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Table of Contents

Contents	Page No.
From the Chief Editors Desk Dr. Bobby Johns G	5
The President Speaks Dr. PK Sreekumar	6
Scientific Session	
Cutting-edge strategies to combat antimicrobial resistance- super solutions for superbugs Biona Benny, Jeny Samuel	7
Stem cell transplantation for HIV Sowparnika Treasa Sabu	9
Short- lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) Adarsh Unni, Vivian Dsouza	12
Mindset-the biggest obstacle to learning Kala D Mohan	15
Activities & News	
Kerala Pharmaceutical Congress -2023 Dr. K Krishnakumar, Dr. Nishith MC	17
Gallery	18
Upcoming Events	21



Prof. Dr. **Boby Johns G**

From The Chief Editor's Desk



Dear readers,

We are thrilled to present the April 2023 issue of Pharmline, the official publication of the Kerala Pharmacy Graduates Association (KPGA), following the resounding success of the Kerala Pharmacy Congress 2023 held at St. James College of Pharmaceutical Sciences, Chalakudy. This event marked a significant milestone in our journey as a professional association, bringing together pharmacy graduates from across Kerala and India to foster collaboration, knowledge exchange, and professional development.

The Kerala Pharmacy Congress 2023 served as a dynamic platform for our members to showcase their talents, research, and innovations in the field of pharmacy. The congress provided a rich and engaging environment for participants to network, share insights, and explore emerging trends and advancements. We extend our deepest appreciation to the organizers, speakers, presenters, and participants for their invaluable contributions in making this event a grand success.

In line with our commitment to empowering pharmacy graduates, we are proud to announce the initiation of the Student Project Funds-2023, the first of its kind by any private pharmacy association. This initiative aims to support and promote innovative research projects among pharmacy students across Kerala. Through these funds, we strive to foster a culture of inquiry, critical thinking, and evidence-based practice among future pharmacy professionals, enabling them to contribute meaningfully to the advancement of healthcare and pharmaceutical sciences. We encourage all eligible students to apply and take advantage of this unique opportunity to turn their research ideas into reality.

The April 2023 issue of Pharmline celebrates the achievements of the Kerala Pharmacy Congress 2023 and the launch of the Student Project Funds. We extend our heartfelt gratitude to all those who have played a role in making these initiatives a success.

As we move forward, the KPGA remains dedicated to elevating the pharmacy profession and uplifting our members to new heights. Through events like the Kerala Pharmacy Congress and initiatives like the Student Project Funds, we aim to empower tomorrow's pharmacists, shaping a brighter future for healthcare in Kerala and beyond. Together, let us continue to nurture excellence, foster innovation, and empower pharmacy graduates for a dynamic and impactful future in the pharmaceutical profession.

Warm regards,

Prof. Dr. **Boby Johns G**
Chief Editor - Pharmline

The President Speaks



Dr. PK Sreekumar

Dear Fellow Pharmacists,

Greetings!

It brings me great pleasure to once again share this message on the esteemed platform of Pharmline. Firstly, I extend my heartfelt congratulations to the entire pharmaceutical fraternity, particularly the organizing committee members, for the tremendous success of The Kerala Pharmaceutical Congress held on 25th and 26th February 2023 at St. James College of Pharmaceutical Sciences, Chalakudy. This event marked a significant milestone as the first of its kind in Kerala, with the theme "A Self-Reliant Pharma Industry for the Future of Pharmacy in Kerala."

The two-day congress provided an optimistic platform that united government officials, industry experts, distinguished scholars, research scientists, and all other segments of the pharmaceutical sector. Together, they exchanged innovative ideas and devised practical plans, bringing us closer to the realization of a self-reliant Pharma sector in Kerala. With over 2000 attendees, the conference ensured that participants stayed updated on the latest advancements and innovations in the Pharma sector.

I firmly believe that the unwavering support, love, and blessings of our seniors, peers, and aspiring pharmacists are instrumental in the growth and prosperity of KPGA. Once again, I express my gratitude to all those who contributed to this remarkable achievement."

After the resounding success of our recent conference, we are thrilled to announce our latest venture: the introduction of a pioneering initiative "Student Project Funding." This groundbreaking project sets a precedent as the first of its kind initiated by a private pharmacy organization in Kerala. KPGA is dedicated to empowering pharmacy students and graduates by offering resources and support. We strongly believe that empowering pharmacy students is a crucial step towards advancing our profession. To further our mission, KPGA has introduced a student project funding scheme. Through this scheme, KPGA will provide financial support to projects that are well-conceived, feasible, and have the potential to make a significant impact on society. The maximum funding available per project this year is INR 5000. We are confident that this project funding program will inspire and empower our aspiring pharmacy students to generate innovative ideas for the betterment of our community and our nation. We kindly request your continued support and encouragement in this endeavour.

