLICATIONS ASSOCIATED WITH VITAMIN B12 DEFICIENCY

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Vitamin B12, also known as cobalamin, is a water-soluble vitamin that is derived from animal products such as red meat, dairy, and eggs. Vitamin B12 is an essential vitaminwith largely non vegetarian source.Vitamin B12 is needed for fatty and amino acid metabolisms and DNA synthesis and also plays a significant role in the conversion of homocysteine to methionine, which is requiredfor the synthesis of neurotransmitters and phospholipids. Intrinsic factor is a glycoprotein produced by parietal cells in the stomach and necessary for the absorption of vitamin B12 in the terminal ileum.Once absorbed, vitamin B12 is used as a cofactor for enzymes that are involved in the synthesis of deoxyribonucleic acid (DNA), fatty acids, and myelin.

Cellular and molecular consequences. The common consequence of B12 deficiency and genetic disorders affecting B12 metabolism is a cellular deficit in one or both of the coenzyme forms of B12. At the molecular level, B12 deficiency leads to an impaired methylation and impaired metabolism of methylmalonate, which is derived from the catabolism of certain amino acids and fatty acids

Neurological manifestations. B12 deficiency affects the nervous system, resulting in demyelination of peripheral and central neurons which is generally considered to be the mechanism underlying the classic myeloneuropathy of B12 deficiency. The long tracts of white matter in the posterior and lateral columns of the spinal cord containing sensory neurons that are responsible for the conduction of vibration and position are particularly sus- ceptible to demyelination, but motor neuron myelination can also be affected.

Haematological manifestations. The haematological effect of B12 deficiency is megaloblastic anaemia, which results from disruption of DNA synthesis. When B12 is deficient, folate synthesis is impaired, which limits the supply of the required form of folate for the synthesis of thymidylate and DNA. DNA synthesis in tissues undergoing rapid cellular turnover, such as the hematopoeitic system, is particularly affected. Unbalanced growth in dividing bone marrow cells produces abnormally large cells with fine, immature- looking nuclear chromatin. This predominantly affects erythroid precursors, giving rise to anaemia with abnormally large red cells (microcytes).

Treatment / Management

Treatment of vitamin B12 deficiency involves repletion with B12. However, depending on the aetiology of the deficiency, the duration and route of treatment vary. In patients who are deficient due to a strict vegan diet, an oral supplement of B12 is adequate for repletion. In patients with a deficiency in intrinsic factor, either due to pernicious anemia or gastric bypass surgery, a parenteral dose of B12 is recommended, as oral B12 will not be fully absorbed due to the lack of intrinsic factor. A dose of 1000 mcg of B12 via the intramuscular route is recommended once a month. In newly diagnosed patients, 1000 mcg of B12 is given intramuscularly once a week for four weeks to replenish stores before switching to once- monthly dosing. Studies have shown that at doses high enough to fully saturate intestinal B12 receptors, oral B12 is also effective, despite a lack of intrinsic factor. In anyone at risk of developing a B12 deficiency, such as patients with Crohn's disease or celiac disease, routine monitoring of B12 should be performed. If the severity of the disease worsens and B12 levels begin to decline, treatment is then started. However, prophylactic treatment before B12 levels fall is not indicated.

# PICTOGRAM BASED INHALATION TECHNIQUE IN ASTHMA PATIENTS

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Bronchial asthma is the most chronic disease that is seen most commonly among the word wide population. It is a condition in which a person's airways become inflamed, narrow and swell and produce extra mucus, which makes it difficult to breathe.

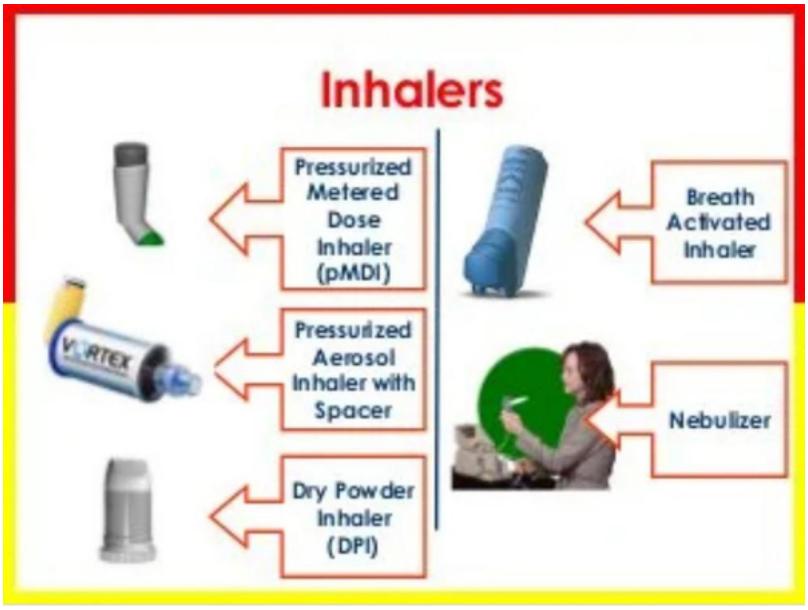
## WHY INHALER TECHNIQUE ARE SO IMPORTANT?

