Synergia Newsletter April 2025

VOLUME 12 ISSUE 1

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

Tailoring treatment plans to individual patient needs and preferences can lead to better outcomes and increased satisfaction

WORLD HEALTH ORGANIZATION RECOMMENDS THE FOLLOWING STRAINS FOR BOTH TRIVALENT AND QUADRIVALENT FLU VACCINES FOR THE 2025-2026 FLU SEASON

Trivalent vaccines (egg-based and cell-based):

A/Victoria/4897/2022 (H1N1) pdm09-like virus: This is the H1N1 strain used in egg-based vaccines.

A/Croatia/10136RV/2023 (H3N2)-like virus: This is the H3N2 strain used in egg-based vaccines.

B/Austria/1359417/2021 (B/Victoria lineage)-like virus: This is the B/Victoria lineage virus used in both egg-based and cell-based vaccines.

A/Wisconsin/67/2022 (H1N1) pdm09-like virus: This is the H1N1 strain used in cell-based vaccines.

A/District of Columbia/27/2023 (H3N2)-like virus: This is the H3N2 strain used in cell-based vaccines.

Quadrivalent vaccines (egg-based and cell-based):

Same strains as trivalent vaccines: The quadrivalent vaccines will also include the same three strains as trivalent vaccines.

B/Phuket/3073/2013 (B/Yamagata lineage)-like virus: A B/Yamagata lineage virus is added to quadrivalent vaccines.

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KRUPANIDHI COLLEGE OF PHARMACY
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GENERAL PHYSICAL EXAMINATION OF THE PATIENT- SEMINAR

A general physical examination involves assessing a patient's overall health through observation, palpation, percussion, and auscultation, along with vital signs and a review of their medical history. To identify early signs of disease or medical conditions. To assess the effectiveness of treatment. To guide further diagnostic procedures and to reassure the patient.

Organized by Pharm D Department, Krupanidhi College of Pharmacy, On 27th JANUARY 2025

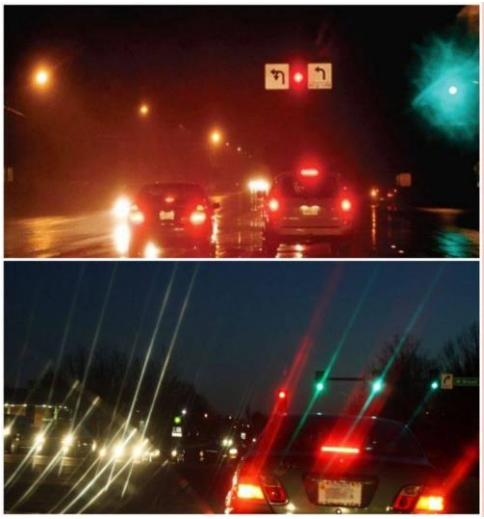
Gathering Information: **Medical History:** A thorough review of the patient's past and current medical conditions, medications, allergies, and family history is crucial. **Chief Complaint:** Understanding the primary reason for the patient's visit is essential. **Vital Signs:** Measuring and recording vital signs like heart rate, blood pressure, respiratory rate, temperature, and oxygen saturation provides baseline physiological data.

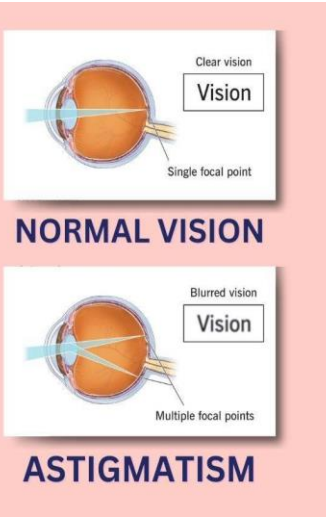
Physical Examination Techniques: **Inspection:** Observing the patient's general appearance, posture, skin, and any visible abnormalities. **Palpation:** Feeling the body with hands or fingers to assess temperature, texture, size, and location of organs or masses. **Percussion:** Tapping on specific areas of the body to produce sounds that help determine the size, shape, and location of organs or fluid-filled areas. **Auscultation:** Listening to sounds within the body, typically using a stethoscope, to assess heart, lung, and bowel sounds.

Specific Areas of Examination: **Head:** Examining the eyes, ears, nose, and throat. **Neck:** Assessing lymph nodes, thyroid gland, and jugular venous pressure. **Chest:** Listening to heart and lung sounds, palpating the chest wall, and assessing respiratory effort. **Abdomen:** Palpating the abdomen to assess for tenderness, masses, or organomegaly. **Musculoskeletal System:** Assessing range of motion, strength, and reflexes. **Neurological System:** Evaluating mental status, cranial nerves, reflexes, and sensory function. **Skin:** Examining the skin for rashes, lesions, or other abnormalities.

UNDERSTANDING ASTIGMATISM – A COMMON YET OVERLOOKED VISION ISSUE

One of the most common refractive defects in the world, astigmatism is frequently misdiagnosed and mistreated. Astigmatism, which is characterized by an uneven curvature of the cornea or lens, causes distortion of vision at all distances and can cause headaches, eyestrain, and blurred vision. Astigmatism is commonly disregarded or misinterpreted, despite its great frequency and propensity to affect quality of life.





