JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS

A Degree Awarding Institution registered with the Higher Education Commission, Mauritius

JSS Health & Education Newsletter

Issue XIII

January – April 2025

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About JSS Academy of Higher Education and Research, Mauritius (JSSAHERM)

The JSS Academy of Higher Education and Research, Mauritius (JSSAHERM) was established in 2018 with degree-awarding powers and is an approved and registered institution with the Higher Education Commission (HEC), Mauritius.

JSSAHERM is located on a sprawling eight-acre freehold campus at Bonne Terre, Vacoas, the only one of its kind in the country, including some 15,000 sq. mts of built- up area with necessary academic, learning, and recreational infrastructure. The campus also comprises of hostels for boys' and girls' students, sports facilities such as Volleyball, Basketball, Football and in-door games. There are also residential units for staff and guests.

Building on its philosophy of quality education at affordable costs, JSSAHERM aims to present itself as the destination of choice for higher education and training in Mauritius and the Indian Ocean region.

JSSAHERM launched the Bachelor of Pharmacy (BPharm) programme in 2020 and Doctor of Pharmacy in 2023. The Bachelor of Pharmacy and Doctor of Pharmacy programmes of JSSAHERM have received Pre-accreditation from the Accreditation Council for Pharmacy Education (ACPE), USA, making JSSAHERM the first institution in the African region to get ACPE pre-accreditation. JSSAHERM has also received the accreditation of Doctor of Philosophy in Health Sciences, Life Sciences and Management Studies from HEC.

JSS Mahavidyapeetha (JSSMVP), Mysuru, India is the sponsoring society of JSSAHER, Mauritius. JSSMVP has established more than 350 educational institutions in India, Dubai, Mauritius, and USA, with a total student population over 100,000 and a staff strength of over 12, 000.

The parent institution for the establishment of JSSAHERM, is the JSS Academy of Higher Education & Research, Mysuru (JSS AHER, Mysuru, India), formerly known as the JSS University. JSSAHER, Mysuru, India has been ranked in 351 to 400 rank band by THE 2023 ranking. THE Subject Ranking 2023, JSSAHER, Mysuru is ranked in the band of 125 - 150 in the world and becomes the first institution in India in the subject 'Clinical and Health'. THE impact ranking 2024, JSSAHERM ranked 1st in the World for SDG 3 – Good Health & Well-being. Caring the legacy of JSSAHER Mysuru, JSSAHERM entered the international ranking for the first time and has been ranked in the band of 81-100 in Times Higher Education and Sub-Saharan Africa University Ranking 2024

The School of Pharmacy, JSSAHERM started its Newsletter "Health & Education" in the year 2021 (Triannual issues) with the aim to cover general information related to health care & pharma sector, the latest happenings in the world of science, scientific articles of students and staff members on health and life sciences, invited papers and views, drug-related information and event corner of the JSSAHERM etc.

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Inside this Issue

Forword from The Hon Mr Anil Kumar Baichoo, Minister, Ministry of Health and Wellness, Republic of Mauritius

Fake Medicine

Criminals are trying to benefit from the exponential growth in demand for personal hygiene and protection products by selling inferior or fraudulent goods like surgical masks and even health supplements. There are many false promises about medications that can prevent or even treat the infection. However, when you buy these, you have no idea what kind of medication you are getting or whether it is safe to take. What appears to be a remedy may actually be detrimental to your well-being. There are several reasons why counterfeit medications might be harmful. They might have been purposefully mislabelled or fabricated. The active substance in illegal medications is frequently present in incorrect amounts—either too little, too much, or not at all. It has been discovered that certain counterfeit medications contain cement, rat poison, arsenic, or mercury. In other situations, the medications might be authentic, but they may have been stolen, improperly maintained, or expired. This implies that they might be tainted or ineffectual. Numerous products are impacted, such as: Medical devices ranging from contact lenses to condoms; syringes to surgical instruments; wheelchairs to radiotherapy machines; "lifesaving medicines" like those used to treat cancer, malaria, HIV, and other serious illnesses; "lifestyle" medicines like erectile dysfunction and weight loss medications; and disposable surgical masks, hand sanitizers, antiviral and antimalarial medication, vaccines, test kits. The packaging of counterfeit medications is frequently of the highest calibre, with phony tablets that look just like the real thing. Sometimes the only way to tell the difference is to do a test in the lab. It is crucial to use caution while purchasing medications, particularly online.

