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PHARMA TAB

Department of Pharmacy Practice
C.L. BAID METHA COLLEGE OF PHARMACY
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GENE THERAPY - MEDICINE OF TODAY

Editor's Desk

Gene therapy is no longer a futuristic vision. It is the medicine of today, reshaping how we treat rare genetic diseases. It is a transformational approach where malfunctioning or abnormally regulated genes are replaced by the genes that are normally regulated.

Many clinical trials are underway to cure genetic diseases and correct genetic errors by targeting the underlying root causes, and gene therapy holds immense promises, for conditions caused by genetic variations and has all the potential to improve the quality of life of those suffering with hereditary diseases.

By investing in the future of gene therapy, we can transform medicine, alleviate the burden of daily disease management, and ensure patients have the treatments they need.

This issue consists of articles focusing on gene therapy and has all our regular activities. Hope it will be interest to read.

IN THIS ISSUE

NEED OF PHARMACOGENOMICS TO END TB BY 2035

➤ by **Mrs. K. Shailaja, Associate Professor**

Tuberculosis is a preventable and curable disease caused by the bacteria (Mycobacterium Tuberculosis) which affects the lungs. It is known as a communicable disease that spreads through the air when people with TB cough, sneeze, or spit.

WHO Global tuberculosis report 2023 states that, 192 countries with more than 99% of the world's population reported TB cases. Every year 10 million people fall ill with tuberculosis and 1.5 million people die from TB. Though it is an ancient disease and advanced technology rendered tuberculosis more easily diagnosable and curable, it is still emerging due to several significant reasons like drug-resistant strains, less amount of drug that reaches the systemic circulation to exert its pharmacological actions, low-quality healthcare and patient non-compliance.

The World Health Organization goal to end TB by 2035 can met only the multidrug-resistant strains are addressed and treated. WHO recommends different regimens for rifampicin-resistant TB (RR-TB) or multidrug-resistant TB (MDR-TB, defined as resistance to both rifampicin and isoniazid); isoniazid resistant TB; pre-extensively drug-resistant TB (pre-XDR-TB), defined as TB that is resistant to rifampicin and any fluoroquinolones and XDR-TB (resistance to rifampicin, any fluoroquinolones and at least one of bedaquiline or linezolid).

Isoniazid introduced in 1952 and rifampicin are the most important first line anti-tubercular drugs, effective and is not expensive that are resistant in most of the population. Inter individual variability in response to the same drugs are known to occur due to the sequence variants in genes coding for drug metabolizing enzymes, drug transporters or targets.

Artificial intelligence, genetic screening and whole genome sequencing can help to better understand the underlying mechanism of drug-resistant which helps to end the tuberculosis.It is highly recommended to incorporate the pharmacogenomics into tuberculosis clinical trials to prevent the adverse drug effects and therapeutic success.

WEBSITES OF INTEREST

By Dr. Keren Ann George, Asst Prof

www.ijhg.com

The Indian Journal of Human Genetics (IJHG) is a peer-reviewed, open-access journal that focuses on human genetics research in the Indian context. It covers a wide range of topics, including genetic disorders, population genetics, genetic epidemiology, molecular genetics, and genetic counseling.

The journal publishes original research articles, review articles, case reports, and letters to the editor, providing a platform for researchers, clinicians, and genetic counselors to share their findings and insights. The IJHG aims to promote research and education in human genetics in India and contribute to the global understanding of human genetic diversity and disease.

www.isgct.in

Indian Society of Gene & Cell Therapy (ISGCT) serves as a platform for professionals and researchers in India interested in gene and cell therapy. It provides information on gene therapy research, clinical trials, and advancements specific to India, along with resources for networking and collaboration in the field.

UPCOMING CONFERENCES

ISPOR Europe 2024

17-20, November 2024, Barcelona, Spain. Research Abstract Submission Opens: 18 April 2024

Research Abstract Submission Closes: 27 June 2024.