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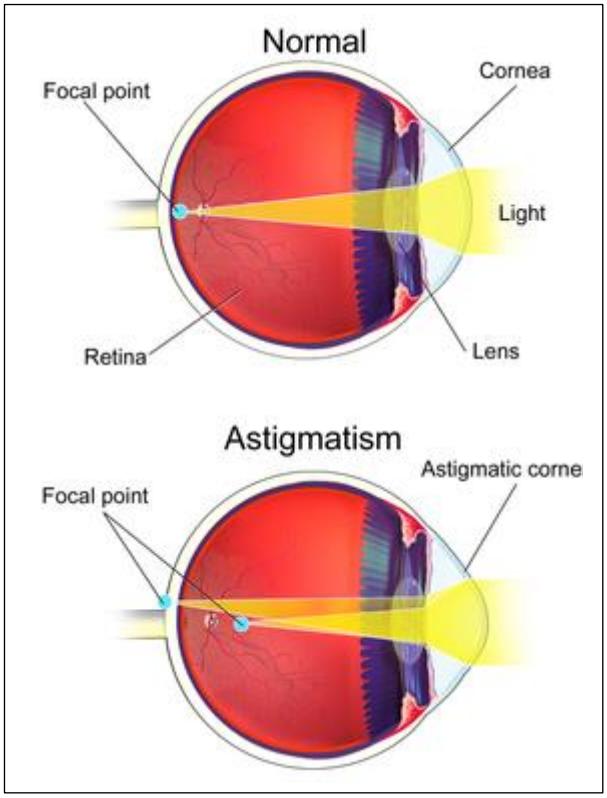

Consequences of Untreated Astigmatism: Amblyopia (Lazy Eye): Untreated astigmatism in children can lead to amblyopia, a disorder in which one eye weakens from inactivity. Chronic Headaches and Eye Strain: Extended visual pain can have an impact on general well-being and productivity. Night Vision Issues: Due to glare and halos around lights, untreated astigmatism frequently makes night vision issues worse when driving. Decreased Quality of Life: Reading, using computers, and playing sports can all be made more difficult by blurred or distorted vision.

Ways to Deal with Astigmatism: Astigmatism is very curable, which is excellent news. Make an appointment for routine eye exams. To identify astigmatism early, thorough eye exams are necessary. Refractive errors and corneal curvature are precisely measured by tests such as subjective refraction and auto refractor keratometry. Since children may not report vision issues, pediatric eye exams are especially crucial. Recognize Your Treatment Options. Glasses -The most straightforward and popular remedy. Contact lenses -Toric lenses provide a greater field of vision than glasses and are made especially for astigmatic eyes. Refractive surgery - For qualified patients, procedures such as LASIK permanently reshape the cornea to correct astigmatism. By prioritizing early detection and correction, individuals can prevent complications like amblyopia in children or chronic eyestrain in adults. Clear vision is not just a luxury—it's a necessity for a better quality of life.

LIST OF COMMON DRUGS AND THEIR ANTIDOTES

JOEANN MARYLIN WILSON
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NAME OF DRUG	ANTIDOTE
Acetaminophen	N-acetylcysteine
Warfarin	Vitamin K
Cyanide	Hydroxocobalamin or Sodium thiosulfate
Benzodiazepines	Flumazenil
Iron	Deferoxamine
Lead	EDTA, BAL
Ethylene glycol	Fomepizole or Ethanol
Magnesium sulphate	Calcium gluconate
Morphine	Naloxone
Caffeine	Esmolol
Beta blockers	Glucagon
Cholinesterase inhibitors	Atropine, Pralidoxime
Heparin	Protamine sulphate
Isoniazid	Pyridoxine
Iron salts	Deferoxamine
Salicylates (Aspirin)	Activated Charcoal, Sodium bicarbonate
Quinidine	Sodium bicarbonate
Calcium channel blockers	Glucagon, Calcium
Dopamine	Phentolamine
Fluorouracil	Leucovorin calcium
Methotrexate	Leucovorin calcium
Tricyclic antidepressants	Sodium bicarbonate
Potassium overdose	Insulin + Glucose, Calcium gluconate
Chloroquine	Diazepam
Amphetamines	Benzodiazepines
Arsenic	Dimercaprol (BAL)
Methanol	Fomepizole, Ethanol
Hydrofluoric acid	Calcium gluconate
TCA (Tricyclics)	Sodium bicarbonate
Clonidine	Naloxone
Dapsone	Methylene blue
Thallium	Prussian blue
Copper	Penicillamine
Zinc	Chelation (EDTA)
Mercury	Dimercaprol
Insulin	Glucose
Nitrates	Methylene blue
Valproic acid	L-carnitine

A CASE ON GOLDENHAR SYNDROME

Goldenhar syndrome (Oculo-Auriculo-Vertebral Spectrum) is a rare congenital condition. The syndrome involves malformations primarily affecting structures derived from the first and second branchial arches, leading to facial asymmetry, ear anomalies, ocular defects, and vertebral malformations. The etiology of Goldenhar syndrome remains uncertain, although genetic and environmental factors are thought to contribute to its development.

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Goldenhar Syndrome, or Oculo-Auriculo-Vertebral Spectrum, is a rare congenital disorder characterized by craniofacial anomalies, ear deformities, ocular defects, and vertebral malformations. This report presents a complex case of a patient diagnosed with Goldenhar syndrome, exhibiting multiple craniofacial abnormalities, including ear tags, a displaced lower jaw, and a mass in the right eye. Laboratory findings revealed low hematological parameters. At three years, the patient underwent bilateral mandibular distraction to correct the jaw deformity and improve airway function. Postoperatively, airway complications led to the need for a tracheostomy. The patient was discharged with a multidisciplinary care plan, including pediatric surgery, ophthalmology, and otolaryngology. Medications included antibiotics, multivitamins, gastroprotective agents, and nebulized bronchodilators. This case highlights the importance of coordinated, long-term management for individuals with Goldenhar syndrome.