Sincerely,

Dr. PK Sreekumar,
President - KPGA

CUTTING-EDGE STRATEGIES TO COMBAT ANTIMICROBIAL RESISTANCE- SUPER SOLUTIONS FOR SUPERBUGS

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ABSTRACT

Innovative strategies are needed to get over this challenge since antibiotic resistance continues to be a serious danger to world health. Innovations in antibiotic research recently offer optimism for the future. Researchers are pursuing a variety of strategies to address antibiotic resistance, from the development of new antibiotics to combination therapy. The effectiveness of antibiotics must be maintained by ongoing research and development as well as proper antibiotic management.

Keywords: Anti microbial resistance, combination therapy, fage therapy, antibiotic stewardship

Introduction

Antimicrobial resistance has surfaced as a critical worldwide health concern, placing the efficacy of antibiotics, the most valuable medical asset, at risk. Over the years, the misuse and overuse of antibiotics have led to the development of drug-resistant bacteria, rendering many treatments ineffective. However, the scientific community has been actively engaged in researching innovative solutions to combat antibiotic resistance. In this article, we explore some of the most promising breakthroughs in recent research aimed to curb this critical issue¹

Development of New Antibiotics

The discovery and creation of novel antibiotics is one of the main strategies in the fight against antibiotic resistance. To find new antibiotic molecules, researchers have been actively examining untapped sources like soil, deep-sea sediments, and even the microbiomes of insects. Using machine learning algorithms, MIT and McMaster University have identified a new antibiotic that can kill a type of bacteria that is responsible for many drug-resistant infections in 2023. If developed for use in patients, the drug could help to combat *Acinetobacter baumannii*, a species of bacteria that is often found in hospitals and can lead to pneumonia, meningitis, and other serious infections. This finding further supports the premise that AI can significantly accelerate and expand our search for novel antibiotics².

In 2021 MIT researchers found "halicin", a promising

variety of antibiotic-resistant bacteria, including ones that are multi-antibiotic resistant. These findings raise the possibility of novel therapeutic approaches in the fight against antibiotic resistance.

Combination Therapies

Another approach gaining traction in recent years is combination therapies. Scientists have been investigating the potential benefits of combining existing antibiotics with non-antibiotic drugs. Combination therapies work by targeting multiple pathways in bacteria, reducing the likelihood of resistance development and increasing treatment effectiveness³.

For example: synergy between polymyxin and carbapenems or rifampicin can efficiently suppress the development of polymyxin resistance.

In pipe line

Cadazolid is a stable hybrid of a quinolone and oxazolidinone and currently in phase III clinical trials for the treatment of *Clostridium difficile* infections. It primarily inhibits translation but also topoisomerase activity and shows low resistance development rates⁴.

Cefilavancin is a stable hybrid molecule of vancomycin and a third-generation cephalosporin, which is currently undergoing phase III clinical trials for complicated skin and soft tissue infections. This hybrid compound is active against both methicillin and vancomycin-resistant *Staphylococcus aureus*, yet it has not been verified to which extent it inhibits lipid II

and PBPs⁵

Repurposing antibiotics

A combination of antibiotics and non-antibiotic compounds that could inhibit bacterial resistance determinants or enhance antibiotic activity offers a sustainable and effective strategy to confront multidrug-resistant bacteria in the scenario where developing an effective new drug is taking decades. A new study has found that the drug fomepizole – already approved by the US Federal Drug Administration (FDA) to treat methanol poisoning – can help to treat antibiotic-resistant pneumonia in mice. The research is published in PLOS Biology. The researchers conducted experiments using mice inoculated with a multidrug-resistant *S. pneumoniae* strain to model pneumonia. They found that fomepizole was effective at blocking the bacteria's energy production. The treatment also made the bacteria more sensitive to the antibiotic erythromycin when given in combination, reducing the burden of bacteria in the mice's lungs and preventing the disease from becoming more invasive⁶.

Phage Therapy and CRISPR system

Phage therapy, which utilizes bacteriophages (viruses that infect bacteria), has re-emerged as a potential solution to combat antibiotic-resistant infections⁷. Researchers have been exploring the use of phage therapy for a range of bacterial infections, including multidrug-resistant strains like Methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile*. The revolutionary gene-editing tool CRISPR-Cas system has been gaining attention for its potential in combating antibiotic resistance. Researchers are exploring the use to selectively target and disable genes responsible for antibiotic resistance in bacteria.

While further research is needed to refine and standardize these methods it holds promise as a targeted and effective alternative to traditional antibiotics⁸.

Conclusion

Antibiotic resistance remains a significant threat to global health, necessitating innovative approaches to overcome this hurdle. Recent breakthroughs in antibiotic research provide hope for the future. From the discovery of novel antibiotics to combination

therapies researchers are exploring diverse terrains to combat antibiotic resistance. Continuous research and development, alongside with responsible antibiotic stewardship remains crucial in preserving the efficacy of antibiotics for the future.