Website: https://www.ispor.org/conferences-education/conferences/upcoming-conferences

82nd FIP World Congress of Pharmacy and Pharmaceutical Sciences

1 to 4 September 2024, Cape Town, South Africa,

Last date for registration

31 May 2024

Website: capetown2024.fip.org/programme/call-for-abstracts

DRUGS APPROVED BY US FDA

Drugs Approved by US Food and Drug Administration (US FDA) during the period of January to March 2024

Drug Name	Approved Date	Indication	Status in India
Berdazimer sodium	05/01/2024	To treat Molluscum Contagiosum	Not yet approved by CDSCO
Cefepime and Enmetazobactam	22/02/2024	To treat of Urinary Tract Infection	
Tislelizumab-jsgr	13/03/2024	To treat metastatic esophageal squamous cell carcinoma	
Aprocitentan	19/03/2023	To treat hypertension	
Vadadustat	27/03/2024	To treat anemia due to chronic kidney disease	
Danicopan	29/03/2024	To treat extravascular hemolysis with paroxysmal nocturnal hemoglobinuria	

Reference: https://www.fda.gov/drugs/new-drugs-fda-cders-new-molecular-entities-and-new-therapeutic-biological-products/novel-drug-approvals-2024

GENE THERAPY – PROS & CONS

by Blessy Caramel P, II Pharm D

Introduction

Gene therapy is a new generation of medicine, an innovative approach, where a functioning gene is delivered to a targeted tissue in the body to produce a missing or non functioning protein. By using genes as medicine, the underlying cause of a disease can be targeted at the cellular level rather its symptoms. (1)

Gene therapy holds promise for treating a wide range of diseases such as Cancer, Cystic fibrosis, Heart diseases, Diabetes, Hemophilia, inherited diseases, alpha-1 antitrypsin deficiency, beta thalassemia, Infections of the upper GI Tract, systemic protein deficiencies, sickle cell disease and AIDS. (2)

Gene therapy involves the usage of various techniques that include Swapping of disease-causing gene with healthy gene, Inactivation of disease-causing genes and Introduction of new modified genes to the body.

The types of Gene Therapy includes,

1. Gene Addition: A new fragment of a healthy gene is added as a replacement to disease causing gene.

2. Gene Editing: In gene editing, the already existing gene sequence is altered by various techniques that aims to modify the damaged gene in order to ensure treatment. Two types of gene editing are gene silencing and gene correction.

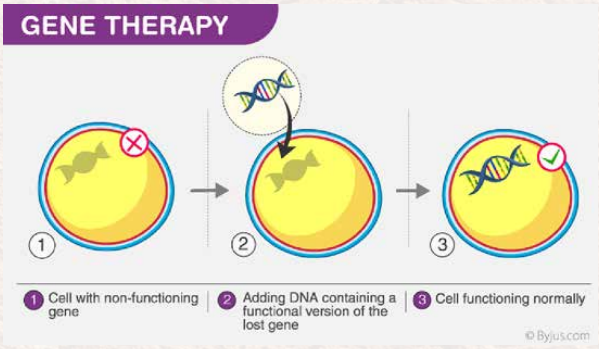
Approaches for Gene Therapy

1. Somatic Cell Gene Therapy: The non reproductive cells of the body are known as somatic cells. Treatment of defects in the somatic cells using gene alterative mechanisms are referred to as somatic cell gene therapy.

2. Germ Cell Gene Therapy: The reproductive cells are termed as germ cells and the genetic modifications take place at the germ cell level. Germ cell gene therapy shows results in the successive generations. (3)

Methodology

There are two general approaches for introducing genes into a cell: viral and nonviral. viral vectors are being used in almost 70% of the clinical trials. to date. Viral vectors are extremely efficient at transferring genes but can possess certain risks. Nonviral vectors are considered to be safer when compared to viral vectors, but are not that efficient when it comes to transferring genes.



Transfer of genetic material is done through three methods namely TRANSFORMATION where under specific conditions the gene is taken up by the bacterial cells, TRANSDUCTION in which a bacteriophage is used to transfer the genetic material and TRANSFECTION that involves the forceful delivery of gene using either viral or non-viral vectors. Gene therapy works by altering the genetic code in order to recover the functions of critical proteins. Proteins are crucial for proper body functioning. Fixing or swapping of disease-causing gene sequence helps recover the protein production process and allows for normal bodily functions.