A corneal surgeon suggested patching the left eye (LE) for two hours to treat amblyopia on the right eye tumor after a one-year follow-up. Given the patient's condition at three years, the surgeon performed a general anesthetic procedure called bilateral mandibular distraction in order to address the lower jaw deformity and enhance airway patency. The procedure went well, and there were no immediate complications throughout the recovery phase. But after being taken out of the air, the patient became unwell and needed a tracheostomy. A bronchoscopy identified an obstruction of the upper airway. With orders for further care and a tracheostomy, the patient was discharged from the hospital.

Medications:

Syrup Taxim-O Forte (Cefixime) 100 mg/5 ml, for 5 days
Syrup A to Z (multivitamin), to be taken as per instructions
Tablet Junior Lanzol (Lansoprazole), for 5 days
Nebulization with Budecort (Budesonide) 0.5 mg
Duolin (Ipratropium bromide and Salbutamol) as needed, for 5 days

BLOOD DONATION AND HEALTH CAMP

Blood Donation Camp was conducted at Krupanidhi College of Pharmacy and we invited all students, faculty, and staff to participate in this noble cause. Blood donations are vital for saving lives and ensuring that hospitals are well-equipped to handle emergencies, surgeries, and medical treatments. Krupanidhi College of Pharmacy organized a free health camp in partnership with MVJ Medical College and Research Hospital at the college campus.

Organized by Pharm D Department, Krupanidhi College of Pharmacy, On 28th MARCH 2025

Blood donation camp was conducted as donating blood is a simple and selfless act that can make a significant difference to those in need. Blood donation Save Lives: A single blood donation can save up to three lives. Blood donations are crucial for patients undergoing surgery, cancer treatments, and those in emergency situations like accidents. By donating blood, you contribute to maintaining a steady supply of blood in local hospitals and clinics, ensuring that those in need receive timely treatment. Personal Health Benefits: Donating blood has been shown to have health benefits, including improving circulation, reducing the risk of certain diseases, and stimulating the production of new blood cells. A Simple Act of Kindness: Donating blood is an easy way to help others without requiring a lot of time or effort and we invited all students, faculty, and staff to participate in this noble cause.

Health Camp was conducted to offer free medical check-ups, screenings, and consultations. We emphasized on preventive healthcare measures and health education. We involved students in organizing and assisting with the event. Common check-ups included blood pressure, blood sugar, and other basic health parameters. Health Education: sessions on hygiene, nutrition, and disease prevention. Targeted Outreach: was organized for specific groups, like students, faculty, and even the local community. To provide accessible and often free eye care services, including screenings, check-ups, and potentially treatment or referrals, to students and the wider community, raising awareness about eye health and promoting early detection of vision problems. To provide services in the diagnosis and treatment of ear, nose, throat, and head and neck disorders. To provide comprehensive healthcare for women and encompassing the prevention, diagnosis, and non-surgical treatment of a wide range of diseases.

MELASMA UNCOVERED – TRIGGERS, PREVENTIVE MEASURES AND TREATMENT

Melasma is a common skin condition characterized by brown or gray-brown patches on the face, primarily affecting areas such as the cheeks, forehead, and upper lip. While melasma can affect individuals of any skin type, it is most prevalent in women, particularly those with darker skin tones.

SHANILA THANKAM SURESH
PHARM D INTERN

Triggers: Hormonal Changes: Fluctuations in hormones especially estrogen and progesterone can significantly contribute to the development of melasma. This is why pregnant women (often referred to as a "mask of pregnancy"), those taking oral contraceptives, or undergoing hormone replacement therapy may be more prone to the condition. Sun Exposure: Ultraviolet (UV) radiation from the sun is one of the most well-known triggers of melasma. UV light stimulates the production of melanin, the pigment responsible for skin color, leading to hyperpigmentation. Skin Irritation: Certain skincare products, exfoliants, or chemical peels can irritate the skin and may trigger melasma flare-ups. Other Factors: Stress, thyroid dysfunction, and certain medications can also contribute development of melasma. **Lifestyle and Preventive Measures:** Avoiding Sun Exposure: Limit outdoor activities during peak sunlight hours and wear a wide-brimmed hat and sunglasses. - Using Gentle Skincare Products: Opt for fragrance-free and non-comedogenic products to minimize irritation. Routine Skin Assessments: Regular check-ups with a dermatologist can help monitor the condition.

Treatment: 1. Topical Treatments: Tretinoin: A prescription-strength retinoid that promotes skin cell turnover, helping to fade dark patches. - Azelaic Acid: Known for its anti-inflammatory and skin-lightening properties, this is effective for treating melasma without the irritation that some other treatments may cause. - Kojic Acid: A natural product derived from fungi, it is often used to lighten skin and can be effective in reducing melasma.

2. Chemical Peels - Superficial chemical peels using glycolic acid or salicylic acid can help exfoliate the skin and reduce hyperpigmentation. Multiple sessions may be necessary for optimal results.

