SYNERGIA NEWSLETTER

OFFICIAL PUBLICATION ***October 2023***

OUR GOALS

Optimal medication therapy requires a system to promote the desired clinical, humanistic and economic outcomes. Pharmacists play a key role in the provision of effective health care by managing the medication therapy for patients to ensure medications are used in an appropriate manner to achieve health goals more effectively and with minimization of costs.

THE NEWS

Could Low-Dose Ketorolac Provide the Same Analgesic Effects as High-Dose Administration?

"Recently published data indicate that a low dose of the nonsteroidal anti-inflammatory drug ketorolac may be as effective at relieving pain in an emergency department setting as higher doses. "Ketorolac's analgesic efficacy remains undeterred, even when administered at lower dosages, specifically within the 10-mg to 20-mg range.

EDITORS DESK

Synergia Newsletter is a scientific communication of drug and prescribing information published by Pharmacy Practice Department of Krupanidhi College of Pharmacy. This is published two times in a calendar year and it consists of various topics which includes editorial, events, research articles, drug safety alerts, drug monograph etc.

A CASE OF ACROMEGALY

Dr. KARTHIK K H
General Medicine Department
MVJ Medical College and Research Hospital

Chief complaints:

Lower back pain since 10years, neck pain since 10years, bilateral knee pain since 10 years, headache since 10 days.

Clinical Presentations:

Protean manifestations of GH and IGF-1 hypersecretion are indolent and often are not clinically diagnosed for 10 years or more.

Acral bony overgrowth results in frontal bossing, increased hand and foot size, mandibular enlargement with prognathism, and widened space between the lower incisor teeth.

Soft tissue swelling results in increased heel pad thickness, increased shoe or glove size, ring tightening, characteristic coarse facial features, and a large fleshy nose.

Other commonly encountered clinical features include hyperhidrosis, a deep and hollow-sounding voice, oily skin, arthropathy, kyphosis, carpal tunnel syndrome, proximal muscle weakness and fatigue, acanthosis nigricans, and skin tags. Generalized visceromegaly occurs, including cardiomegaly, macroglossia, and thyroid gland enlargement.

INVESTIGATION

Age-matched serum IGF-1 levels are elevated in acromegaly.

The diagnosis of acromegaly is confirmed by demonstrating the failure of GH suppression to <0.4 µg/L within 1–2 h of an oral glucose load (75 g).

Prolactin should be measured, as it is elevated in ~25% of patients with acromegaly.

Thyroid function, gonadotropins, and sex steroids may be attenuated because of tumor mass effects.

TREATMENT

The goal of treatment is to control GH and IGF-1 hypersecretion, ablate or arrest tumor growth, ameliorate comorbidities, restore mortality rates to normal, and preserve pituitary function.

Surgical resection of GH-secreting adenomas is the initial treatment for most patients.

A CASE OF FAMILIAL CHYLOMICRONEMIA SYNDROME(FCS)

Dr. Nabanita Kora & Dr. Swetha S N
Pediatrics Department
MVJ Medical College and Research Hospital

Chief complaints:

3 months old baby girl resident of west Bengal came to Bangalore because she has white blood. Her elder brother is 7year who has red blood even do her parents.

FCS:

Familial chylomicronemia syndrome is a genetic disease caused by mutations that impair the activity of lipoprotein lipase (LPL). The incidence of FCS is unknown. The genes whose alteration cause FCS are LPL, APOC2, APOA5 and GPIHBP1 [1]. The most common cause among these is LPL deficiency and others being rare. Glycosylphosphatidylinositol-anchored high- density lipoprotein-binding 1 (GPIHBP1) acts as a chaperone for LPL from its production site to the capillary endothelium and dock to the endothelium. LPL is needed for hydrolysis of TGs in to chylomicrons and very low-density lipoproteins (VLDLs).

INVESTIGATION

She was started on insulin infusion with blood glucose monitoring.