Viral vectors have the advantage of achieving highly efficient gene transfer in vivo and since they can

ADVANTAGES & DISADVANTAGES OF GENE THERAPY (5)

Advantages	Disadvantages
1. Provides a last resort to patients when all other treatment procedures are no longer feasible in case of genetic disorders.	1. Gene therapy does not have a reliable delivery method as the enzymes used in the process tends to get eliminated by the immune system before it starts to work.
2. Gene therapy promises to reduce or eliminate the pain and discomfort that certain genetic abnormalities cause.	2. Gene therapy is a very expensive procedure and most healthcare insurance plans don't cover the cost of the procedure.
3. Gene therapy offers a potential to new discoveries.	3. Gene therapy may not be as effective as it is now as the body might start resisting the treatment and may not meet the growing requirements of the healthcare system.
4. Gene therapy allows for the use advanced technology to improve the quality of life for patients.	4. The effects of the treatment may not last for a long period of time and requires multiple sessions to see any improvement in the disease condition.
5. Gene therapy is helpful in the treatment of the "untreatable" diseases.	5. When used unethically such as for making of designer babies or aesthetic purposes can cause serious consequences and even lack of diversity of the human genome
6. Gene therapy offers the opportunity to prevent hereditary diseases like hemophilia and cystic fibrosis, a possible cure for heart diseases and treatment options for cancer and AIDS	

still pose a safety threat. The most commonly used viral vectors are those derived from a serotype 5 adenovirus (Ad5; ~26%) and Moloney murine leukemia virus (MoMLV; ~28%), a retrovirus. Of the non viral gene-transfer approaches, two major methods have been in use. One involves the simple injection of plasmids containing the transgene also termed as "naked DNA" into a tissue. This has been used in almost ~14% of approved clinical trials. The second method involves the use of cationic lipids also known as liposomes to surround the plasmid DNA and is called lipofection. This method has been used in ~9% of approved clinical trials. The cationic lipids facilitate plasmid entry into the cell as the plasma membrane is lipid bi-layer. (4)

The non-viral transfection methods are classified into Physical, chemical and biological. The physical methods include electroporation, biolistic, microinjection, laser, elevated temperature, ultrasound and hydrodynamic gene transfer.

The chemical methods utilize calcium- phosphate, DAE-dextran, liposomes and nano particles for transfection. The biological methods mostly use viruses for gene transfer.

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Uniform Code for Pharmaceutical Marketing Practices (UCPMP) 2024

The Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Govt. of India, released Uniform Code for Pharmaceutical Marketing Practices (UCPMP) for Pharmaceutical companies to restrict unethical promotion of Drugs with effect from 12th March 2024 replacing the earlier version released in the year 2014.

The code governs the conduct of pharmaceutical companies in their marketing practices, covering the various aspects such as medical representatives, textual and audio-visual promotional materials, samples, gifts, etc.

The code further elaborated relationship with healthcare professionals, wherein the provisions related to travel facilities, hospitality and cash or monetary grants to physicians or their families have been explained.

The code also details the mode of operation of the code, responsibilities of the Pharmaceutical Associations in constituting the Ethics Committee for Pharmaceutical Marketing Practices (ECPMP) for handling the complaints and Apex Ethics Committee for Pharmaceutical Marketing Practices (AECPMP) for review, procedure of lodging a complaint, procedure of handling of complaints by the Pharmaceutical Associations and various penalty provisions.