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Cutting-edge strategies to combat antimicrobial resistance- Super solutions for superbugs

STEM CELL TRANSPLANTATION FOR HIV

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Introduction

HIV, which stands for Human Immunodeficiency Virus, is a viral infection that attacks the immune system, specifically targeting CD4 cells, a type of white blood cell that plays a crucial role in fighting off infections. Over time, HIV progressively weakens the immune system, making the infected individual more susceptible to various infections and diseases. Here are some key points about HIV.

Transmission

HIV is primarily transmitted through certain body fluids, including blood, semen, vaginal fluids, and breast milk. The most common modes of transmission are unprotected sexual intercourse, sharing needles or syringes for drug use, and transmission from an HIV-positive mother to her child during pregnancy, childbirth, or breastfeeding. It is important to note that HIV is not transmitted through casual contact, such as hugging, shaking hands, or using the same toilet.

HIV Infection

When HIV enters the body, it replicates and attacks CD4 cells, gradually depleting their numbers. As the immune system weakens, individuals may experience flu-like symptoms in the early stages of infection, but some people may remain asymptomatic for many years. Without treatment, HIV infection can progress to AIDS (acquired immunodeficiency syndrome), which is the final stage of the disease.

Diagnosis

HIV infection is diagnosed through blood tests that detect antibodies or antigens associated with the virus. It is important to get tested if you believe you may have been exposed to HIV, as early diagnosis can lead to timely treatment and better health outcomes.

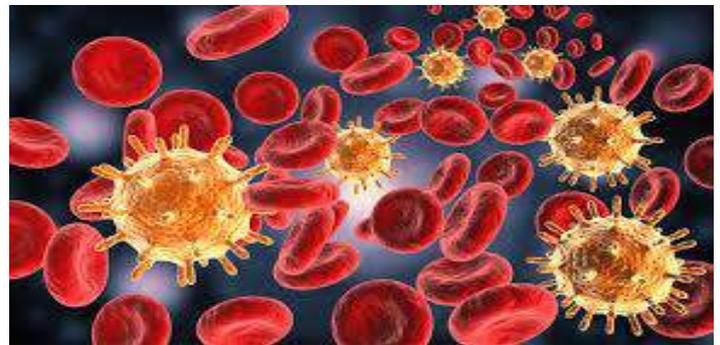
Treatment

Antiretroviral therapy (ART) is highly effective in controlling the virus and preventing its progression. ART involves taking a combination of medications daily to suppress the replication of HIV, allowing the immune system to recover and preventing further damage. Adherence to ART can lead to a near-normal lifespan and significantly reduce the risk of transmitting

the virus to others.

Prevention

Prevention is crucial in combating the spread of HIV. Strategies for prevention include practicing safe sex, by using condoms consistently and correctly, avoiding sharing needles or syringes, getting tested regularly for HIV and other sexually transmitted infections and considering pre-exposure prophylaxis (PrEP) for individuals at high risk of HIV infection.¹



What is a stem cell transplantation?

Stem cell transplantation, also known as stem cell therapy or hematopoietic stem cell transplantation (HSCT), is a medical procedure that involves the transplantation of stem cells into a patient to replace damaged or diseased cells or to stimulate the body's own production of healthy cells. Stem cells are undifferentiated cells that have the ability to differentiate into various types of specialized cells in the body.

There are different sources of stem cells used in transplantation:

Bone Marrow Transplantation (BMT)

This involves collecting stem cells from the bone marrow, usually from the hip bone, of a compatible donor or the patient themselves. BMT is commonly used to treat conditions like leukemia, lymphoma, and certain genetic disorders.

Peripheral Blood Stem Cell Transplantation (PBSCT)

In this procedure, stem cells are collected from the bloodstream using a process called apheresis. The donor or patient receives medication to increase stem cell production before the collection. PBSCT is often used as an alternative to bone marrow transplantation.

Cord Blood Transplantation

Stem cells can also be obtained from the umbilical cord blood of a newborn baby. Cord blood banks store these stem cells for future use. Cord blood transplantation is primarily used for treating certain blood disorders and immune system diseases. The transplantation process involves several steps:

Collection

Stem cells are collected from the chosen source, such as bone marrow, peripheral blood, or cord blood. The donor may undergo a process to increase the number of stem cells in their blood before collection.

Conditioning

Before the transplantation, the patient usually undergoes a conditioning regimen, which involves high-dose chemotherapy, radiation therapy, or a combination of both. This conditioning helps to destroy diseased cells and suppress the immune system to prevent rejection of the transplanted cells.

Transplantation

The collected stem cells are infused into the patient's bloodstream through a central venous catheter. The stem cells then travel to the bone marrow, where they can replace damaged or diseased cells and start producing healthy blood cells.

Engraftment

The transplanted stem cells settle in the bone marrow and begin to multiply and differentiate. This process is known as engraftment. It can take several weeks for the new cells to fully repopulate the bone marrow and restore normal blood cell production.