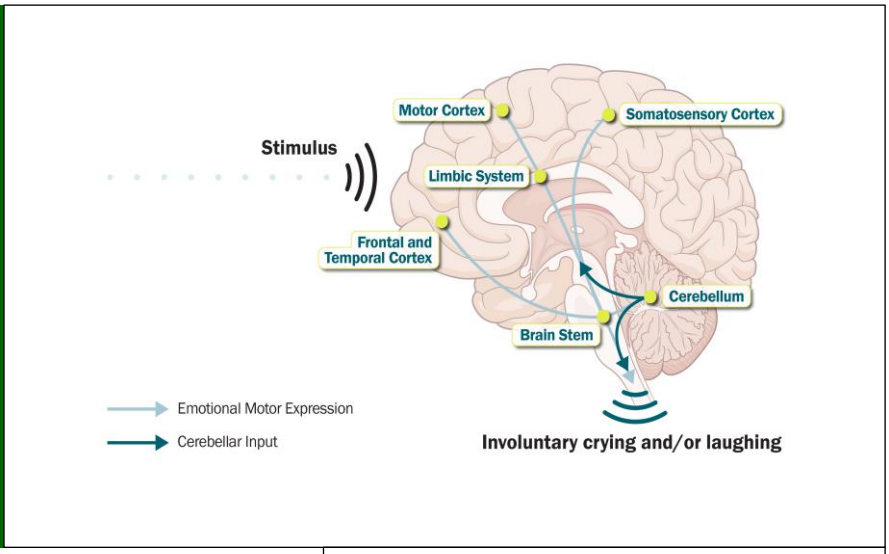
3. Laser and Light Therapy: - Certain laser treatments, such as fractional lasers or intense pulsed light (IPL), can target melasma by breaking down melanin in the skin. However, proper selection and protocol are essential to prevent exacerbation of the condition.

4. Microdermabrasion: - A minimally invasive procedure that may help improve the appearance of melasma by exfoliating the outer layer of skin and promoting collagen production.

5. Sun Protection: - Daily use of broad-spectrum sunscreen with an SPF of 30 or higher is crucial for preventing melasma from worsening. Protective clothing and seeking shade are also recommended.

NUEDEXTA APPROVED FOR THE TREATMENT OF PSEUDOBULBAR AFFECT

Nuedexta is a medication containing dextromethorphan and quinidine, is approved by the FDA to treat pseudobulbar affect (PBA), a condition characterized by sudden, uncontrollable episodes of crying or laughing. It helps reduce the frequency and severity of PBA episodes, improving the quality of life for individuals with certain neurological conditions or brain injuries.



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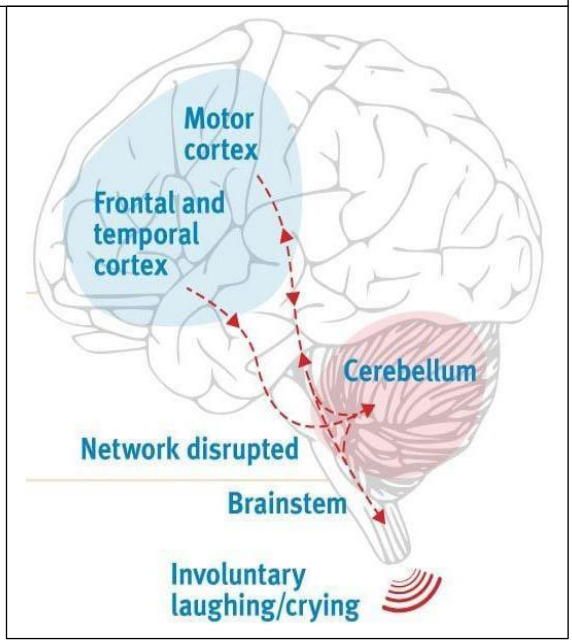

What is Pseudobulbar Affect (PBA)?
PBA is a neurological disorder that causes involuntary, sudden, and frequent outbursts of crying and/or laughing, often disproportionate to the situation. It can occur in people with various neurological conditions or brain injuries, such as multiple sclerosis, stroke, traumatic brain injury, and amyotrophic lateral sclerosis (ALS). Episodes can be embarrassing and can lead to social isolation and withdrawal.

How Nuedexta Works:
Nuedexta is a combination medication containing dextromethorphan (a cough suppressant) and quinidine (a drug used to treat cardiac arrhythmias). Dextromethorphan is thought to help modify brain signals that affect mood and emotions, while quinidine helps to increase the bioavailability of dextromethorphan. Nuedexta is thought to help normalize the activity of neurotransmitters in the brain, reducing the symptoms of PBA. Studies have shown that Nuedexta can significantly reduce the number and severity of PBA episodes.

Benefits of Nuedexta:
Reduced PBA Episodes: Studies have shown that Nuedexta reduces the frequency and severity of PBA episodes.
Improved Quality of Life: By reducing PBA episodes, Nuedexta can help individuals with PBA to participate more fully in social activities and improve their overall quality of life.
FDA Approved: Nuedexta is the only medication specifically approved by the FDA for the treatment of PBA.

TB POTT'S SPINE IN A MALE PATIENT WITH PARAPLEGIA- A CASE REPORT

Pott's disease is a form of spondylodiscitis caused by mycobacterium tuberculosis. It is a serious form of spinal infection that can lead to terrible disabilities in case of undiagnosed and must be treated early. This report details the case of a patient with undiagnosed spinal tuberculosis in a 70-year-old man, K/C/O Type 2 diabetes mellitus, Systemic hypertension and CKD on Maintenance Haemodialysis who had complained of lower back pain over the course of several months.