Details are available at:
https://pharmaceuticals.gov.in/sites/default/files/UCPMP%202024%20for%20website_0.pdf

IMPORTANT HEALTH AWARENESS DAYS

(April - June 2024)

HEALTH DAYS	DATE
World Autism Awareness Day	02-April
World Health Day	07-April
World Parkinson's Disease Day	11-April
World Hemophilia Day	17-April
World Malaria Day	25-April
World Immunization Week	24-30 April
World Hand Hygiene Day	05-May
World Asthma Day	07-May
World Thalassaemia Day	08-May
World Hypertension Day	17-May
World Inflammatory Bowel Disease Day	19-May
World Thyroid Day	25-May
World No Tobacco Day	31-May
World Brain Tumor Day	08-June
World Sickle Cell Day	19-June
World Vitiligo Day	25-June
World Allergy Week	18-24 June

CHALLENGES IN GENE THERAPY- AN OVER VIEW

➤ by F. Grace Evangeline, II Pharm D

Gene therapy is a medical field which focuses on utilization of the patient's therapeutic delivery of nucleic acid into a patient's cell as a medicine to treat the disease. Though it is a promising treatment, gene therapy poses many technical challenges and targeting a gene to the correct cells and keep them working is crucial to the success of any gene therapy treatment.

Challenges in Gene Therapy

Immunological Problems & Unwanted Immunesystem Reaction:

Unwanted immune system reactions pose significant challenges in gene therapy, though it is a promising treatment for variety of diseases. The viral vectors used to deliver therapeutic genes can trigger an immune response, leading to the destruction of gene-modified cells, destruction of vector and therapeutic gene or causes many adverse effects on patients, thereby reducing the effectiveness of the treatment.

Issues in Viral Mediated Gene Therapy:

Viral mediated gene therapy also posses several risks. One major concern is that, if viral vectors used in the therapy are not properly attenuated or modified. Viral vectors such as adenovirus and lentivirus are commonly used to deliver therapeutic genes to target cells. Retroviral vectors are not capable of replication although they may infect and cause the introduction of provirus into the target cells. They possess a low DNA transfer but they retain pathogenic properties they can cause infections to the patients. Another risk is the possibility of viral vector integrating into the host genome at unintended sites, potentially leading to insertional mutagenesis and also triggering of oncogene(s) leading to the the development of cancer. In viral mediated gene therapy there is high possibility to revert back or to retain an infectious form.

Risks in Ex-vivo Gene Therapy Method:

Ex vivo gene therapy method involves modifying the cells outside the body before reintroducing them into the patient. Therefore, this technique is not associated with adverse immunological responses after transplanting the cells but, there is a risks in contaminating during the cell manipulation process, which could introduce pathogens or other impurities to the patients. And this method can be applied to only selected tissues. (eg .bone marrow). Therefore, it is not applicable to all tissue cells. [1]

Targeting the Wrong Cells:

In Gene therapy the virus can sometimes additional y infect or target the wrong cells due to various factors. One common issue is the lack of specificity in the delivery system leading to off- target effects. For example, if the vector used in gene therapy is not specific enough to the target cells it may also deliver the therapeutic gene to unintended cells potentially causes harmful effects. Additionally the delivery system inability to control the distribution of the therapeutic gene can result in its uptake by non target cells.

Challenges Related to Dosing:

Gene therapies require specialized manufacturing proceses, like introduction of viral vector and helper genes/ plasmids to production of cell line (HEK293 Cells.) through transfection. This can lead to manufacturing difficulties ot enough doses to meet the demand at various stages

Challenges in gene therapy related to dosing include determining the optimal dose for each patient ensuring consistent and accurate delivery minimizing the off- target effects, managing immune responses, addressing variability in patients responses, and balancing efficacy with safety concerns. These challenges can impact the treatment outcomes and may require innovative approaches to dose optimization and delivery.

Approval Delaying:

The FDA is placing closer scrutiny on gene therapy products prior to approval to ensure that they don't enter the market prematurely, which can delay drug patient's access to these new treatments.

Challenges in gene therapy approval delays include complex regulatory requirements and safety concerns, insufficient long-term data high development costs limited manufacturing capacity, and ethical considerations. These factors contribute to a lengthy approval process, hindering timely access to potentially life changing treatments for patients. [2]

Prohibitive up Front Costs:

Prohibitive upfront costs in gene therapy include high research and development expenses, expensive manufacturing processes., specialized infrastructure requirements, and limited insurance coverage.