Examine the medications in comparison to your typical prescription. If a medication has an excessive amount, insufficient amount, or any other substances, it is fake. Assertions of having distinct qualities or adverse effects; differs in size, shape, flavour, or colour; is either incorrectly or completely unlabelled; possesses an expired or absent expiration date; lacks instructions on how to keep the medication in storage; The package appears to have been tampered with or is poorly built; The box and instructions have spelling and grammar mistakes. Hence, it is crucial to recognise the fake pharmaceutical products for the better quality of life.

Dr Khayati Moudgil,
Editor in Chief

The Mauritian National Formulary: Myth or Reality

With the new government in place and its focus on positioning Mauritius as a pharmaceutical hub, coupled with the growing number of pharmaceutical product queries across various e-platforms, it is now more crucial than ever for the country to establish its own National Formulary.

Since 2016, the Pharmacy Board has registered approximately 8,000 Pharmaceutical Products for the retail market and around 300 of Pharmaceutical Products approved for use in Public Hospitals.

The Mauritian National Formulary (MNF) will be a critical tool for standardizing the selection, prescribing, and utilization of medicines within the country.

Moreover, it will serve as a comprehensive, evidence-based reference that will guide healthcare professionals in both prescribing treatments, safe dispensing by Pharmacists, thus ensuring optimal patient care.

The formulation of the MNF will help Pharmacists to improve drug availability at wholesale level, promote rational drug counselling at retail level, and enhance the quality of Pharmacy delivery by minimizing the risks of polypharmacy, drug interactions, and adverse effects.

The National Formulary surely will play a vital role in promoting safe, effective, and equitable healthcare, ensuring that both patients and providers have the necessary tools to manage and treat various health conditions.

While a National Formulary is a reality in some well-established healthcare systems, for others, it can still feel more like a myth due to challenges in implementation, limited scope, or lack of infrastructure. However, the push for a comprehensive National Formulary continues to grow, and it's something that could become a reality for the Mauritian healthcare system in the future.

The creation of a Mauritian National Formulary is a necessity, an essential tool for enhancing healthcare quality, efficiency, and safety across the nation.

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The Over-Prescription of Vitamin D in Mauritius: A Growing Concern

As a pharmacist with over 30 years of experience, I have witnessed a significant surge in the prescription and use of Vitamin D in Mauritius. While Vitamin D plays a crucial role in maintaining bone health, immune function, and overall well-being, the recent boom in its use raises important questions about its rationality and safety. There has been no official public Health campaign in Mauritius specifically addressing Vitamin D deficiency, yet prescriptions for Vitamin D have skyrocketed. A concerning trend is that many prescribers are now prescribing this supplement without first conducting blood profiling to assess individual needs. This practice could potentially lead to overuse and even toxicity in patients who don't require supplementation.

The Importance of Vitamin D

Vitamin D is vital for calcium absorption and bone health. Deficiencies can lead to a range of issues, such as osteoporosis, rickets, and weakened immunity. Traditionally, our bodies produce Vitamin D when exposed to sunlight, but modern lifestyles, with increased indoor activities and sunscreen use, have reduced natural Vitamin D production, leading to concerns about deficiency. However, not everyone requires Vitamin D supplementation. The body's need for Vitamin D is highly individual, and indiscriminate prescribing can lead to unnecessary intake, which poses risks, especially in cases of over-supplementation.

The Lack of Blood Profiling

In Mauritius, it is common to see patients prescribed Vitamin D without any prior blood testing to measure their actual Vitamin D levels. This lack of personalized care raises concerns. While Vitamin D is essential, excessive intake can lead to hypercalcemia (high calcium levels), kidney damage, and other serious health issues. The practice of prescribing Vitamin D without testing is risky, as it doesn't account for the fact that some people may already have sufficient or even excessive Vitamin D levels. Furthermore, Vitamin D toxicity can manifest with symptoms like nausea, vomiting, and kidney problems, which can be difficult to manage without proper monitoring.