Ø Incorrect inhaler technique is a common contributor to poor symptom control of asthma

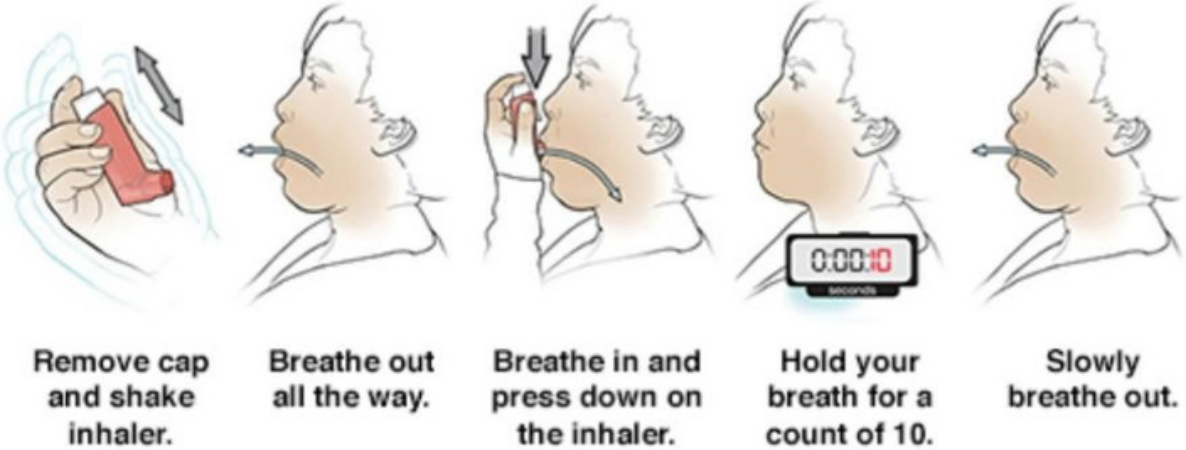
Ø Incorrect inhaler technique is associated with

·an increase in relieve use
·use of emergency services
·worsening asthma control
·higher rates of asthma instability

Patients frequently revert to incorrect inhalation technique after a short period so there is a need to regularly check inhaler technique







# PHYSICAL CO-MORBIDITIES AND MEDICATION USAGE IN PSYCHIATRIC PATIENTS

Dr.Sukanya Edagottu, Assistant Professor
Department of Pharmacy Practice
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Mental illness affects a person's cognition, emotion, and behaviour that lead to dysfunction in the psychological and developmental process underlying mental functioning. The diagnostic and statistical manual of mental disorders (DSM-5) is the most widely used handbook by psychiatrists and physicians for the diagnosis and management of mental disorders. Over 9.8 million teenagers in the age group of 13-17 years are affected with depression and other mental health disorders. Almost 4.4% and 3.6% of the world population suffers from depression and anxiety disorders by affecting health and quality of life. Physical Co morbidity is defined as a disease or condition that coexists with another disease. Most of the participant has at least one physical comorbidity such as diabetes mellitus, hypertension, rheumatoid arthritis, hyperthyroidism, hypothyroidism, cardiac arrhythmias, and epilepsy.

If a person is diagnosed with Major depressive disorder, Social anxiety disorder, and Diabetes Mellitus-II, there will be chances of developing other co morbidities like anxiety disorder, Bipolar disorder. Even concomitant use of multiple medications may result in adverse drug events and drug-drug interactions. The majority of antipsychotic medications interact with other co morbid drugs like antihypertensives, hypoglycemics, anti-epileptics, and antiarrhythmics causing serious Drug drug interactions. A retrospective study of mental health has stated that patients with serious mental disorders have a high prevalence of Diabetes. This is one of the highest among psychotic illness. Also, elderly patients with depression have high-frequency rates of physical co morbidities like Diabetes mellitus and Hypertension.