- Ex: Zolgensma for spinal muscular atrophy costs more than $2.1M per patient.

- Kynriah for hematologic malignancy costs $508,250.
- Luxturna for specific inherited for retinal dystrophy costs $425,000 per eye.

Limitations and Efficiency of Gene Delivery by Non- Viral systems:

There are certain limitations in using viral vectors in gene therapy . Non-viral gene delivery offer advantages such as safety and ease of production, but they also have limitations. Their efficiency is always lower than viral vectors, primarily due to challenges in cellular uptake, nuclear entry, and degradation of the delivered genetic material. Non-viral vectors may trigger immune responses and have restrictions on cargo size, limiting the types of genes which they can effectively deliver. (3)

Difficulties in Delivering of Genes:

Difficulties faced in delivering the genes includes targeting the specific cells, achieving sufficient gene expression, ensuring the long- term stability ofthe delivered genes, and overcoming the physical barriers such as Blood Brain Barrier. Example - Transporting of CFTR genes (cystic fibrosis transmembrane conductance regulator) is the only one challenge for the effective treatment for cystic fibrosis. (4)

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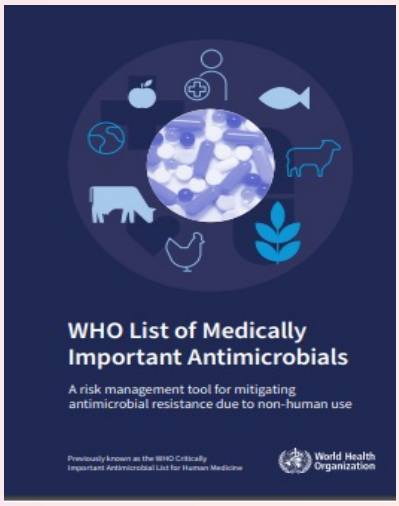
World Health Organization (WHO) publishes Medically Important Antimicrobials List for Human Medicine

Antimicrobials are medically important for human medicine need to be preserved by reducing their use in the non-human sectors. The WHO list of medically important antimicrobials for human medicine (WHO MIA List) is a risk management tool that can be used to support decision-making to minimize the impact of antimicrobial use in non-human sectors.

The list categorizes antimicrobial classes based on their importance for human medicine and according to the AMR risk and potential human health implications of their use in non-human sectors: critically important, highly important, and important to human medicine.

The publication is intended to serve as a reference tool to support decision-making by national regulators and policymakers in ministries of health and agriculture, authorities responsible for regulating, monitoring, and assuring the responsible and prudent use of antimicrobials, and professional prescribers in different sectors.



Source: https://cdn.who.int/media/docs/default-source/gcp/who-mia-list-2024-lv.pdf?sfvrsn=3320dd3d_2:

ONLINE COURSE

IPC COURSES ON OPENWHO

Infection Prevention and Control (IPC) is a major challenge for health care systemsaroundtheworld.There is an important opportunity to reduce avoidable morbidity and mortality through improvements to IPC, including during the COVID-19 pandemic.

The IPC channel hosts general courses designed for all health workers, as well as more advanced courses specific to IPC focal points. The goal is to strengthen health workers' IPC knowledge and advance the IPC focal points' capacity to implement facility-led IPC efforts. The channel includes courses on COVID-19 preparedness, readiness and response, as well as IPC strategies required to prevent and mitigate the spread of COVID-19 infections in health facilities.

Read more in the operational update and access all the courses here

https://openwho.org/channels/ipc

SMART DEVICES - BEYOND THE MEDICAL REALM

➤ by Dr. T. Vishnu, Assistant Professor

Introduction

Smart devices have become an integral part of our lives, providing convenience, connectivity, and endless possibilities. India, being one of the world's fastest-growing economies and a center for innovative headways, has seen a noteworthy rise within the appropriation of keen gadgets. These gadgets have revolutionized the way we live, work, and connected.