Global Context

Globally, there has been an increasing trend in Vitamin D supplementation. The World Health Organization (WHO) and other health bodies recognize Vitamin D deficiency as a global public health issue, particularly in regions with limited sunlight. However, the growing use of Vitamin D supplements is not always based on clear scientific evidence of deficiency, and there are concerns about over-prescribing. In many countries, guidelines emphasize the importance of blood profiling and clinical evaluation before starting supplementation. Yet, despite these recommendations, the rise in public awareness and the growing health trends on social media have contributed to a widespread belief that everyone should be taking Vitamin D supplements.

A Call for Caution

As health professionals, it's our duty to ensure that patients are not only prescribed the right treatments but are also given personalized care. Blood profiling should be the first step in assessing whether a patient needs Vitamin D supplementation. This approach will help avoid unnecessary prescriptions, prevent potential toxicity, and ensure that patients are receiving the appropriate care for their individual health needs.

In Mauritius, it's crucial that both physicians and patients adopt a more cautious and evidence-based approach to Vitamin D supplementation. Ensuring proper diagnosis and individualized treatment will help maintain public health and prevent potential harm caused by overuse.

Conclusion

The increase in Vitamin D prescriptions in Mauritius seems to be based more on general trends and public awareness rather than on clinical necessity. Without proper blood profiling, there is a significant risk of over-supplementation and its associated dangers. As we move forward, it is essential that health practitioners prioritize personalized care, using blood tests to assess Vitamin D levels before recommending supplements. This approach will not only safeguard public health but also ensure that treatment is both effective and rational.

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Semaglutide: A Breakthrough in Diabetes and Obesity Management

This article is focused on the significant advancements in the field of Diabetes and Obesity management, the focus here will be on Semaglutide (known brands are Ozempic and Wegovy for example). This medication has significantly advanced the treatment of Type 2 Diabetes and Obesity. The following article will explore its chemical composition, mechanism of action, therapeutic applications, comparative analysis with other molecules, and the clinical trials that underscore its efficacy and success.

Chemical Composition

Semaglutide is a synthetic version of the human GLP-1 hormone which is a naturally occurring hormone that is crucial in regulating blood sugar levels. The chemical structure of semaglutide has been carefully designed to mimic this hormone while improving its stability and effectiveness.

Amino Acid Sequence:
Semaglutide is made up of 31 amino acids, similar to natural GLP-1, but with specific modifications to enhance its performance.

Acylation:
A C-18 fatty diacid chain is attached to the peptide, allowing it to bind to albumin in the blood. This extends its half-life to about one week, making it a convenient once-weekly injection.

Resistance to Degradation:
Semaglutide is engineered to resist breakdown by the enzyme DPP-4, which normally degrades natural GLP-1 quickly.

These modifications make Semaglutide a highly effective and long-lasting treatment option for patients.

Mechanism of Action
Semaglutide works by activating GLP-1 receptors in the body, which are found in the pancreas, brain and gastrointestinal tract. It has a multilayered mechanism of action which include addressing both sugar level control and weight management.

Pancreatic Effects:
Insulin Secretion: Semaglutide stimulates the release of insulin from the pancreas in response to meals, helping to lower blood sugar levels.

Glucagon Suppression: It reduces the release of glucagon, a hormone that raises blood sugar levels, thereby preventing excessive glucose production by the liver.

Gastrointestinal Effects:

Delayed Gastric Emptying: Semaglutide slows down the rate at which food leaves the stomach, which helps control blood sugar spikes after meals and promotes a feeling of fullness.

Central Nervous System Effects:

Appetite Regulation: By acting on the brain, Semaglutide reduces hunger and increases satiety, leading to significant weight loss in patients.

Cardiovascular Benefits:
Semaglutide has been shown to reduce the risk of major cardiovascular events, such as heart attacks and strokes, in patients with type 2 diabetes and existing heart disease.

Therapeutic Uses

Ozempic (Semaglutide) is primarily used for the management of Type 2 Diabetes, but it has also been approved for weight management under the brand name Wegovy (Semaglutide).

Type 2 Diabetes:

Ozempic is prescribed to adults with type 2 diabetes to improve blood sugar control when diet and exercise alone are not sufficient.

It is particularly beneficial for patients who have not achieved their target blood sugar levels with other medications.