Serial Triglyceride level

10 days before admission 2947mg/dl (normal <200mg/dl)

At admission 7095mg/dl

1 day after starting insulin infusion 5893mg/dl

2days after insulin infusion 4160mg/dl

3 days after insulin infusion 3900mg/dl

2 weeks after discharge 700mg/dl

TREATMENT

The main treatment remains dietary restrictions of fatty meals. Breast milk contains 4.4gms of total fat per 100ml. the main lipid fraction are triglycerides, which accounts for about 95% of total lipids. She was fed with low fat milk after stopping breast milk. Fat soluble vitamins were added.

SKILL LAB TRAINING PROGRAM

In Association with
Manipal Hospital
Varthur

19th May 2023

The skill lab training program on CPR started with lamp lightning ceremony at Krupanidhi Athenaeum followed by welcome address by Dr. Dev Das Santani, Professor of Krupanidhi College of Pharmacy and Brief Introduction to CPR was explained by Dr. Prabhalis Thomas, Vice Principal of Krupanidhi Nursing College. The Session was taken over by Dr. Vignesh, Consultant- Emergency Medicine, Manipal Hospital, Varthur who demonstrated about CPR to the Pharm D students of KCP.

CPR ON ADULTS-HANDS-ONLY CPR

"To carry out a chest compression:
Kneel next to the person and place the heel of your hand on the breastbone at the centre of their chest. Place the palm of your other hand on top of the hand that's on their chest and interlock your fingers.
Position yourself so your shoulders are directly above your hands.
Using your body weight (not just your arms), press straight down by 5 to 6cm (2 to 2.5 inches) on their chest.
Keeping your hands on their chest, release the compression and allow their chest to return to its original position.
Repeat these compressions at a rate of 100 to 120 times a minute until an ambulance arrives or for as long as you can.

CPR WITH RESCUE BREATHS

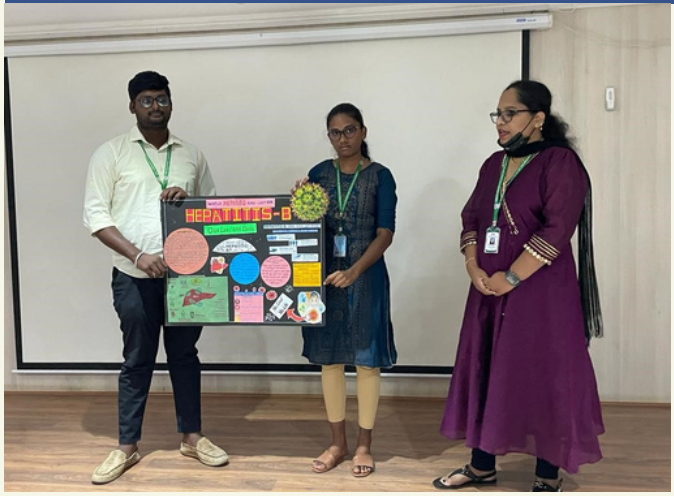
Place the heel of your hand on the centre of the person's chest, then place the palm of your other hand on top and press down by 5 to 6cm (2 to 2.5 inches) at a steady rate of 100 to 120 compressions a minute.
After every 30 chest compressions, give 2 rescue breaths.

HEPATITIS AWARENESS PROGRAM

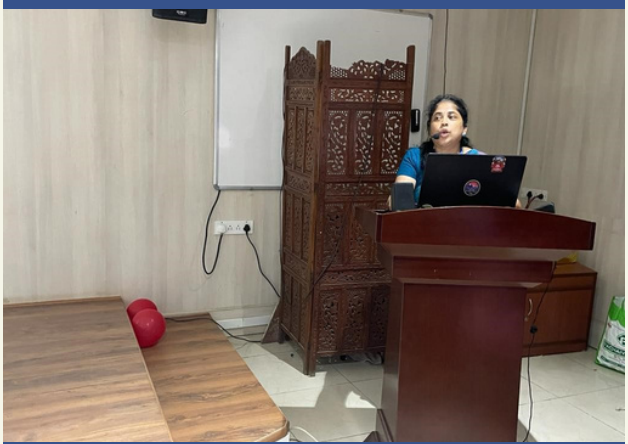
THEME: One Life, One Liver

4th August 2023

Under the theme, “One Life, One Liver,” this year’s World Hepatitis Day highlighted the importance of the liver for a healthy life, and the need to scale up viral hepatitis prevention, testing and treatment to optimize liver health, prevent liver disease and achieve the 2030 hepatitis elimination goals.