Stem cell transplantation can be a potentially curative treatment for certain types of cancers, such as leukemia and lymphoma, as well as some non-malignant conditions, such as aplastic anemia and severe immune system disorders. However, it is a complex and high-risk procedure that requires careful matching of donor and recipient, and it may have significant side effects, including graft-versus-host disease (GVHD), infections, and organ damage. The success and suitability of stem cell transplantation depend on various factors, including the underlying condition, the type of stem cell source, the compatibility between donor and recipient, and the overall health of the patient.

Stem cell transplantation, specifically hematopoietic stem cell transplantation (HSCT), has been explored as a potential cure for HIV, but it is a complex and experimental approach that is not yet considered a standard treatment option. Here's some information

on this topic.

Berlin Patient

The case of Timothy Ray Brown, often referred to as the "Berlin Patient," is the most well-known example of using stem cell transplantation to potentially cure HIV. Brown had both HIV and acutemyeloid leukemia. To treat his leukemia, he underwent a stem cell transplant from a donor with a rare genetic mutation called CCR5-delta 32, which makes cells resistant to HIV infection. Following the transplant, Brown's HIV levels became undetectable, and he remained off antiretroviral therapy without detectable HIV for many years. However, it's important to note that this approach is not feasible for the general HIV-positive population due to various reasons, including the availability of suitable donors and the risks associated with the transplantation process.

CCR5 Gene Editing

Another avenue of research is focused on using gene editing technologies, such as CRISPR-Cas9, to modify the CCR5 gene in a patient's own stem cells. The CCR5 gene encodes a protein that HIV uses to enter CD4 cells. By disrupting or modifying the CCR5 gene, scientists aim to create HIV-resistant cells that can be transplanted back into the patient. Early studies in this area have shown promising results, but further research and refinement of the gene editing techniques are needed before it can be considered a practical cure for HIV.

It's important to emphasize that these approaches are still in the experimental stage and carry significant risks and challenges. Stem cell transplantation is an intensive procedure associated with potential complications, including graft-versus-host disease, organ damage, and infection. Furthermore, the cost and availability of suitable donors or gene editing technologies pose additional barriers to widespread implementation.

Recently a 53-year-old man, was successfully cured using this therapy and now he is the third person in the world to be completely cured of the HI virus by a stem cell transplant. The patient, treated at the University Hospital Düsseldorf for his HIV infection, had received a stem cell transplant due to a blood cancer. It was from a healthy donor whose genome contains a mutation in the gene for the HIV-1 co-receptor CCR5. This mutation makes it impossible for most HI viruses to enter human CD4+ T-lymphocytes, their major target cells². Following transplantation, the patient was carefully monitored virologically and immunologically for almost ten years. Using a variety

of sensitive techniques, the researchers analyzed the patient's blood and tissue samples to closely monitor immune responses to HIV and the continued presence or even replication of the virus.

Already shortly after transplantation and over the entire course of the study years, neither replicating virus nor antibodies or reactive immune cells against HIV were detected. More than four years ago, the antiviral therapy against HIV was discontinued. Ten years after transplantation and four years after the end of anti-HIV therapy, the Düsseldorf patient could be declared cured by the international research consortium.³

This case of curing a chronic HIV infection by stem cell transplantation shows that HIV can in principle be cured which is a hope for the future HIV research. While stem cell transplantation holds promise for the future, the current standard of care for HIV management is antiretroviral therapy (ART). ART is highly effective in controlling the virus, improving quality of life, and reducing the risk of transmission. Ongoing research continues to explore innovative approaches to achieve a functional cure or long-term remission for HIV, but more time and scientific advancements are needed before stem cell transplantation can be considered a routine curative therapy for HIV.

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Stem cell transplantation for HIV

SHORT- LASTING UNILATERAL NEURALGIFORM HEADACHE ATTACKS WITH CONJUNCTIVAL INJECTION AND TEARING (SUNCT)

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ABSTRACT

SUNCT is a rare kind of primary headache characterized by short-term unilateral neuralgiform headache attacks with conjunctival injection and tearing. It is distinguished by strong, unilateral, brief headaches accompanied by autonomic signs such as conjunctival injection and tearing. SUNCT is a specific headache disease that is frequently treatable by medicinal therapy or genetics.

Key words: Neuralgiform headache, SUNCT, International headache society

Introduction

Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) is a rare form of primary headache. It is characterized by severe, unilateral, short-lasting headache attacks that are accompanied by autonomic symptoms such as conjunctival injection and tearing. SUNCT is a distinct headache disorder that is often tractable to medical therapy or a persons genetics.

The prevalence of SUNCT is estimated to be around 1.2-6.6/100,000. The estimated prevalence in the general population is less than 1 in 1000. SUNCT is slightly more predominant in males, with a male-to-female ratio of 1.5:1 to 7.5:1. The mean age of onset is around 50 years¹

There are no identified risk factors for developing SUNCT syndrome. However, it is slightly more predominant in males, with a male-to-female ratio of 1.5:1 to 7.5:1. The mean age of onset is around 50 years. There is no known prevention for SUNCT syndrome².