Weight Management:

In 2021, the FDA approved Wegovy for chronic weight management in adults with obesity or overweight who have at least one weight-related health condition.

Clinical trials have shown that patients can lose an average of 15-20% of their body weight with semaglutide, making it one of the most effective treatments for obesity.

Cardiovascular Risk Reduction:

The SUSTAIN-6 trial demonstrated that semaglutide significantly reduces the risk of major cardiovascular events in patients with type 2 diabetes and heart disease.

Comparison with Other GLP-1 Receptor Agonists

Semaglutide stands out among other GLP-1 receptor agonists due to its unique chemical structure and long-lasting effects. Here's how it compares to other drugs in the same class:

Liraglutide (Victoza):

Requires daily injections due to its shorter half-life.
Less effective in terms of weight loss and blood sugar control compared to semaglutide.

Dulaglutide (Trulicity):

Also a once-weekly injection, but with a different fatty acid side chain.
Slightly less effective in promoting weight loss compared to semaglutide.

Exenatide (Byetta, Bydureon):

Derived from the saliva of the Gila monster.
Byetta requires twice-daily injections, while Bydureon is a once-weekly formulation.
Less effective in reducing HbA1c and body weight compared to Semaglutide.

Oral Semaglutide (Rybelsus):

The first oral GLP-1 receptor agonist, approved in 2019.
While convenient, it has slightly lower bioavailability compared to the injectable form of Semaglutide.

Successful Clinical Trials

The effectiveness and safety of Semaglutide have been proven in several major clinical trials. Below are the key studies that highlight its benefits:

SUSTAIN Trials:

- A series of phase 3 trials that evaluated Semaglutide in patients with type 2 diabetes.
- SUSTAIN-6: Showed a 26% reduction in the risk of major cardiovascular events, including heart attacks and strokes.
- Significant reductions in HbA1c (1.5-1.8%) and body weight (4-6 kg) were observed across the SUSTAIN program.

STEP Trials:

- Focused on weight management in non-diabetic individuals.
- STEP-1: Participants lost an average of 14.9% of their body weight, compared to 2.4% in the placebo group.
- STEP-4: Demonstrated that continued use of Semaglutide is necessary to maintain weight loss.

PIONEER Trials:

- Evaluated the efficacy and safety of oral Semaglutide (Rybelsus).
- Showed significant reductions in HbA1c and body weight, though slightly less pronounced than the injectable form.

Conclusion

Semaglutide is a game changing medication for the treatment of obesity and diabetes. It is a highly effective and convenient option for patients due to its multilayered mechanism of o action and long-lasting effects. Clinical trials have consistently shown its benefits in improving blood sugar control, promoting weight loss, and reducing cardiovascular risks. As research continues, Semaglutide may find new applications, further solidifying its place as a cornerstone of modern pharmacotherapy.

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Biotechnology in Waste Management: Plastic-Eating Bacteria & Bioremediation

Plastic pollution is a major environmental issue, with millions of tons of waste filling landfills and oceans. Sustainable solutions are essential to address this crisis. Biotechnology presents innovative methods for waste management, such as plastic-eating bacteria and microbial bioremediation. These natural processes offer a promising way to reduce pollution and create a cleaner, healthier planet.

Plastic-Eating Bacteria: A Breakthrough in Waste Degradation

Scientists have discovered bacteria capable of degrading plastic, a material that was once thought to be nearly indestructible. One of the most remarkable discoveries is *Ideonella sakaiensis*, a bacterium that produces an enzyme called PETase, which breaks down polyethylene terephthalate (PET), a common plastic used in bottles and packaging. Other bacterial strains, such as *Pseudomonas putida* and *Ralstonia eutropha*, have also demonstrated the ability to metabolize plastic waste into biodegradable compounds. The application of these bacteria in waste management systems could significantly reduce plastic accumulation. Researchers are exploring ways to enhance the efficiency of these microbes, including genetic modification to accelerate plastic degradation. If successfully implemented on a large scale, plastic-eating bacteria could revolutionize recycling and waste disposal methods. Bioremediation is a biotechnology-driven process that employs microorganisms to break down environmental pollutants, including plastics, heavy metals, and toxic chemicals. There are two main approaches:

1. **Bioaugmentation**: Introducing specific microorganisms into contaminated environments to accelerate degradation.