As technology continues to advance, the integration of health screening facilities in smart devices From smart phones to wearables and smart home devices has brought about a revolution in personal health monitoring. With the ability to measure vital health parameters such as blood pressure and blood glucose levels, these smart devices provide individuals with an unprecedented level of convenience and efficiency in managing their health.

However, despite their increasing prevalence, a concerning issue remains overlooked – the absence of effective materiovigilance regulation in the smart device industry. This dearth of oversight raises critical questions about the potential negative impact of these devices and the need for a regulating body to protect consumers.

Materiovigilance: The Cornerstone of Safety

Materiovigilance, a term derived from "material" and "surveillance," refers to the systematic monitoring and evaluation of the safety and performance of medical devices. It entails the collection and analysis of adverse events related to the use of these devices, allowing risks to be identified and mitigated promptly. Importantly, materiovigilance frameworks exist for medical devices to ensure user safety, foster transparency, and hold manufacturers accountable.

The Regulatory Gap

While medical devices undergo rigorous approval processes and regulatory oversight, smart devices typically do not fall under similar scrutiny. The lack of a governing body or standardized regulatory framework for non-medical smart technology leaves consumers vulnerable to unforeseen harm.

Traditional product safety regulations often fail to address the complexity and potential risks associated with these devices. Numerous smart devices possess inherent safety concerns that warrant attention. For instance, wearable fitness trackers, exchanged as gifts or utilized for personal health monitoring, may collect sensitive data without clear transparency or encryption protocols. These data breaches pose alarming privacy and security implications, giving rise to identity theft and other digital dangers.

By implementing a comprehensive materiovigilance system, smart device manufacturers would be required to adhere to stringent safety measures, such as pre-market testing, post-market surveillance, and mandatory reporting of adverse incidents. These steps would enable the monitoring and identification of potential risks promptly, facilitating timely corrective actions to protect users.

FDA Warnings

The US Food and Drug Administration (FDA) has taken note of these concerns and issued warnings regarding the calibration and validation of smart devices. The U.S. Food and Drug Administration (FDA) is warning consumers, patients, and healthcare providers about the risks of using smart watches or smart rings that claim to measure blood glucose levels without piercing the skin. These devices are different from FDA-authorized blood glucose-measuring devices that pierce the skin.

The FDA has not authorized or affirmed any smart watch or smart ring that can measure or assess blood glucose values on its claim. Inaccurate blood glucose measurements can lead to errors in diabetes management and potentially harmful consequences such as taking the wrong dose of medication or experiencing hypoglycemia.

The FDA is taking action to ensure that unauthorized products are not marketed to consumers and is advising against using smart watches and smart rings to measure blood glucose levels. Consumers who experience problems or adverse events with these devices should report them to the FDA.

Conclusion

As we embrace the growing dominance of smart devices in our lives, it is vital to recognize the pressing need for materiovigilance regulation in this industry. The absence of a governing body has left a void, impeding our ability to adequately address potential risks and safeguard users from the uncontrolled negative impact of smart devices. By extending the principles of materiovigilance beyond medical devices, we can usher in a new era of accountability, consumer safety, and responsible technological innovation.

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INTERNSHIP ACTIVITY AT GOVERNMENT STANLEY HOSPITAL




Dr. S. Chandrasekar Professor & Head, Department of General Medicine and Pharm D Interns : Subject Review in the General Medicine

WOMEN'S DAY CELEBRATION

AT GOVERNMENT STANELY HOSPITAL



Pharm D Interns performed Skit play on 'Empowering Women through Health"' to the patients on International Women's Day. An Aerobic Zumba session was organised for all Women Doctors, Assistant Professors, and Postgraduate Students of the Internal Medicine Department, Government Stanley Hospital on 8th March 2024

CLERKSHIP ACTIVITY

K. Bhavadharani presented a seminar on "Effectiveness of Teicoplanin and Faropenam" and **R. Kirthika** did a presentation on "Vancomycin and its resistant pattern in current clinical practice" at Gleneagles Health City Chennai on 19th March 2024. **Dr. Krithika Sri and Dr. Sasi Kumar** Clinical Pharmacist and **Dr. Sree Vinithra** shared their experiences during the clinical discussion session.