Signs and Symptoms

It is marked by bursts of moderate to severe burning, piercing, or throbbing pain, usually on one side of the head and around the eye or temple. The pain is excruciating and severe enough to disrupt daily activities, but hospitalization is not necessary for most affected individuals. Other symptoms of SUNCT include:

- Ipsilateral conjunctival injection (red eyes)
- Ipsilateral lacrimation (tearing)
- Nasal stuffiness/rhinorrhea
- Sweaty forehead
- Swelling of the eyelids

- Increased pressure within the eye on the affected side of the head.

- Systolic blood pressure (pressure on the artery walls when the heart beats) may rise during the attacks. Moving the neck may trigger these headaches.

SUNCT attacks usually last from five seconds to several minutes and can occur up to 100 times per day. SUNCT is a major subset of SUNA (short-lasting unilateral neuralgiform headache attacks), which does not accompany cranial symptoms².

Pathophysiology

The pathology of SUNCT syndrome is not fully understood. However, it is believed to be caused by irritation or compression of the trigeminal nerve, which is responsible for sensation in the face. The successful results of surgical treatment suggest that the symptoms of SUNCT were induced by compression of the trigeminal root exit zone from the side. In some cases, SUNCT syndrome may be associated with cerebellar hypoplasia or dorsolateral medullary infarction³.

Diagnosis

The International Headache Society (IHS) diagnostic criteria are used to diagnose SUNCT. The criteria include:

- At least 20 attacks fulfilling criteria B-D.
- Severe unilateral orbital, supraorbital or temporal pain lasting 5-240 seconds.
- Pain is accompanied by ipsilateral conjunctival injection and/or lacrimation.
- At least one of the following symptoms is present on the same side as the pain: nasal congestion, rhinorrhea, eyelid edema, forehead and facial sweating, forehead and facial flushing, sensation of

fullness in the ear, miosis or ptosis.

□ Attacks have a frequency of at least one per day and up to 200 per day.

The diagnosis of SUNCT can be challenging because it is often confused with other headache disorders such as trigeminal neuralgia. Magnetic resonance imaging (MRI) of the brain may be performed to rule out other causes of headache, but it is not necessary for the diagnosis of SUNCT^{1,4}

Complications

There are no known complications for SUNCT, however the excruciating pain and frequent attacks of SUNCT can significantly impact patients quality of life. The pain can be severe enough to disrupt daily activities but hospitalization for most individuals might not be necessary.

Management

While there is no known cure for SUNCT, there are several treatment options available to help manage the symptoms and reduce the frequency and severity of attacks. The following are some of the non-pharmacological management for SUNCT:

□ Oxygen therapy: Inhalation of 100% oxygen for 15-20 minutes has been shown to be effective in reducing the frequency and severity of SUNCT attacks. This treatment works by increasing the amount of oxygen in the blood, which can help reduce inflammation and pain.

□ Trigeminal microvascular decompression (MVD): This is a surgical procedure that involves decompressing the trigeminal nerve by removing or repositioning blood vessels that are compressing the nerve. This procedure has been shown to be effective in treating SUNCT in some patients.

□ Gamma knife radiosurgery: This is a non-invasive procedure that uses focused radiation to target the trigeminal nerve and reduce the frequency and severity of SUNCT attacks.

Nerve blocks: Local anesthetic nerve blocks can be used to provide temporary relief from pain and other symptoms associated with SUNCT. These blocks involve injecting a local anesthetic into the affected nerve to numb the area and provide relief.

□ Lifestyle changes: Certain lifestyle changes, such as avoiding triggers that can cause attacks, getting enough sleep, and reducing stress, can help manage the symptoms of SUNCT^{1,5}.

Several medications have been used to treat SUNCT, including anticonvulsants, such as gabapentin and lamotrigine, and corticosteroids, such as prednisone.

These medications can help reduce the frequency and severity of attacks and provide relief from pain and other symptoms.

□ Gabapentin and lamotrigine have been found to be effective in managing SUNCT/SUNA symptoms. However, tolerability issues can lead to drug discontinuation in some patients. The recommended starting dose of lamotrigine is 25 mg per day, which can be increased by 25-50 mg every 1-2 weeks until the optimal dose is reached. The maximum recommended dose is 400 mg per day. The recommended starting dose of gabapentin is 300 mg per day, which can be increased by 300 mg every 3-4 days until the optimal dose is reached. The maximum recommended dose is 3600 mg per day.

□ Oxcarbazepine has also been used to treat SUNCT. The recommended starting dose of oxcarbazepine is 300 mg per day, which can be increased by 300 mg every 3-4 days until the optimal dose is reached. The maximum recommended dose is 1200 mg per day.

□ Topiramate: This anticonvulsant drug has been used to treat SUNCT, but its effectiveness is less well-established than that of lamotrigine and gabapentin. The recommended starting dose of topiramate is 25 mg per day, which can be increased by 25-50 mg every 1-2 weeks until the optimal dose is reached. The maximum recommended dose is 400 mg per day.