Dr. K. KRITHIKA
JUNIOR RESIDENT

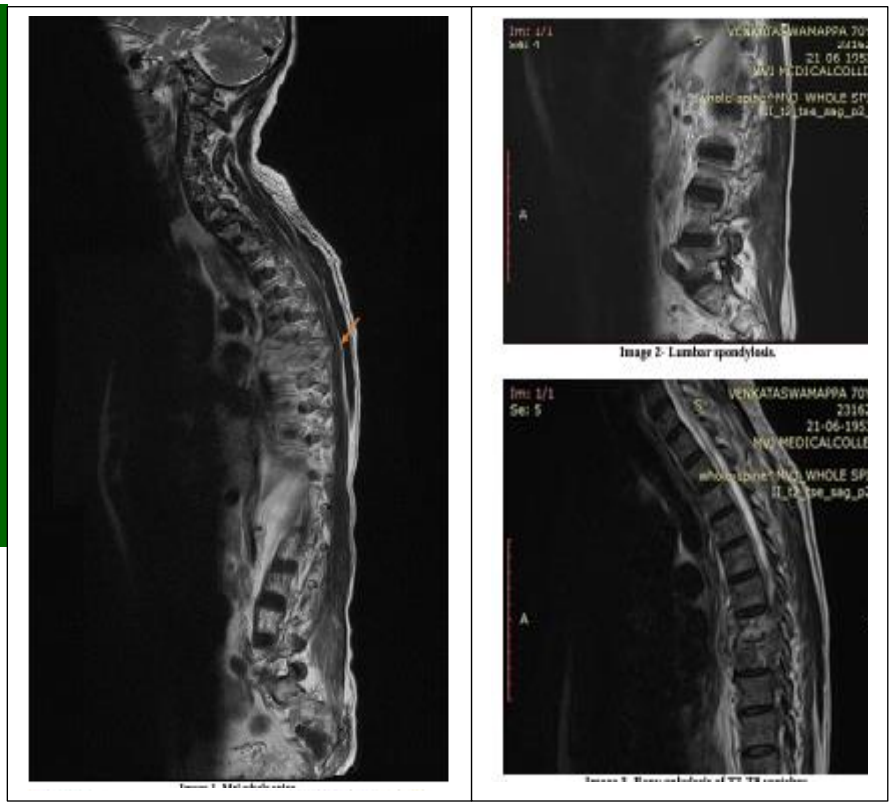

Image 2- Lumbar spondylosis.

Findings on MRI whole spine

1. Bony ankylosis of T7-T8 vertebra with complete loss of intervening disc space with focal area of altered signal intensity with a small pre/para vertebral collection seen anterior and lateral to vertebra, appears to be tracking from bone at this level -suggestive of tubercular etiology/pott's spine. 2. Diffuse osteopenia 3. Lumbar spondylosis 4. Mild disc bulge with anterior disc osteophyte complex at l2-l3 disc level causing mild anterior thecal sac indentation. 5. Diffuse disc bulge with central disc protrusion l4-l5 disc level causing anterior thecal sac indentation and narrowing of bilateral lateral recesses and neural foramina causing indentation of bilateral traversing nerve roots and bilateral exiting nerve roots. 6. Mild diffuse disc bulge at l5-s1 disc level causing anterior thecal sac indentation and mild narrowing of bilateral lateral recesses and neural foramina causing indentation of bilateral exiting nerve roots.

CONCLUSION: Primary tuberculosis with Osseo-articular involvement, including the spine, is a rare phenomenon. In the presented case, Pott's disease initially masked itself as a simple back pain. Treatment was started based on high clinical suspicion of TB, plus MRI characteristic findings. Early identification and prompt treatment enhance the prognosis for spinal TB. Even in the absence of neurological symptoms and indications, individuals who appear to have persistent back pain must be viewed with a high degree of clinical suspicion. Medical treatment is generally effective. However, MDR/XDR TB is increasing and should be identified early by using molecular methods to diagnose spinal TB and drug resistance. Advanced cases with significant bone involvement, abscess development, or paraplegia require surgical intervention. The only strategy to avoid spinal TB is to stop the spread of the disease.

DRUG SAFETY ALERT

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Series-30

PHARMACOVIGILANCE UNIT, KMCHIHSR

DRUG SAFETY ALERT

MARCH– 2025

Indian Pharmacopoeia Commission (IPC) after the preliminary analysis of Adverse Drug Reactions (ADRs) from the PvPI database reveals that the following suspected drug is associated with the ADR as given below.