2. **Bio stimulation**: Enhancing the growth of native microbes by providing optimal conditions for pollutant breakdown.

These methods are being used to clean oil spills, wastewater, and industrial waste. In the case of plastic pollution, scientists are integrating plastic-eating bacteria into bioremediation strategies to enhance waste degradation in landfills and marine environments.

Integration of Plastic-Eating Bacteria and Bioremediation

The use of plastic-eating bacteria and bioremediation offers a new way to address plastic pollution. By leveraging the abilities of these microorganisms, scientists are developing better waste management methods. This approach can be used in industries where plastic waste is treated with special enzymes before undergoing bioremediation. Researchers are also exploring genetically modified microbes that can break down plastic faster and more effectively, improving sustainability. Plastic waste affects not only the environment but also human health. Microplastics from degraded plastic can enter the food chain and accumulate in the body, causing potential health problems. Chemicals like BPA and phthalates, found in plastics, have been linked to hormone issues and reproductive disorders. Using biotechnological solutions such as plastic-eating bacteria and bioremediation can help reduce plastic contamination in

water, soil, and air, lowering human exposure to these risks. A cleaner environment leads to better public health and fewer diseases caused by plastic pollution.

Future Prospects and Challenges

While biotechnology offers promising solutions, there are challenges in scaling up these microbial approaches. The efficiency of plastic degradation varies depending on environmental conditions, and there is still much research needed to optimize the process. Moreover, public awareness and regulatory support are essential for the widespread adoption of these technologies.

However, with continuous advancements in genetic engineering, synthetic biology, and environmental biotechnology, plastic-eating bacteria and bioremediation could become essential tools in the fight against plastic pollution.

Can biotechnology offer a lasting solution to plastic waste?

Yes, biotechnology offers a powerful solution through plastic-eating bacteria and bioremediation. These methods have the potential to significantly reduce plastic pollution, providing a cleaner, more sustainable future. By advancing research and incorporating these technologies into waste management systems, we can tackle the global plastic crisis and move closer to a more sustainable world.

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Fucoidan: The Seaweed-Derived Powerhouse Reshaping Cancer Therapy

In the relentless pursuit of effective cancer therapies, the health sector has increasingly turned its gaze toward natural compounds with potent anticancer properties. Among these, fucoidan—a sulfated polysaccharide derived predominantly from brown seaweeds—has emerged as a promising candidate. Beyond its traditional use in Asian medicinal practices, fucoidan has garnered scientific attention for its multifaceted biological activities, notably its anticancer effects.

Unveiling Fucoidan's Anticancer Mechanisms

Extensive research has elucidated several pathways through which fucoidan exerts its anticancer effects:

1. Induction of Apoptosis: Fucoidan has been shown to trigger programmed cell death in various cancer cell lines. In human prostate cancer PC-3 cells, for instance, fucoidan activates both intrinsic and extrinsic apoptotic pathways. This dual activation involves the modulation of key signalling molecules, including the activation of ERK1/2 MAPK and inhibition of PI3K/Akt pathways, culminating in cancer cell apoptosis.

2. Cell Cycle Arrest: By disrupting the normal progression of the cell cycle, fucoidan effectively hampers cancer cell proliferation. Studies have demonstrated that fucoidan treatment leads to the upregulation of cell cycle inhibitors like p21^Cip1/Waf1 and the downregulation of proteins such as E2F-1, thereby arresting the cell cycle and inhibiting tumour growth.

3. Inhibition of Metastasis and Angiogenesis: Fucoidan's ability to impede metastasis is partly attributed to its anti-angiogenic properties. Research indicates that fucoidan reduces the expression of vascular endothelial growth factor (VEGF) in cancer cells, leading to diminished formation of new blood vessels essential for tumour growth and metastasis.

4. Immune System Modulation: Enhancing the body's immune response is another avenue through which fucoidan combats cancer. Studies have shown that fucoidan can stimulate the activity of natural killer (NK) cells and macrophages, bolstering the immune system's ability to target and eliminate cancer cells.