□ Intravenous lidocaine can be used to terminate a cycle of acute attacks

□ NSAIDs and Prednisone have been tried in SUNCT, but their effectiveness is limited.

□ Botulinum toxin A: OnabotulinumtoxinA infiltrated at four points around the orbit, injecting 10 U at each site, was reported to be consistently effective in a SUNCT patient refractory to oral treatments after 2.5 years of follow-up^{6,7}

□ Carbamazepine acts by blockade of use- and frequency-dependent sodium channels, although a blockade of the N-methyl-D-aspartate receptor-activated sodium and calcium influx and effects on the purine, monoamine, and acetylcholine receptors have also been proposed⁸.

Literature search is a key step in understanding the psychophysiology and management of disease. It helps in formulating a research question and planning the study. The available resources for literature search include biomedical databases such as PubMed, Embase, MEDLINE, Cochrane CENTRAL, Web of Science, and Google Scholar.

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Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing

MINDSET-THE BIGGEST OBSTACLE TO LEARNING

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ABSTRACT

People who have a growth mindset become more effective at seeing the world than those who had a fixed mindset. Individuals with a growth-mindset performed better on the study pressure subscale when it came to study stress elements. People who possess a growth mindset may take the initiative and develop methods to adapt their expectations, alter their ideas, and keep a positive outlook. In contrast, those with a fixed mindset might stick to their goals when under pressure to learn, and if they don't succeed, they'll show heightened stress and unpleasant feelings. College students that have a growth mindset appear to be more optimistic and have higher adaptability when dealing with problems. They think that hard work and perseverance can help them develop their skills and accomplish their objectives.

Key Words: Mindset, motivation, adaptability

Mindset is everything. Mindset can predetermine interpretations and responses to events, circumstances and situations. It is the mental attitude or set of opinions that have formed about something through experience, education, upbringing and culture. You can have mindset on a particular event, topic, item or person. For example, you may think that a particular person is difficult to deal with. However, a mindset can be changed after certain experiences. But this may take time. This is especially true if you have long held belief about something. The longer the held belief, the harder it is to change that belief. This is applicable everywhere about career success, starting your own business, getting through a tough workout etc. How you think, feel and behave in any situation matters. It means that what you believe about yourself impacts on your success or failure.

A fixed mindset assumes that our intelligence, character and creative ability are static. On the other hand, a growth mindset is based on the idea that your essential qualities are things you can cultivate through your efforts. It assumes that everyone can change and grow through experience and practice. Embracing a growth mindset is vital to career success. Workers will need to continuously learn new skills to remain competitive as automation technologies, including artificial intelligence.

Growth mindset may make individuals more resilient and persistent in the face of challenges or difficulties.¹ People with a growth mindset may suffer fewer stress and self-reported symptoms of psychological disease. Mindset can affect one's motivation, which in turn can affect academic resilience and performance. Both grit and mindset are linked to academic achievement,

subjective wellbeing of the individual and the reduction of psychopathology^{2,3}. A substantial body of research has shown that the belief that one's abilities and talents can be developed (growth mindset), rather than fixed, can stimulate long-term learning⁴. In terms of behavioural outcomes, growth mindset stimulates persistence in the face of obstacles and challenge-seeking behaviours and positively influences academic performance in primary, secondary, and higher education⁵. Specifically, growth mindset is significantly and positively correlated with academic performance and predicts higher academic achievement than fixed mindset^{6,7}.

If a student who has a growth mindset receives a poor grade on a test, they would likely put additional effort into studying for the next test, due to their core beliefs that they are able to grow, learn, and perform better. Thus, children with a growth mindset believe that they can develop their abilities through hard work, good strategies, and guidance from others. Having a growth mindset may also benefit individuals in a variety of different careers and educational fields, as it will allow them to persevere in the face of rejection and/or failure⁸.

Moreover, students from lower-income families are less likely to maintain a growth mindset compared to their wealthier peers. However, the students who were able to maintain a growth-mindset were much more successful in overcoming the adverse effects of poverty on their academic achievement, than those who exhibited a fixed-mindset⁹.

Individuals with a growth mindset demonstrated better life perception ability than those with a fixed

mindset. In terms of study stress factors, individuals with a growth-mindset scored lower on the study pressure subscale. Individuals with a growth mindset may take initiative and derive strategies to adjust their thoughts, modify their expected goals in time, and maintain an optimistic and positive attitude. In contrast, individuals with a fixed mindset might adhere to goals when facing learning pressure, and if they fail to achieve their goals, demonstrate increased pressure and negative emotions. College students with a growth mindset show better adaptability when facing difficult situations or challenges, and appear to be more optimistic. They believe that their abilities can be cultivated and that they can achieve their goals through hard work and perseverance. However, college students with a fixed mindset believe that their abilities are stable, and that they cannot be improved through effort. When they have difficulties, they may avoid challenges and demonstrate negative coping mechanisms. Persons with growth mindset thrive on the challenges and considered failure as a part of success. They know that most successful people have failed many times, but they ultimately succeeded because they refused to quit.