“Hepatitis A is a vaccine-preventable liver infection caused by the hepatitis A virus (HAV). HAV is found in the stool and blood of people who are infected. Hepatitis A is very contagious. It is spread when someone unknowingly ingests the virus — even in microscopic amounts — through close personal contact with an infected person or through eating contaminated food or drink. Symptoms of hepatitis A can last up to 2 months and include fatigue, nausea, stomach pain, and jaundice. Most people with hepatitis A do not have long-lasting illness. The best way to prevent hepatitis A is to get vaccinated.



We’ve only got one life, and we’ve only got one liver. Hepatitis can devastate both.

To create awareness about Hepatitis, the Pharm D students of Krupanidhi College of Pharmacy actively participated in street play, quiz and poster presentations.

PHARMACOVIGILANCE PROGRAM

Theme: Boosting public confidence in Pharmacovigilance

15th September 2023

Department of Pharmacy Practice of Krupanidhi College of Pharmacy, organized an awareness program on 15-09-2023 with the theme **"Boosting Public Confidence in Pharmacovigilance"**

Objectives of the Event:

To improve patient's medication safety and welfare in Indian population by sensitizing them regarding the importance of reporting suspected Adverse Drug Reactions by Consumers and thereby reducing the risk associated with the use of medicine.

Speaker:
Dr. Swapna R Nayaka
Professor, Department of Pharmacology, MVJMC &RH
Convener:
Dr. Raman Dang, Principal, Krupanidhi College of Pharmacy
Co-Convener:
Dr. Afzal Khan, HOD, Department of Pharmacology, MVJMC&RH.
Organizing Secretary: Dr. Beulah Milton, HOD, Department of Pharmacy Practice, KCP
Organizing Joint-Secretary: Dr. Sukanya E, Assistant Professor, Department of Pharmacy Practice, KCP
Venue: Seminar Hall, Krupanidhi College of Pharmacy
Programme Details:
Date: 15 September 2023
Day: Friday
Time: 01:00 PM -03:00 PM

The Pharmacovigilance Programme of India (PvPI) is an Indian government organization which identifies and responds to drug safety problems. Its activities include receiving reports of adverse drug events and taking necessary action to remedy problems. The Central Drugs Standard Control Organisation established the program in July 2010.

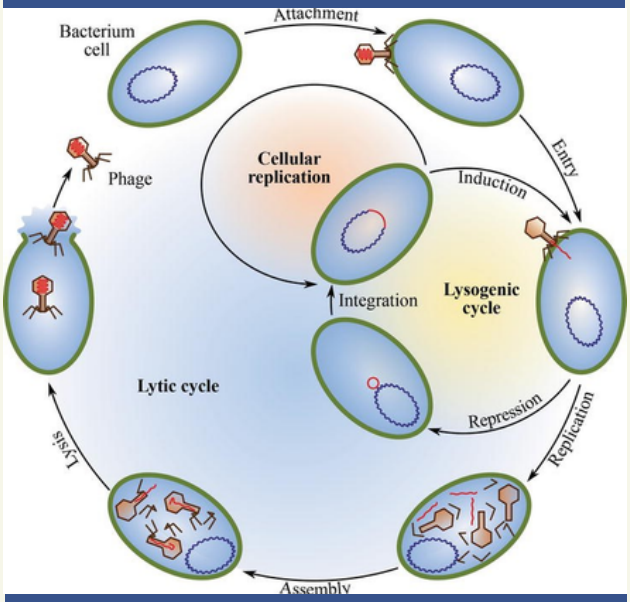
UNLOCKING THE VERSATILITY OF PHAGE THERAPY: BEYOND ANTIBIOTICS

MEGAN ELITA DSA
PHARM D INTERN

Bacteriophages, or simply phages, are remarkable biological entities composed of DNA or RNA enclosed within a protein capsid. As natural bacterial parasites, they rely on bacterial hosts for their survival and reproduction. A century ago, the term "bacteriophage," coined by Felix d'Herelle, marked the beginning of their use in treating bacterial infections in humans. However, the advent of antibiotics in the mid-20th century momentarily sidelined their importance in therapeutic medicine.