Clinical Implications and Future Directions

The integration of fucoidan into cancer therapy regimens holds significant promise. Its natural origin and low toxicity profile make it an attractive adjunct to conventional treatments. Ongoing clinical trials are exploring the synergistic effects of combining fucoidan with standard chemotherapeutic agents, aiming to enhance efficacy while minimizing adverse effects. As research progresses, fucoidan may well become a cornerstone in the development of more effective and less harmful cancer therapies.

In conclusion, fucoidan's diverse anticancer mechanisms—ranging from apoptosis induction and cell cycle arrest to metastasis inhibition and immune modulation—underscore its potential as a valuable asset in the fight against cancer. Continued exploration and clinical validation of fucoidan's therapeutic benefits could pave the way for its widespread adoption in oncological practice.

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Abortion Access: Global Controversies, Local Perceptions, and Policy Implications

The World Health Organization (WHO) defines abortion as the termination of a pregnancy before a foetus is viable. This means before the foetus can live independently outside the womb. The debate on abortion generally revolves around two perspectives: pro-choice (supporting a woman's right to decide) and pro-life (emphasizing the right to life of the unborn foetus). Discussions also focus on access to safe abortion procedures, women's reproductive rights, and the psychological and social impacts of abortion.

It is a highly debated topic worldwide, with ethical, moral, legal, and medical considerations. While nations like the U.S., Argentina, and parts of Europe have seen legal battles over abortion rights, others, such as Poland and some African and Latin American countries, have imposed stricter restrictions. In January 2025, U.S. President Donald J. Trump reinstated the "Global Gag Rule"; a policy that will decrease access to abortion on an international level as the action aims at cutting funds to health organizations in other countries that provide abortion services or information, even for victims of sexual assault.

On the local plan in Mauritius, Afrobaromoter conducted a survey between April and May of 2024 to study the current stance of Mauritians support on the subject of "access to contraceptives regardless of age", and the study found that:

1. More than half (56%) of Mauritians say that contraceptives should be available to anyone who is sexually active regardless of age and only about half as many (26%) oppose such a policy.

2. Men are more likely than women to favour making contraceptives available regardless of age, as are urbanites and more educated citizens as compared to their less educated counterparts

3. Younger respondents are more supportive of this view than the older cohorts.

4. More than four in 10 citizens (43%) say women and girls in their community "rarely" (24%) or "never" (19%) terminate their pregnancies, while about one-fifth (22%) describe this as an "occasional" (17%) or frequent (5%) occurrence. More than one- third (35%) of respondents say they don't know how often pregnancies are terminated or declined to answer the question.

5. By solid majorities, Mauritians say terminating a pregnancy is "sometimes" or "always" justified under certain circumstances: if the woman's life or health is in danger, if the pregnancy is the result of rape or incest or if economic hardship would not allow the mother to take care of the child.

6. A slimmer majority (53%) endorse termination if the pregnancy is unwanted.

On the legal side, as from June 2012, abortion was permitted in the first 14 weeks of pregnancy, following amendments to Article 235 of the Mauritian Penal Code, without restrictions, on four grounds: risk to the life; risk to the physical and mental health; foetal anomaly on the advice of medical specialists; and as a result of rape or sexual relations with minor, where the case is

reported to the police or a doctor. However, on the practical side, these reforms have not affected the number of clandestine abortions happening as the proving the reason for abortion takes too long.

Medical methods of abortion include:

1. Medication: The two primary drugs used are mifepristone and misoprostol.

   a) Mifepristone blocks the hormone progesterone, preventing the continuation of pregnancy.
   b) Misoprostol induces contractions to expel the pregnancy tissue. This method is effective in early pregnancy, typically up to 10-12 weeks.

2. Surgical procedures like vacuum aspiration or dilation and curettage (D&C)

3. Induced Abortion.

In conclusion, the topic remains complex and sensitive to this date, influenced by legal frameworks, healthcare policies, and individual beliefs. The World Health Organization (WHO) reports that unsafe abortions continue to be a major public health concern, particularly in countries where access is limited. Women who cannot obtain legal abortions often turn to dangerous methods, increasing the risk of complications, long-term health issues, or even death. Advocates for reproductive rights argue that safe, legal abortion is essential for public health and gender equality, emphasizing that restrictive laws do not eliminate abortions but instead push them underground.