Having growth mindset means believing that a person's abilities aren't innate but can be improved through effort, learning and persistence. With growth mindset we can acknowledge our failures and find inspiration to keep improving. This allows students to be versatile and have the confidence to step outside of their comfort zone.

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Mindset-the biggest obstacle to learning

KPGA ACTIVITIES

KERALA PHARMACEUTICAL CONGRESS
(KPC) – 2023

REPORT

**Dr. Nishith MC**

Organizing Secretary,
KPC-2023

The 1st Kerala Pharmaceutical Congress – 2023 (Theme: "A Self-Reliant Pharma Industry for the Future of Pharmacy in Kerala") was organized by the Kerala Pharmacy Graduates' Association (KPGA) at St. James' College of Pharmaceutical Sciences, Chalakudy, Thrissur, Kerala on February 25, 2023, and February 26, 2023. The congress was successfully organized with the valuable support and guidance of the following persons : Dr. Krishnakumar K(Chairman and Principal,

**Dr. K Krishnakumar**
Chairman, KPC-2023

St. James' College of Pharmaceutical Sciences, Chalakudy), Dr. PK Sreekumar (Co-Chairman and President, KPGA), Mr. PU Abdul Nazeer (Gen. Secretary, KPGA), Dr. Nishith M.C (Organizing Secretary and Joint Secretary, KPGA), and other committees comprising members from various pharmacy professionals and students.

The event witnessed the participation of approximately 1600 attendees. The inaugural session of KPC 2023 took place on the first day (25/02/2023), featuring esteemed guests including Dr. Montu M Patel (President, Pharmacy Council of India), Dr. Atul Kumar Nasa (President, Indian Pharmacy Graduates' Association), Mr. Rajabhanu K (Secretary-General, All India Drugs Control Officers' Confederation) as Guests of Honor, and Mr. Jayan PM (Drugs Controller and Licensing Authority, Govt. of Kerala) along with Shri. E.A Subramanian (Managing Director, Kerala State Drugs & Pharmaceuticals Ltd) as Special Invitees. Additionally, Rev. Dr. Antu Alappadan, Director of St. James' Group of Institutions in Chalakudy, Thrissur, graced the session with his presence.

The theme presentation "A Self-Reliant Pharma Industry for the Future of Pharmacy in Kerala" was given by Mr. Mathew Kokad, Director, Kokad Pharmaceutical Laboratories Ltd., Kottayam, and Mr. Suresh Kamath, President-Formulations, Centaur Pharmaceuticals Pvt. Ltd., Goa.

On both the first and second days, scientific sessions were conducted with six eminent speakers, and there were oral presentations and E-Poster presentations, which received an overwhelming response from research scholars, students, and faculty members across Kerala, Tamil Nadu, Karnataka, and Andhra Pradesh. We received more than 180 scientific papers from various disciplines of Pharmaceutical sciences.

The valedictory function featured esteemed guests such as Dr. Mohanan Kunnummal, the Vice Chancellor of Kerala University of Health Sciences in Thrissur, who served as the Chief Guest. Dr. Rajasree RS, the Dean of the Faculty of Pharmaceutical Sciences at KUHS, attended as a Special Invitee. Additionally, Rev. Fr. Manoj Mekkadath, the Associate Director of St. James' Group of Institutions in Chalakudy, Thrissur, was also present at the function.



Gallery



Kerala Pharmaceutical Congress-2023



Gallery



Women's Day Celebration-2023

The Women's Day celebration took place at Lisie Hospital Auditorium in Kochi on March 11, 2023. This year's theme was "*DigitALL: Innovation and technology for gender equality*". The event was jointly organized by the women wings of KPGA and the IPGA Kerala Chapter. The gathering was inaugurated by Ms. Uma Thomas, Thrikkakara MLA, who delivered an inspiring speech emphasizing the importance of women's empowerment and gender equality. Among the highlights of the event was a session conducted by Dr. Bindu Krishnan on the theme and its impact on women. Her presentation shed light on the potential of AI in various fields and discussed the role of women in shaping the future of this technology. The event provided a platform for women to come together, celebrate their achievements, and discuss pertinent issues relevant to their professional and personal lives. Several distinguished individuals in the field of Pharmacy were honoured during the event. Dr. NA Aleykutty, Dr. Mahalakshmi, Dr. Kala D, Dr. Jeny Samuel, and Dr. Limce Thampi, delivered insightful speeches during the session.

Additionally, an informative hands-on session on fire safety, encompassing valuable tips and guidelines, was conducted by the authorities from Gandhinagar fire station in Ernakulam.