From the data obtained, it has been concluded that a total of 29.2% of the psychiatric out patients were found to have physical co-morbidities. In terms of a specific illness, depression was the major psychiatric illness observed about participants this was followed by anxiety and schizophrenia. Major physical co-morbidity detected in this study was hypertension followed by thyroid abnormality. The results of our study have revealed that rate of antidepressants prescription was high. The frequency of chronic physical conditions and depression is very common. The potential drug drug interactions must be considered while selecting treatment options in patients with multiple co-morbidities. This can help in achieving optimal patient adherence and outcomes. Psychiatrists in collaboration with clinical pharmacists must make sincere efforts to overcome their sense of inadequacy in these conditions. This can save both time and money for patients and the healthcare system.

# CENTRAL STERILE SUPPLY DEPARTMENT MVJ HOSPITAL

The Sterile Processing Department comprises that service within the hospital in which medical/surgical supplies and equipment, both sterile and non-sterile, are cleaned, prepared, processed, stored, and issued for patient care. The Sterile Processing Department has specialized expertise and direct responsibility for providing clean and sterile medical/surgical supplies and equipment to patient care areas. Sterile Processing Departments are typically divided into four major areas to accomplish the functions of decontamination, assembly and sterile processing, sterile storage, and distribution. In the decontamination area, reusable equipment, instruments, and supplies are cleaned and decontaminated by means of manual or mechanical cleaning processes and chemical disinfection. Clean items are received in the assembly and packaging area from the decontamination area and are then assembled and prepared for issue, storage, or further processing (like sterilization). After assembly or sterilization, items are transferred to the sterile storage area until it's time for them to be issued.


# AWARENESS PROGRAM ON EPILEPSY On 13th February 2023 at Vidya Siri College of Pharmacy, Bangalore

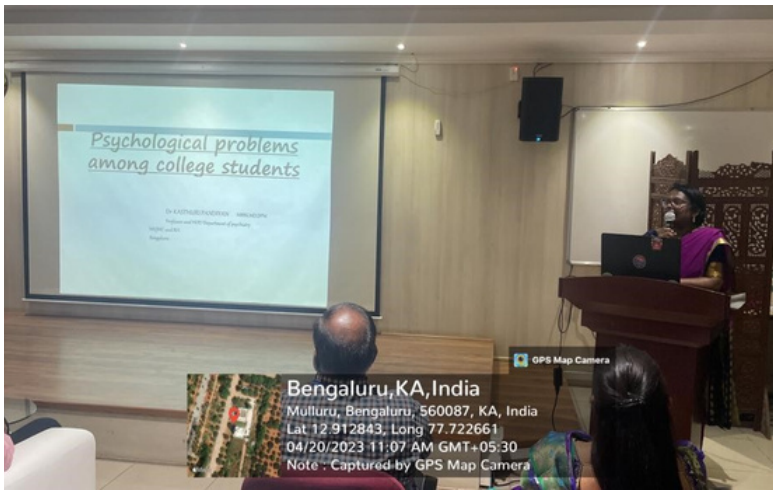
## Theme: STIGMA

Epilepsy affects almost every aspect of the life of the person diagnosed with the condition. For many people living with epilepsy, the stigma attached to the condition is more difficult to deal with than the condition itself. Misconceptions and myths often contribute to the stigma surrounding epilepsy. For example, many people assume that epilepsy is a mental illness, that it limits activities, or even that epilepsy is contagious. This year's International Epilepsy Day campaign seeks to dispel these myths. By sharing facts about epilepsy, we will challenge public misconceptions about epilepsy. It's important to educate ourselves and others about the facts about epilepsy and to dispel these myths and misconceptions. This can help to reduce the stigma and discrimination faced by people living with epilepsy and ensures that they have access to the same opportunities and rights as everyone else. To create awareness about Epilepsy, the 4th year Pharm D students of Krupanidhi College of Pharmacy actively participated by educating the students of Vidya Siri College of Pharmacy on the various topics related to Epilesy.