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Organic Heart Disease

Organic heart disease refers to structural and functional abnormalities of the heart, often resulting from condition like Coronary artery disease, Cardiomyopathy, or Valvular disorders. According to World Health Organization (WHO) cardiovascular disease is the leading cause of worldwide accounting for an estimated 17.9 million deaths annually. Organic Heart Disease remains a critical global health issue, necessitating continued efforts in prevention, early detection and management to mitigate its impact on populations worldwide. Organic heart disease is a condition that permanently or temporarily changes the structure of the heart that results from damage to its tissue. This condition can be caused by congenital defects, infections, ischemia, inflammation, or degenerative changes.

Causes

Organic heart disease results from structural abnormalities or damage to the heart. The causes depend on the type of heart disease.

1. Coronary Artery Disease (CAD)
2. Valvular Heart Disease
3. Congenital Heart Defects
4. Cardiomyopathy
5. Hypertensive Heart Disease

Symptoms

1. Chest pain or Discomfort
2. Shortness of breath (during activity or at rest)
3. Fatigue and weakness
4. Swelling (Swollen legs, ankles, or feet)
5. Palpitations
6. Heartburn and indigestion

Treatment:

Medications for organic heart disease include Beta blockers, Anticoagulants, Nitrates, and Calcium channel blockers.

1. **Beta Blockers:** To reduce heart rate and blood pressure.
   Examples: Atenolol, Bisoprolol, Metoprolol, and Nebivolol.
2. **Nitrates:** Dilate blood vessels, increasing blood and oxygen supply to the heart.
   Examples: dinitrate, isosorbide mononitrate, and nitro-glycerine.
3. **Calcium channel blockers:** Decrease blood pressure by relaxing the muscles in artery walls.
4. **Statins:** lower cholesterol levels.

Prevention of Organic Heart Disease

1. Healthy diet
2. Regular Exercise
3. Smoking cessation
4. Limiting alcohol intake
5. Stress management

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Understanding MicroRNA: The Molecules with Big Impact

Introduction

MicroRNAs (miRNAs) are small, non-coding RNA molecules that play a crucial role in the regulation of gene expression. Discovered in the early 1990s, these tiny RNA sequences, typically about 22 nucleotides long, have since been recognized as key players in a wide array of biological processes and diseases. By binding to messenger RNAs (mRNAs) and inhibiting their translation or promoting their degradation, miRNAs can finely tune the protein output of cells. This article delves into the discovery, biogenesis, function, and potential therapeutic applications of miRNAs.

Discovery of MicroRNAs

The first miRNAs were identified in the nematode Caenorhabditis elegans in the early 1990s. The lin-4 gene, discovered by Victor Ambros and colleagues, was found to produce small RNA molecules that regulated the development of the worm by repressing the translation of specific mRNAs. Later, in 2000, another miRNA, let-7, was discovered in C. elegans by Gary Ruvkun's group. This finding was pivotal as let 7 was found to be conserved across a wide range of species, including humans, suggesting a fundamental biological role.

Biogenesis of MicroRNAs

The production of miRNAs involves multiple steps and occurs mainly in the cell nucleus and cytoplasm. The process begins with the transcription of miRNA genes by RNA polymerase II or III, producing a primary miRNA (pri-miRNA) transcript. This transcript is then cleaved by the Drosha-DGCR8 complex in the nucleus to produce a precursor miRNA (pre-miRNA), which is approximately 70 nucleotides long. The pre-miRNA is exported to the cytoplasm by Exportin-5, where it is further processed by the Dicer enzyme, resulting in a mature miRNA duplex. One strand of this duplex, known as the guide strand, is incorporated into the RNA-induced silencing complex (RISC), where it guides the complex to target mRNAs to regulate gene expression.

Functions of MicroRNAs

miRNAs are involved in the regulation of numerous cellular processes, including development, differentiation, proliferation, and apoptosis. By binding to complementary sequences in the 3' untranslated regions (UTRs) of target mRNAs, miRNAs can suppress gene expression through two main mechanisms:

1. Translational Repression

When miRNAs bind to their target mRNAs, they can inhibit the translation process, preventing the ribosome from synthesizing the corresponding protein. This mechanism allows cells to quickly respond to changes in their environment by regulating the protein levels without altering the underlying mRNA levels.