Organizers with Ms. Uma Thomas MLA during Women's Day Celebration-2023

Students Project Fund-2023

The Kerala Pharmacy Graduates' Association has taken a notable step to provide student project funds for the year 2023 to B.Pharm, M.Pharm, and Pharm.D students of Kerala. This progressive decision was approved by the association's Executive Committee (EC) and the details along with guidelines have been shared on their official website. This initiative marks a significant milestone as it becomes the first endeavor of its kind by a private professional organization in the State. By offering project funds, the association aims to motivate pharmacy students and foster their genuine interest in conducting high-quality research. This endeavor holds great potential to enhance the educational experience and promote a culture of inquiry among aspiring pharmacy professionals.

Upcoming Events

Seminar at Caritas College of Pharmacy, Ettumanoor, Kottayam

The highly anticipated **Inspire-2023**, a one-day seminar is all set to be conducted at the prestigious Caritas College of Pharmacy, situated in the beautiful city of Kottayam on 24th June, 2023. This exceptional event is being organized in association with the Kerala Pharmacy Graduates Association. The seminar promises to deliver a rich program of scientific sessions, where experts and researchers will present their cutting-edge work and share valuable insights into the latest developments in the pharmaceutical field. Additionally, the event will witness the declaration of the Student Project Fund-2023, providing an opportunity for aspiring pharmacy students to showcase their innovative projects and receive financial support. Furthermore, a motivational speech is scheduled to inspire and ignite the passion of the attendees, encouraging them to excel in their careers and contribute to the advancement of the pharmacy profession. With the collaborative efforts of Caritas College of Pharmacy, the Kerala Pharmacy Graduates Association, and the exciting lineup of scientific sessions, the declaration of the Student Project Fund-2023, and a motivational speech, Inspire-2023 promises to be a truly impactful and memorable seminar.

Annual General Body Meeting of KPGA

The Kerala Pharmacy Graduates Association is gearing up for its much awaited Annual General Body Meeting, which is set to take place on July 30, 2023, at the esteemed KPGA Bhavan in Thiruvananthapuram. The primary agenda of this year's meeting is the election of the new executive committee members for the upcoming tenure. As such, the election process represents a crucial opportunity for members to actively participate in the democratic process and contribute to the decision-making of the association.

Another significant highlight of the event is the distribution of the students project funds for the year 2023. The KPGA believes in fostering the spirit of innovation and research among pharmacy students, and the project funds serve as a means to support and encourage their academic pursuits. By providing financial assistance for deserving student projects, the association aims to nurture talent and facilitate advancements in the field of pharmacy.

The General Body Meeting will also serve as a forum for members to discuss and address various pertinent topics related to the pharmaceutical industry, healthcare, academics and the challenges faced by professionals in the field. Participants will have the opportunity to share their insights, experiences, and suggestions, fostering a sense of camaraderie and collaboration among the pharmacy graduates in Kerala. During the meeting, the outgoing executive committee will present a comprehensive report detailing the achievements and initiatives undertaken during their tenure. This report will shed light on the progress made by the association over the past year and provide a foundation for the future plans and goals of the incoming committee. This annual event serves as a significant platform for all members to convene and deliberate on matters of utmost importance related to the association.



**KERALA PHARMACY GRADUATE'S ASSOCIATION
(KPGA)**

ANNUAL GENERAL BODY MEETING

**30TH JULY 2023
(SUNDAY)**

10 AM

SAVE THE DATE

Venue: KPGA Bhavan, Trivandrum

PHARMACIST'S OATH

- ❖ *I Swear by the code of Ethics of Pharmacy Council of India in relation to the community and shall act as an integral part of health care team.*
- ❖ *I shall uphold the laws and standards governing my profession.*
- ❖ *I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health.*
- ❖ *I shall follow the system, which I consider best for pharmaceutical care and counseling of patients.*
- ❖ *I shall endeavour to discover and manufacture drugs of quality to alleviate sufferings of humanity.*
- ❖ *I shall hold in confidence the knowledge gained about the patients in connection with professional practice and never divulge unless compelled to do so by the law.*
- ❖ *I shall associate with organizations having their objectives for betterment of the profession of Pharmacy and make contribution to carry out the work of those organisations.*
- ❖ *While I continue to keep this Oath inviolated, may it be granted to me to enjoy life and the practice of pharmacy respected by all, at all times!*
- ❖ *Should I trespass and violate this oath, may the reverse be my lot!*

**Kerala
Pharmacy
Graduates'
Association**



**PHARMLINE-The Official Publication Of
Kerala Pharmacy Graduates' Association**

PHARMLINE is the official publication of KPGA and is published since 1981. Pharmline is a tri annual publication.

The main aim of the publication is to keep pharmacists informed on current issues and best practices, as well as serving as a platform for the exchange of ideas, knowledge and opinion among pharmacists and related disciplines.

The publishers welcome contributions of pharmaceutical relevance.

Original articles are considered for publication on the condition that they have not been published, accepted or submitted for publication elsewhere. The editor reserves the right to edit manuscripts to fit articles with in space available and to ensure conciseness, clarity and stylistic consistency.

All scientific articles submitted for publication are subject to a double-blind review procedure.

Please send your articles to kpgapharmline@gmail.com

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