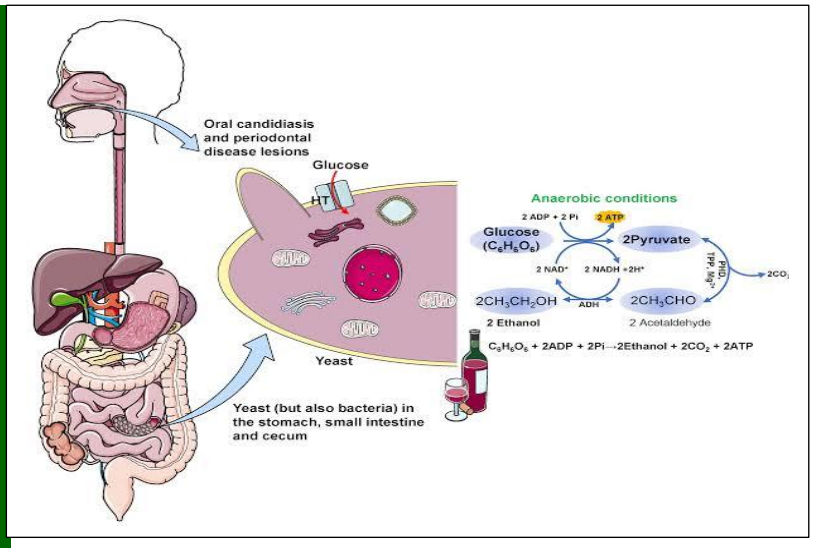
S.NO	SUSPECTED DRUG	INDICATIONS	ADVERSE DRUG REACTION
1	Metronidazole	Amoebiasis, urogenital trichomoniasis & giardiasis.	Acute Generalised Exanthematous Pustulosis (AGEP)
2	Luliconazole	For the treatment of cutaneous mycosis viz. Tinea pedis, Tinea corporis and Tinea cruris.	Chloasma/Melasma
3	Dalteparin	Symptomatic Venous Thromboembolism (VTE) proximal Deep Vein Thrombosis (DVT) and/or Pulmonary Embolism (PE) to reduce the recurrence of VTE in patients with cancer.	Muscle spasms
4	Gliclazide	Diabetes without or with obesity in adults	Erythema multiforme
5	Tramadol	For the treatment of severe acute and chronic pain, diagnostic measures and surgical pain.	Fixed Drug Eruption

Healthcare Professionals, Patients/Consumers are advised to closely monitor the possibility of the above ADR associated with the use of above suspected drug. If, such reaction is encountered, please report to the Pharmacovigilance unit, KMCHIHSR via **Email (pharmacovigilance@kmchihsr.edu.in) /Landline No (04226806808).**

Click on the below link to find the list of Monthly Drug Safety Alerts from Mar 2016 to Till date: https://www.ipc.gov.in/images/List_of_Drug_Safety_Alerts_issued_by_PvPI_IPC_till_date.pdf

Auto Brewery Syndrome- a rare medical condition

Auto-Brewery Syndrome (ABS) is a rare and intriguing medical condition where the body produces alcohol internally, without consuming alcoholic beverages. It occurs when the bacteria or fungus in the urinary, oral or gastrointestinal tract ferment endogenously, producing ethanol. Patients with auto brewery syndrome frequently report eating a diet heavy in sugar and carbohydrates and exhibit many of the symptoms and indicators of alcohol in toxication while disrupting alcohol consumption.



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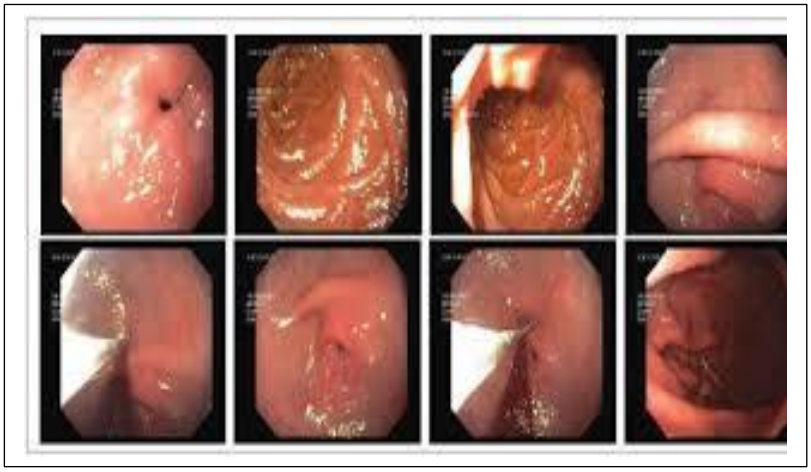
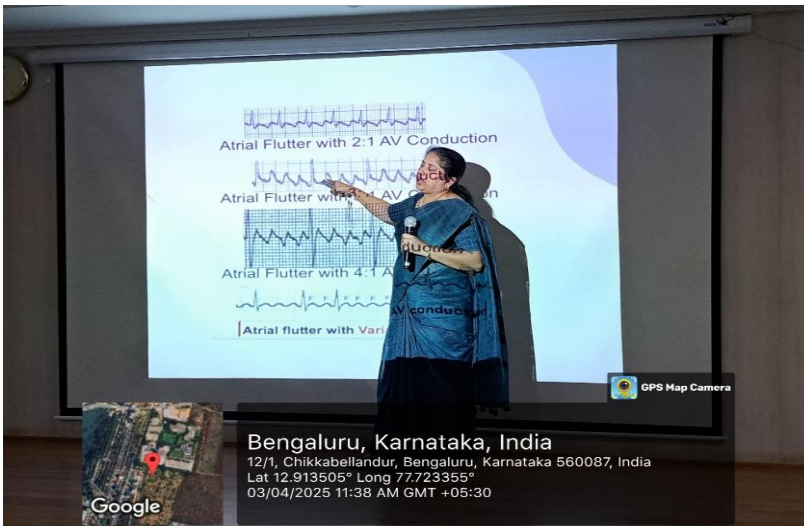


CAUSES: One of the main causes is an imbalance in the gut microbiota, often triggered by prolonged or repeated use of antibiotics, which can reduce normal bacterial populations and allow yeast to thrive. A high-carbohydrate or high-sugar diet further fuels this fermentation process, providing a continuous source of substrates for ethanol production. Other contributing factors include underlying gastrointestinal conditions such as Crohn's disease, short bowel syndrome, or impaired gut motility, all of which can create an environment favorable for microbial overgrowth. Additionally, immune suppression, liver dysfunction, and genetic predisposition may play roles in the development of this syndrome, making it more likely for ethanol to be produced and absorbed into the bloodstream at significant levels.