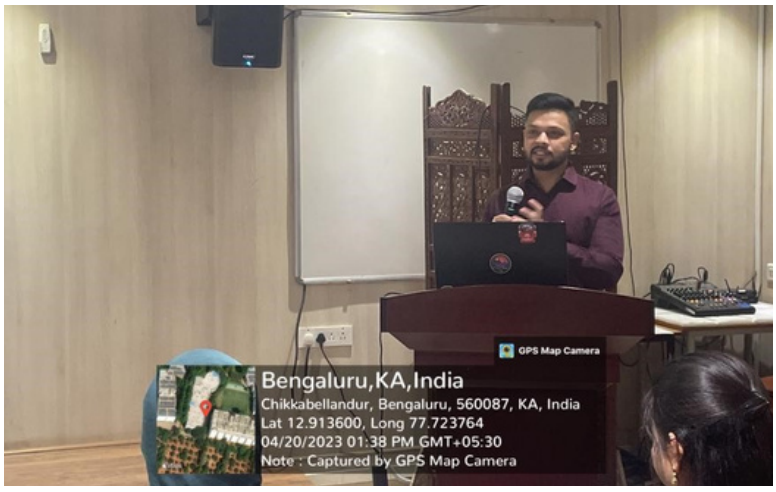

# ONE DAY CONFERENCE ON CONTEMPORARY HEALTH CARE PRACTICES BY HEALTH CARE PROFESSIONALS on 20th April 2023

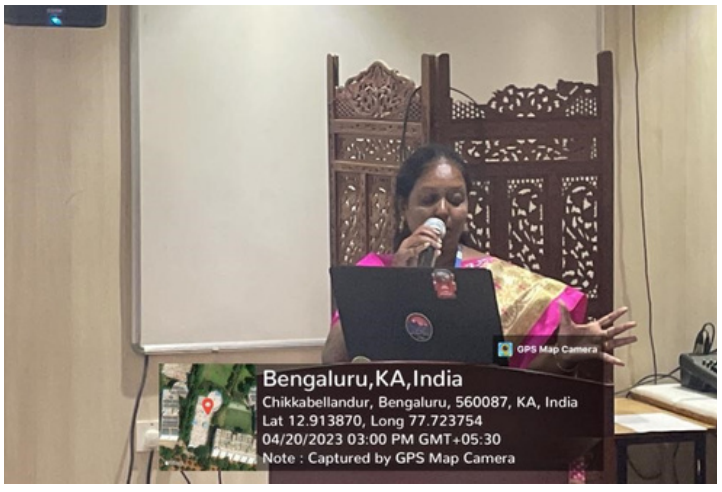
Health care is conventionally regarded as an important determinant in promoting the general physical, mental and social well-being of people around the world and can contribute to a significant part of a country's economy, development and industrialisation when efficient. Rumana Khatija, Internship student of Krupanidhi College of Pharmacy presented with a brief Introduction about the Conference. The conference started with Scientific Poster Presentations by Sruthi Vemana, Internship students of Krupanidhi college of Pharmacy. Lamp lighting by our Respected Principal Dr. Raman Dang, Professor and Director Dr. M D Karvekar, CPPA Director Professor Prakash V Mallya and Distinguished Guests for the day. Invocation Dance performance by 2nd year Pharm D students of Krupanidhi College of Pharmacy. Warm Welcome Address by our Respected Principal Dr. Raman Dang and CPPA Director Professor Prakash V Mallya. Informative Speech by Dr. Kasthuri P, HOD Department of Psychiatry, MVJ Medical College and Research Hospital, Bangalore. Enlightening Speech by Dr. M J Jacob, HOD Department of Medicine, MVJ Medical College and Research Hospital, Bangalore. Insightful Speech by Dr.Aneesh S, HOD Department of Dermatology, MVJ Medical College and Research Hospital, Bangalore. The Conference was concluded with the Vote of Thanks by the Organizing Secretary Dr. Beulah Milton, Professor and Head, Department of Pharmacy Practice, Krupanidhi College of Pharmacy.









# PHARMACY PRACTICE NEWS UPDATES

## Remdesivir Reduces Readmission Risk by 16% Among Immunocompromised Patients With COVID-19

Remdesivir (Veklury, Gilead) may reduce risk for hospital readmission by as much as 16% among immunocompromised COVID-19 patients, according to a study presented at the 2023 European Congress of Clinical Microbiology & Infectious Diseases, in Copenhagen, Denmark (abstract 00427). Previous studies have described the effectiveness of remdesivir against COVID-19, but there are limited data on the effect in immunocompromised patients. Researchers aimed to estimate all-cause hospital readmission after the index hospitalization with a COVID-19 diagnosis for immunocompromised patients who received remdesivir versus matched comparators. The researchers conducted a retrospective, observational cohort study of immunocompromised patients by using health insurance claims in the HealthVerity database from May 1, 2020 to Nov. 30, 2022.