HONOURING Dr. GURU PRASAD MOHANTA AS PHARMANVESHAN 2024

Dr. Guru Prasad Mohanta Professor & Head, Department of Pharmacy Practice was honored as Pharmanveshan 2024 by Chalapathi Institute of Pharmaceutical Sciences, Guntur on National Pharmacist Education Day.

CONFERENCES AND SEMINARS ATTENDED

Dr.T Vishnu, Assistant Professor, Department of Pharmacy Practice received **best poster presentation award** at National Conference on "Emerging AI Tools on Drug Delivery and Development (AIDDCON 2024) held on 21st March 2024 at Shri Venkateshwara College of Pharmacy, Pondicherry.

Mrs. Bharathipriya Associate Professor presented e-poster attheInternationalConference on "Global Collaboration in Pharmaceuticals: Bridging Borders, Breaking Barriers," at JSS College of Pharmacy, Ooty, on March 15-17 March 2024.

Dr. K. Dhivya Assistant Professor attended Pharmacy "Faculty Development program on Challenges and Solutions in Clinical Research and Pharmacy, Practice Faculties" SRM Institute of Pharmaceutical Sciences and Technology, Kattankulathur, Chennai on 5-9 February 2024

Students Achivements

Pharm D students presented various Research Papers and actively participated as volunteers in Kalaignar Centenary International Medical Conference on "Future of Medicine" jointly organized by The Tamil Nadu Dr. M G R Medical University and Government of Tamil Nadu from 19 - 21 January 2024 at Chennai Trade Centre.

Mr. S G Santhosh Kumar Pharm D Intern received First prize from Honorable Health Minister **Thiru. Ma Subramaniyam** for Best Poster presentation at the Kalaignar Centenary International Medical Conference on "Future of Medicine"on 19th January 2024 at Chennai Trade Centre.

Mr. John Felix Pharm D Intern received third prize for E - Poster Presentation at 2nd International Congress on Infectious Disease and Clinical Pharmacy- ID Congress 2024 at IQRAA International Hospital and Research Centre, Kozhicode, Kerala on 21st January 2024.

WORLD LEPROSY DAY

Mr. C. Maria Arputha Samy, District Health Educator (Retired) D. P. H. IEC Team, Director of Public Health and Preventive Medicine, Chennai, delivered a talk on Leprosy and its Complications on World Leprosy Day on 31st January 2024.

Principal **Dr. C.N Nalini,** Vice principal Dr. N. Ramalakshmi, Professor **Dr. Guru Prasad Mohanta,** Professor **Dr. Kumaravel Rajan**, Faculty & Pharm D students attended Guest lecture on World Leprosy Day on 31st January 2024

WORLD CANCER DAY

CL Baid Metha College of Pharmacy conducted cancer Awareness Program at Primary Health Center (PHC) at Thoraipakkam, on 8th February 2024. Faculty and Pharm D students distributed pamphlets and educated the patients at PHC and to the public at Thoraipakkam.

WORLD KIDNEY DAY

Chief Guest **Dr. S. Chandrasekar,** Professor & Head, Department of General Medicine, Government Stanley Hospital was felicitated by our Principal **Dr. C N. Nalini. Dr. S. Chandrasekar** delivered a Guest Lecture on topic "Management of CKD (Chronic Kidney Disease) Patients"on World Kidney Day conducted on 15th March 2024

Chief Guest **Dr. S. Chandrasekar,** Director **Dr. Grace Rathnam**, Principal **Dr. C N Nalini,** Vice Principal **Dr. N Ramalakshmi,** Faculty and Pharm D Students attended the Guest Lecture on topic "Management of CKD Patients on World kidney Day

Chief Guest **Dr. S Chandrasekar** distributed cash prize and certificates to the winners of Elocution Competition conducted on World Kidney Day. First place **Ms. Bacckyashree**, Pharm D 5th year, Second place **Ms. Aadhira,** Pharm D 3rd year &Third place **Ms. Lakshmi Priya,** Pharm D 3rd year