TREATMENT: Auto-brewery syndrome with drugs focuses primarily on eliminating the overgrowth of fermenting organisms in the gut. Antifungal medications are commonly prescribed when yeast is identified as the cause. Drugs like fluconazole, itraconazole, or nystatin are often used to suppress or eradicate the yeast. In some cases, especially when bacterial overgrowth is suspected, antibiotics may be used, although they are prescribed cautiously to avoid worsening the imbalance of gut flora. Additionally, antioxidants and supplements, such as vitamin C, may help alleviate symptoms and support overall health. Medications that improve gastrointestinal motility, such as metoclopramide, may also be used to help manage symptoms. Alongside these, probiotics may be introduced after antifungal therapy to help restore healthy gut microbiota and prevent recurrence. The duration and type of medication depend on the severity of the symptoms and the specific organism involved, and treatment is usually combined with dietary changes to ensure lasting improvement.

Training program on Interpretation of ECG

ECG interpretation involves analyzing the heart's electrical activity to detect abnormalities like arrhythmias, heart attacks, or conduction issues, by examining the waves, intervals, and rhythm of the ECG tracing. The process involves analyzing the ECG's waveforms (P, QRS, T) and intervals (PR, QRS, QT) to determine the heart's rhythm, rate, and conduction.



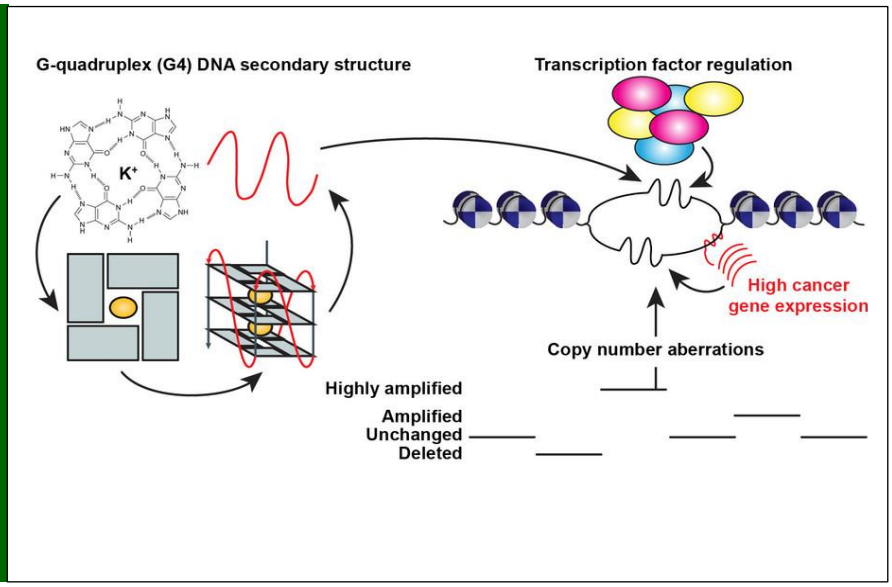
Organized by Pharm D Department, Krupanidhi College of Pharmacy, On 03rd APRIL 2025

Common ECG Findings and Their Significance: **Arrhythmias:** Irregular heartbeats, including bradycardia (slow heart rate), tachycardia (fast heart rate), and various other types of arrhythmias. **Conduction Abnormalities:** Problems with the electrical signals traveling through the heart, such as heart blocks or bundle branch blocks. **Ischemia and Infarction:** Changes in the ST segment and T wave that can indicate a lack of blood flow to the heart muscle or a heart attack. **Chamber Hypertrophy:** Enlargement of the heart chambers, which can be detected by specific ECG patterns. Importance of ECG in Diagnosis: ECG is a valuable tool for diagnosing and monitoring various cardiac conditions. It helps healthcare professionals identify arrhythmias, heart attacks, and other abnormalities. ECG findings can guide further diagnostic tests and treatment decisions.

Steps in ECG Interpretation: **Rate:** Determine the heart rate (normal range is 60-100 bpm). **Rhythm:** Assess the regularity of the heartbeats and identify any abnormalities. **Axis:** Determine the electrical axis of the heart (normal range is 0-90 degrees). **Intervals:** Measure and analyze the PR, QRS, and QT intervals. **P wave:** Evaluate the morphology, presence, and relationship of the P wave to the QRS complex. **QRS complex:** Assess the morphology, duration, and presence of any abnormalities. **ST segment and T wave:** Evaluate any abnormalities in these segments, which can indicate ischemia or infarction. **Overall interpretation:** Synthesize all findings and determine if there are any abnormalities and their potential significance.

G- Quadruplexes 'A target for new cancer therapies'

Four-stranded DNA structures, specifically G-quadruplexes (G4s), are emerging as a promising target for new cancer therapies, particularly in breast cancer, due to their presence in oncogenic promoters and telomeres, allowing for potential downregulation of transcription or blocking of telomere elongation.