Phage therapy has now resurfaced as a promising strategy to combat bacterial infections. Phages possess unique mechanisms for targeting and killing bacteria, with distinct lytic or lysogenic growth cycles. Among these, lytic phages are harnessed for therapeutic purposes. They offer a critical advantage over antibiotics by selectively infecting and destroying bacteria, reducing the risk of antibiotic-resistant strains. Additionally, lytic phages cause less harm to the overall microbiome, making them a preferable alternative.

Human phage therapy trials are currently underway, though their therapeutic use remains primarily limited to regions such as Georgia, Poland, and Russia. Recently, the United Kingdom announced its intention to consider compassionate-use requests for phage therapy through the National Health Service. A comprehensive review of phage administration to humans and animals affirmed the overall safety of phage therapy, regardless of the route of administration.



Conclusion: Bacteriophages are experiencing a resurgence in modern medicine, offering a multifaceted approach to address bacterial challenges. While challenges and further research lie ahead, the renewed interest in phage therapy marks an exciting chapter in our ongoing battle against bacterial diseases and underscores the importance of exploring innovative therapeutic avenues.

THE FUTURE OF PHARMACY: INTEGRATING ARTIFICIAL INTELLIGENCE FOR BETTER PATIENT CARE

SAVITHA M
PHARM D INTERN

The practice of pharmacy is undergoing a transformative shift, with technology, particularly Artificial Intelligence (AI), playing a central role. As we look toward the future of pharmacy, it's becoming increasingly evident that the integration of AI is not just a possibility but a necessity. The synergy between AI and pharmacy promises to deliver more efficient, precise, and patient-centered care.

Understanding AI in Pharmacy:

Artificial Intelligence, in pharmacy, refers to the utilization of computer systems and algorithms to perform tasks that requires human intelligence. This includes activities like analysing patient data, identifying drug interactions, and optimizing medication management. AI's capacity to process vast amounts of data and make data-driven decisions positions is a game-changer in this field.

The Pharmacist's Evolving Role

Pharmacists lead AI integration for tasks from medication management to education. Training in AI is crucial for maximizing patient care benefits. Moreover, pharmacists play a vital role in interpreting AI-generated insights and translating them into actionable recommendations for patients. While AI can provide data-driven insights, pharmacists bring their clinical expertise and human touch to patient care, creating a harmonious synergy.

Conclusion:

AI's profound impact ranges from improving medication management to accelerating drug discovery. Pharmacists and healthcare professionals should welcome AI as a valuable tool while addressing privacy and ethical challenges. The future of pharmacy, centered on AI, offers safer, more efficient, patient-focused care, leading to improved outcomes and a healthier society.

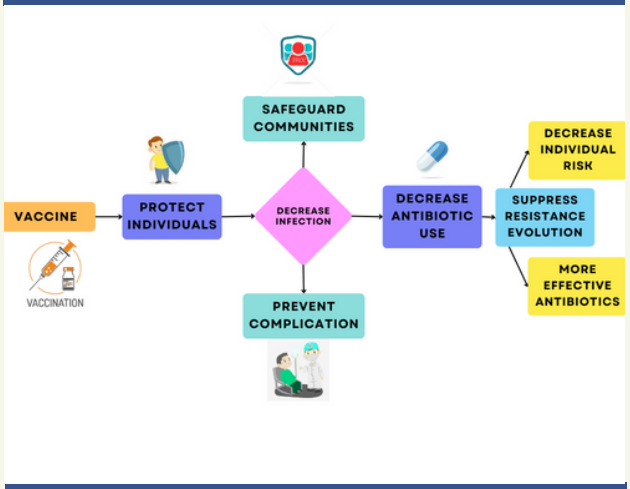
COUNTERING ANTIBIOTIC RESITANCE: INNOVATIVE VACCINE APPROACHES

HEMA SRI
PHARM D INTERN

Vaccination has protected humans by training the immune system to recognize and establish a rapid and effective response against a pathogen. In the 20th century, vaccines were introduced to large populations with the immunization practice developed by Edward Jenner. Antibiotics are therapeutic measures since generally prescribed after the settling down of an infection when hundreds of millions of bacteria are infecting the body. On the contrary, vaccines are designed to prevent diseases.