## Medication Errors: The Year in Review

Preventing medication errors is an essential component of caring for patients and must be a core mission of every pharmacy. For medication error prevention efforts to be effective, they must be a priority. An error reduction program begins by establishing a multidisciplinary medication safety team to improve medication use. To be successful, the team must be given reasonable time and resources to assess medication safety and implement systemwide changes that make it difficult or impossible for practitioners to make mistakes that endanger patients. This multidisciplinary team should accept ownership of the medication-use process and enthusiastically embrace the opportunity to improve medication safety. Effective results depend on understanding the entire medication-use process through varied perspectives and disciplines.

## FDA Approves Qulipta for Chronic Migraine

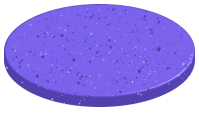
The FDA expanded the indication for the calcitonin gene–related peptide receptor antagonist atogepant (Qulipta, AbbVie) for the preventive treatment of migraine in adults. The drug, which was previously approved for episodic migraine, is now also approved for chronic migraine (headaches for 15 or more days per month, at least eight of which are associated with migraine). The FDA's decision was based on data from the double-blind, placebo-controlled, phase 3 PROGRESS trial in adults with chronic migraine, which included 463 participants. The mean migraine frequency at baseline was approximately 19 days per month. Compared with the placebo group, patients who received atogepant for 12 weeks experienced 1.8 fewer monthly migraine days (P<0.001).

## GSK launches anti-shingles vaccine in India

Shingrix was approved by the US Food and Drug Administration (FDA) for the prevention of shingles in adults 50 years of age or older in 2017. In 2018, the European Commission gave Shingrix approval for the prevention of shingles in adults 50 years of age or older. Global data estimates suggest that 1 out of 3 people develops shingles in their lifetime. Shringrix is the world's first non-live, recombinant subunit vaccine to be given intramuscularly in two doses, the company said in a statement. The vaccine, Shingrix, as per the company, can provide at least 10 years of protection against shingles, which is caused by the reactivation of the varicella zoster virus (VZV), the same virus that causes chickenpox.

## World's first 'gene silencing' Alzheimer's drug shows promise

UK scientists have conducted the first-ever trial of a new drug for Alzheimer's disease that is able to safely and successfully lower levels of the harmful tau protein known to cause the disease. The trial, led by a team at the University College London, represents the first time that a "gene silencing" approach has been taken in dementia and Alzheimer's disease. The approach uses a drug called BIIB080 (IONIS-MAPTRx) to "silence" the gene coding for the tau protein- known as the microtubule-associated protein tau (MAPT) gene.



# EVENTS CONDUCTED AT KRUPANIDHI COLLEGE OF PHARMACY

## INSTITUTION INNOVATION COUNCIL

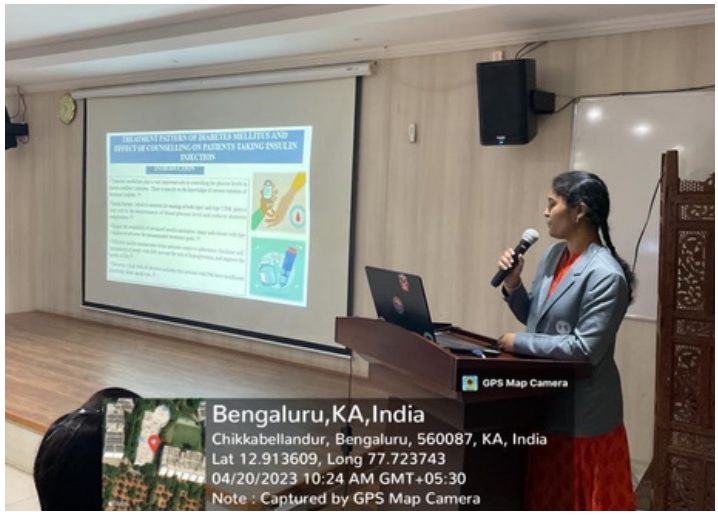
## WOMEN DEVELOPMENT CELL

## INTERCOLLEGIATE DEBATE COMPETITION


## INTERCOLLEGIATE DUM SHARADES COMPETITION


## PHARM D EXCURSION


## POSTER PRESENTATIONS




## EDITORIAL TEAM