ONE DAY INTERNATIONAL CONFERENCE

C.L. Baid Metha College of Pharmacy organized an One-Day International Conference on "Emerging Concepts in Patient's Care and Career Opportunities" on 10 February 2024 with the aim of bringing the pharmacy professionals together toexplore the innovative healthcare practices, illuminating the most recent trends,analyzing the future of patient safety and exploring career opportunities in the field of healthcare.
The key note speakers for this One-Day International Conference were **Prof. M. Chandrasekar R**, Fulbright Scholar, Professor of Pharmaceutical Sciences, University of Findlay USA, **Dr. Karthik Rakam** CEO of Avenida Innovations, Medical Advisor of Arintra Inc and Director of Kairos R and D Solution and **Dr. M. G. Rajanandh**, ,Professor, Department of Pharmacy Practice, SRM college of Pharmacy, Kattankulathur. More than 200 participants from different pharmacy institutions were benefited from this international conference.

Principal **Dr. CN Nalini,** Trustee **Mr. Shankar A**, Chief Guests **Dr. Karthik Rakam** CEO of Avenida Innovations, **Prof. M. Chandrasekar R**, Fulbright Scholar, University of Findlay USA, Secretary & Correspondent **Mr. SA. Ramesh** and Vice Principal **Dr. N Ramalakshmi** at the One Day International Conference on "Emerging Concepts in Patient's Care and Career Opportunities" on 10th February 2024

Prof. M. Chandrasekar R Fulbright Scholar, University of Findlay USA delivered speech on topic "Opportunities for Pharmacist in India and Abroad".

Dr. Karthik Rakam CEO of Avenida Innovations Interacted with Pharm D students

Dr. M. G. Rajanandh, Professor, Department of, Pharmacy Practice SRM College of Pharmacy, Kattankulathur delivered Speech on topic 'Patients Care through ethical conduct of research"

NATIONAL PHARMACY EDUCATION DAY – 2024

PharmaTab – "Crossword Competition" cash prize winners



Dr.V.Venkateshwarlu, Managing Director. NEUHIET, Pharma Techmologies pvt. Ltd. Hyderabad distributed cash prize to the winners of Crossord Competition in PharmaTab. **Mr P. Vinoth Kumar** II Pharm D (Ist prize), **Mr. M N Kalyan** II Pharm D (2nd prize), **Mr. R. Sriram V** Pharm D (3rd prize) and **Ms. V. Vaishnavi** V Pharm D (3rd prize)

CROSS WORD

Prepared by, Dr. Dhivya K, Assistant Professor

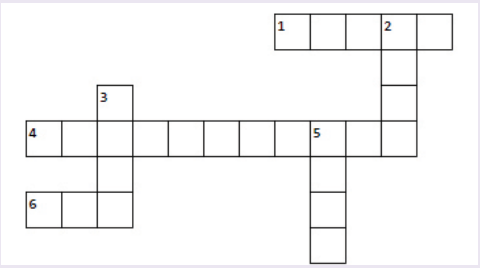
STUDENTS CORNER

ACROSS

1. A mutation in this gene cause permanent neonatal diabetes mellitus
4. A XXY syndrome
6. A rare disease that affects a person's height, muscles, skeleton, genitals, and appearance

DOWN

2. A protein that maintains the balance of salt and water of the body
3. Also known as Todd's syndrome
5. A type of tumor suppressor gene



Answer for the Word Puzzle previous issue (December-2023,Vol 4 Issue 4)

Across
3. Cretinism
4. Hypoadrenalism
6. Cortisol

Down
1. Endorphins
2. Fabkin/Leptin
5. MPL

CONGRATS TO THE WINNERS OF CROSS WORD PUZZLE

Previous Issue, (December 2023, Volume 04, Issue 04)

1. Mr. P. Vinoth Kumar II Pharm D
2. Mr. M N Kalyan II Pharm D

Send your answers to
pharmatabclbaid@gmail.com

First five winners name will be displayed in the next issue

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