Vaccines act through immune pathways, inducing protective immune responses that are pathogen specific and target one or more bacterial virulence factors such as toxins or adhesions, either neutralizing them or engaging the effector arms of the immune system to kill the bacterial pathogen through complement and/or opsonophagocytosis.

Vaccines can be effective against antimicrobial resistance in different ways: (1) By lowering the inappropriate use of antimicrobial compounds. (2) By reducing the insurgence of resistant serotypes. (3) By reducing infection rate of resistant strains in closely related species. (4) By directly targeting antibiotic resistant microorganisms. Vaccination can affect AMR both directly and indirectly. Bacterial vaccines directly reduce antibiotic use through prevention of bacterial infections, and thus selection for AMR strains.



Conclusion:
Centre for Disease Control regards C. difficile as a major antibiotic resistance issue. Current C. difficile treatments can promote antibiotic resistance. A vaccine for C. difficile could prevent the disease and lessen antibiotic use, aiding in the fight against resistance.

IS ANTIBIOTIC RESISTANCE A GLOBAL THREAT? IF YES,THEN HOW CAN IT BE PREVENTED?

MEGHANA G
PHARM D INTERN

Antibiotics have become the cornerstone for the treatment of infectious diseases and contributed significantly to the dramatic global health development during the last 70 years. They have saved millions of lives from once-life threatening infections. However, it's crucial to recognize that antibiotics are a limited resource. Misuse has accelerated antibiotic resistance, diminishing their effectiveness shortly after introduction. The World Health Organization rates antibiotic resistance as a 'global security threat' impacting on global health, food security and development and as important as terrorism and climate change.

Misuse refers to use without need, use without prescription, self-medication, irregular or interrupted dosing or sharing of antibiotic.

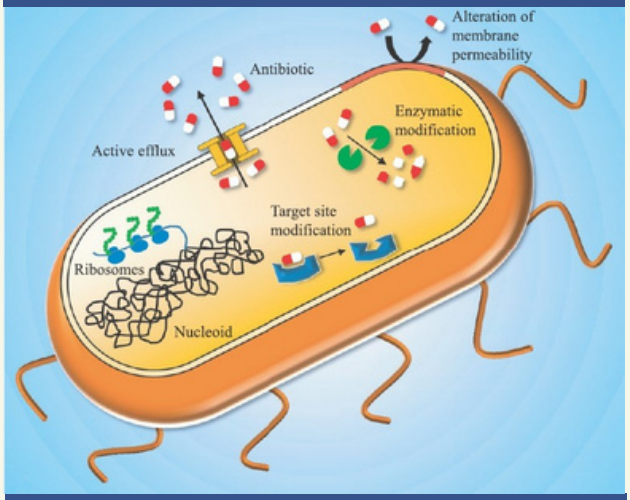
Antibiotic resistance refers to the phenomenon where bacteria develop resistance to drugs used for treating infections.

Strategies to overcome Antibiotic resistance

·Stewardship Programs: These promote the responsible use of antibiotics by healthcare providers, ensuring they are prescribed only when necessary and appropriate.

·Infection Prevention and Control: Effective hygiene practices, such as hand washing and sterilization of medical equipment, can help prevent infections in the first place.

·Vaccination: Preventing infections through vaccination reduces the need for antibiotics.



Conclusion:

·Public Awareness and Education: Raising awareness about antibiotic resistance and educating the public, healthcare providers, and policymakers is vital in changing behaviors and policies.

·Regulation and Policy: Implementing policies and regulations to control the use of antibiotics in healthcare, agriculture, and veterinary practices helps curb unnecessary use.

NAVIGATING LIFE WITH DISSOCIATIVE IDENTITY DISORDER (DID): TREATMENT AND HOPE

DR. AISHWARYA S
ASSISTANT PROFESSOR

Dissociative Identity Disorder (DID) is a multifaceted psychological condition in which individuals manifest various separate personalities and identities at different intervals.