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G-quadruplexes (G4s) are non-canonical four-stranded nucleic acid secondary structures formed by the stacking of two or more guanine quartets (G-quartets).

Why are they important in cancer?

G4 structures are found within most human oncogenic promoters and at telomeres, making them potential targets for cancer therapy. They are more likely to occur in genes of cells that are rapidly dividing, such as cancer cells. Researchers have identified an increase in G4 structures at a crucial point in DNA replication in human cancer cells, suggesting they could be a new target for cancer drugs.

Applications: G-quadruplexes as novel targets for the treatment of gastrointestinal cancers.

Potential Therapeutic Strategies: Downregulating transcription: G4 structures can be targeted to downregulate the expression of oncogenes, which are genes that can cause cancer.

Blocking telomere elongation: G4 structures are present at telomeres, the ends of chromosomes, and targeting them could potentially block telomere elongation, which is essential for cancer cell survival.

Personalized medicine: The unique patterns of G-quadruplexes in different breast cancer subtypes could help in identifying the specific subtype and offering personalized treatments.

Synthetic molecules: Researchers have identified synthetic molecules, like pyridostatin and CX-5461, that can target G-quadruplexes and prevent cell replication and division, potentially halting cancer growth.

G-quadruplexes are novel targets for the treatment of esophageal cancer, pancreatic cancer, hepatocellular carcinoma, gastric cancer, colorectal cancer, and gastrointestinal stromal tumors, as well as the associated challenges.

An overview of ethylene and diethylene glycols poisonings, treatment and management

The National Agency for Food and Drug Administration and Control (NAFDAC) with this write-up aims to give a brief overview of ethylene and diethylene glycol poisoning and describe treatment and management strategies following incessant cases of infant and child mortality resulting from presence of these contaminants in pediatric remedies as reported by WHO and other regulatory bodies across the globe.

Dr. SURABHI K S
ASSISTANT PROFESSOR

Toxic Effect of Ethylene glycol and Diethylene Glycol Ingestion

Ethylene glycol and diethylene glycol are toxic to human health, there harmful effect may result in coma, seizures, metabolic acidosis and renal failure. Both are rapidly absorbed following ingestion, which is the predominant route of exposure. Ingestion of the glycols lead to systemic toxicity beginning with CNS effects, followed by cardiopulmonary effects, and finally renal failure. The progression of toxic effects can be roughly divided into the following three stages, although overlap is possible. The first phase consists of gastrointestinal symptoms with evidence of inebriation and developing metabolic acidosis. If poisoning is pronounced, patients can progress to a second phase with more severe metabolic acidosis and evidence of 2 emerging renal injuries, which, in the absence of appropriate supportive care, can lead to death.

Treatment and Management

Initial treatment consists of appropriate airway management through assisted ventilation while giving attention to acid-base abnormalities.

Prompt use of fomepizole or ethanol is important in preventing the formation of the toxic metabolite HEAA; (N-(2-Hydroxyethyl) acrylamide). Hemodialysis can also be critical. Persons who have swallowed large amounts of ethylene glycol or diethylene glycol should be hospitalized. Treatment is generally successful if begun within 3 hours of exposure, and most people recover completely after treatment. Once severe acidosis and renal failure have occurred, however, hemodialysis is necessary. Traditional treatment consists of administration of sodium bicarbonate to temporarily correct the metabolic acidosis, ethanol, and hemodialysis.

Fomepizole is a new agent with a specific indication by the U.S. Food and Drug Administration for the treatment of ethylene glycol poisoning. Ethanol and fomepizole are thought to act as inhibitors of alcohol dehydrogenase and therefore prevent the formation of acidic ethylene glycol metabolites, but only fomepizole has demonstrated this ability. Fomepizole treatment should be initiated immediately when ethylene glycol poisoning is suspected. Within three hours of initiating therapy with fomepizole, inhibition of metabolite production and resolution of acidosis occurs, and the anion gap is normalized within four hours.

FDA Novel Drug Therapy Approvals for 2025

SUMAN SHEELI
PHARM D INTERN

SL NO	DRUG NAME	ACTIVE INGREDIENT	APPROVAL DATE	FDA – APPROVED USE ON APPROVAL DATE
1	DATROWAY	Datopotamab deruxtecan-dlnk	1/17/2025	To treat unresectable or metastatic, HR-positive, HER2-negative breast cancer who have received prior endocrine-based therapy and chemotherapy for unresectable or metastatic disease
2	GRAFAPEX	Treosulfan	1/21/2025	For use in combination with fludarabine as a preparative regimen for allogeneic hematopoietic stem cell transplantation for acute myeloid leukemia and myelodysplastic syndrome
3	JOURNAVX	Suzetrigine	1/30/2025	To treat moderate to severe acute pain
4	GOMEKLI	Mirdametinib	2/11/2025	To treat neurofibromatosis type 1 who have symptomatic plexiform neurofibromas not amenable to complete resection
5	ROMVIMZA	Vimseltinib	2/14/2025	To treat symptomatic tenosynovial giant cell tumor for which surgical resection will potentially cause worsening functional limitation or severe morbidity
6	BLUJEPA	Gepotidacin	3/25/2025	To treat uncomplicated urinary tract infections
7	QFITLIA	Fitusiran	3/28/2025	To prevent or reduce the frequency of bleeding episodes in hemophilia A or B

Events Conducted at Krupanidhi College of Pharmacy

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