Understanding DID: A Complex Form of Dissociation

DID is characterized by severe dissociation, a process that disrupts the connection between thoughts, memories, feelings, actions, or one's sense of identity. It often emerges as a response to traumatic experiences. The key feature of DID is the presence of two or more distinct identities, known as "alters." These alters have their own unique traits, personal histories, and preferences.

Is There a Cure for DID?

No definitive cure exists for DID. However, it's crucial to emphasize that this does not mean there is no hope for individuals with the condition. Managing DID involves ongoing treatment and support, enabling individuals to navigate life's challenges and find fulfillment.

Individuals with DID can lead meaningful lives with the right treatment and support.

Treatment includes:

1. Psychotherapy: Talk therapy, such as Cognitive Behavioral Therapy (CBT) and Dialectical Behavior Therapy (DBT), forms the core of DID treatment. These therapies help individuals understand and manage their symptoms.
2. Hypnotherapy: Clinical hypnosis, used alongside psychotherapy, can help access repressed memories and facilitate the process of integration.
3. Adjunctive Therapies: Art therapy, movement therapy, and Eye Movement Desensitization and Reprocessing (EMDR) can complement traditional treatments by providing creative outlets for emotional expression and memory processing.

Conclusion: Psychotherapy, such as Cognitive Behavioral Therapy (CBT) and Dialectical Behavior Therapy (DBT), plays a pivotal role in helping individuals manage their symptoms and integrate their alters into a more cohesive sense of self.

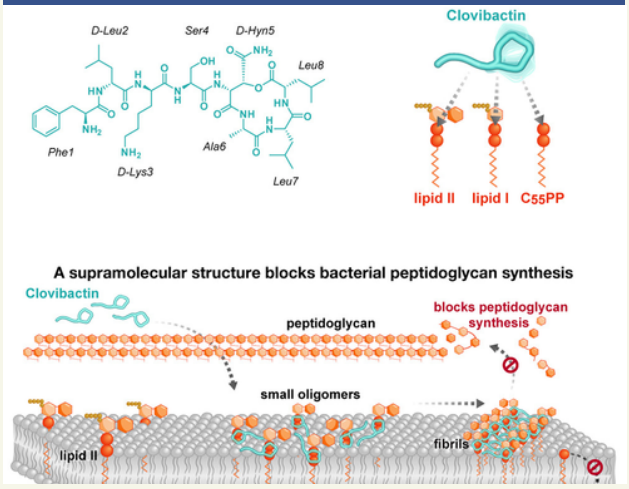
CLOVIBACTIN: A BREAKTHROUGH ANTIBIOTIC UNVEILING HOPE IN THE FIGHT AGAINST SUPERBUGS

MEGHANA M R
PHARM D INTERN

In the relentless battle against antibiotic-resistant bacteria, scientists and pharmaceutical companies are continually searching for novel solutions. Clovibactin, a ground breaking antibiotic, has emerged as a beacon of hope in this fight.

The Discovery of Clovibactin:
Clovibactin is a recent discovery that has captured the attention of the scientific community. Researchers from the university of Bonn, in collaboration with German, Dutch, and US institutions, have decoded the workings of a fresh antibiotic names Clovibactin using the device, called iCHip.
This powerful new antibiotic, derived from the soil-dwelling bacterium [Eleftheria terrae], is highly effective against bacteria, especially the notorious multi-resistant types. Interestingly, it works by surrounding the bacteria's essential structures like a cage, effectively blocking them.

Applications and Potential Benefits:
1. Treating Antibiotic-Resistant Infections:
Clovibactin's effectiveness against drug-resistant bacteria positions it as a vital tool in the treatment of infections that were once considered nearly untreatable.
2. Combating Hospital-Acquired Infections:
Hospital-acquired infections often involve antibiotic-resistant bacteria. Clovibactin can play a pivotal role in reducing the incidence of such infections and improving patient outcomes.



Conclusion:
Clovibactin represents a ray of hope in the ongoing battle against antibiotic-resistant superbugs. With its novel mechanism of action, potency, and low risk of resistance, it has the potential to revolutionize the field of antibiotics. As research and development continue, Clovibactin may soon become a vital tool for healthcare professionals and a beacon of hope for patients battling drug-resistant infections.

DEPRESRIBING TECHNIQUES TO MINIMIZE SAFETY ISSUES ASSOCIATED WITH INAPPROPRIATE POLYPHARMACY

KELHOUKHRIENUO SUOKHRIE
PHARM D INTERN

Deprescribing is one of potential approaches to reduce inappropriate prescribing and it is defined as the stopping or dose reduction of medications that are either inappropriate or unnecessary, especially among patients with polypharmacy.

Challenges to Deprescribing

The benefits of deprescribing and shortened medication lists are recognized at the patient, physician, and system levels. However, time constraints, patient resistance, and lack of systematic support hinder acceptance of deprescribing as routine medical care. Patients may be reluctant to discontinue medications, even when presented with evidence that the medications are not beneficial and may cause physiologic harm and financial distress. Patients with multiple prescribers may be reluctant for one physician to stop medications prescribed by another.

Strategies for Deprescribing- A useful way to approach deprescribing is to break it down into a five-step approach:

·Consider all medications currently being taken and the indications for each.

·Evaluate the risk of harm to that individual patient associated with each medication.

·Assess each medication for the potential to deprescribe it

·Create a priority list of medications that should be deprescribed before others.

.Implement and monitor the deprescribing regimen.

Conclusion:

A patient-centered deprescribing practice is a reasonable solution to address polypharmacy. A full medication review should be performed, specifically targeting the elderly, young children, patients with multiple prescribers, and patients with trouble managing their current medication regimen. Safe deprescribing requires thorough patient education and close follow-up to monitor for adverse withdrawal effects and disease resurgence.

DRUG SAFETY ALERTS

MEDICINES AND HEALTH CARE PRODUCTS REGULATORY AGENCY

Calcium chloride, calcium gluconate: potential risk of underdosing with calcium gluconate in severe hyperkalaemia

Calcium salts (either calcium chloride or calcium gluconate) are used to stabilise the myocardium and prevent cardiac arrest in patients experiencing severe hyperkalaemia. However, the two salts are not equivalent in terms of calcium dose. Ensure the correct dose is administered to avoid underdosing of calcium. If treated sub-optimally, hyperkalaemia can be fatal.

Non-steroidal anti-inflammatory drugs (NSAIDs): potential risks following prolonged use after 20 weeks of pregnancy

We want to remind healthcare professionals that use of systemic (oral and injectable) NSAIDs such as ibuprofen, naproxen, and diclofenac is contraindicated in the last trimester of pregnancy (after 28 weeks of pregnancy).

Febuxostat: updated advice for the treatment of patients with a history of major cardiovascular disease

Caution is required if prescribing febuxostat in patients with pre-existing major cardiovascular disease, particularly, in those with evidence of high urate crystal and tophi burden or those initiating urate-lowering therapy.

Fluoroquinolone antibiotics: suicidal thoughts and behaviour:

Healthcare professionals prescribing fluoroquinolone antibiotics (ciprofloxacin,delafloxacin,levofloxacin, moxifloxacin, ofloxacin) are reminded to be alert to the risk of psychiatric reactions, including depression and psychotic reactions, which may potentially lead to thoughts of suicide or suicide attempts. Healthcare professionals are also reminded to advise patients to be alert to these risks.

Statins: very infrequent reports of myasthenia gravis:

Globally, there has been a very small number of reports of new-onset or aggravation of pre-existing myasthenia gravis with atorvastatin, pravastatin, lovastatin, fluvastatin, simvastatin, rosuvastatin and pitavastatin (single-ingredient and fixed-dose combination products). Advise patients taking statins to be alert to new symptoms for myasthenia gravis, or worsening symptoms of pre-existing myasthenia gravis.

Nitrofurantoin: reminder of the risks of pulmonary and hepatic adverse drug reactions. Advise patients to be vigilant for the signs and symptoms in need of further investigation.

EVENTS CONDUCTED AT KRUPANIDHI COLLEGE OF PHARMACY

GRADUATION DAY
JOB FAIR AND CAREER EXPO

EVENTS CONDUCTED AT KRUPANIDHI COLLEGE OF PHARMACY

WORLD PHARMACIST DAY, INSTITUTION INNOVATION COUNCIL PARENT TEACHER MEETING, WOMEN DEVELOPMENT PROGRAM