2. mRNA Degradation
miRNAs can also promote the degradation of target mRNAs by recruiting enzymes that cleave the mRNA molecule. This results in a decrease in the mRNA levels, thereby reducing the amount of protein produced.

MicroRNAs in Health and Disease

Given their role in regulating gene expression, it is not surprising that miRNAs are implicated in a wide range of diseases, including cancer, cardiovascular diseases, neurological disorders, and viral infections.

Cancer
In cancer, miRNAs can function as either oncogenes or tumour suppressors. Dysregulation of specific miRNAs can lead to uncontrolled cell proliferation, resistance to apoptosis, angiogenesis, and metastasis. For example, miR-21 is commonly upregulated in various cancers and promotes tumour growth, while let-7 is often downregulated and acts as a tumour suppressor by inhibiting oncogenes such as RAS and MYC.

Cardiovascular Diseases
miRNAs are also involved in the regulation of cardiovascular development and function. Aberrant expression of miRNAs has been linked to heart diseases such as myocardial infarction, heart failure, and arrhythmias. For instance, miR-1 and miR-133 are crucial for cardiac muscle development and function, and their dysregulation can lead to cardiac hypertrophy and arrhythmias.

Neurological Disorders
In the nervous system, miRNAs are essential for neuronal development, synaptic plasticity, and neuroprotection. Dysregulation of miRNAs is associated with neurological disorders such as Alzheimer's disease, Parkinson's disease, and schizophrenia. For example, miR-132 is important for neuronal outgrowth and synaptic function, and its altered expression has been linked to cognitive deficits in Alzheimer's disease.

Therapeutic Potential of MicroRNAs

The ability of miRNAs to regulate gene expression makes them attractive targets for therapeutic intervention. Several strategies are being explored to modulate miRNA activity in diseases:

1. miRNA Mimics
miRNA mimics are synthetic molecules designed to mimic the function of endogenous miRNAs. They can be introduced into cells to restore the function of downregulated miRNAs, thereby suppressing disease-related genes. This approach is being investigated for the treatment of cancers and viral infections.

2. AntagomiRs
AntagomiRs are chemically modified antisense oligonucleotides that specifically bind to and inhibit the activity of target miRNAs. By blocking the function of overexpressed miRNAs, antagomiRs can potentially reverse pathological processes. This strategy is being explored for diseases such as cancer and cardiovascular disorders.

3. miRNA Sponges

miRNA sponges are RNA molecules that contain multiple binding sites for a specific miRNA, effectively sequestering the miRNA and preventing it from interacting with its target mRNAs. This approach can be used to inhibit the function of miRNAs involved in disease.

Conclusion

MicroRNAs, though small in size, have a profound impact on gene regulation and are involved in a multitude of biological processes and diseases. The discovery and study of miRNAs have

opened new avenues for understanding the complexity of gene regulation and for developing innovative therapeutic approaches. As research in this field continues to advance, miRNAs hold great promise for improving human health and treating various diseases. In 2024 Victor Ambros and Gary Ruvkun were awarded the Nobel prize for their discovery of microRNA and its role in post transcriptional gene regulation.

Reference:

1. National library of medicine, NIH

2. NobelPrize.org. Nobel Prize Outreach 2025.

3. The Current State and Future Prospects of RNAi-Based Therapeutics, Pub Med

Curated by:

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Unlocking the future of Women's Health: The Power of Pharmacogenomics

Pharmacogenomics is a relatively new field which combines pharmacology and genomics to develop effective, safe medications and doses that will be tailored to a person's genetic make-up hence it is increasingly relevant in women's health. Since men and women can metabolize and respond to medications differently due to biological differences, pharmacogenomics can help tailor treatments to achieve more effective and safer outcomes for women.

While pharmacogenomics can benefit everyone, it is crucial for women's health due to several factors:

1. **Personalized Medicine:** Pharmacogenomics testing can help identify the most effective medications and doses for women based on their genetic makeup. Moreover, for some women specific conditions such as PCOS and endometriosis pharmacogenomics can help to assess how women respond to certain medications in order to improve treatment plans.

2. **Gender Differences in drug metabolism:** Research shows that women may respond differently to medications due to hormonal fluctuations and genetic factors. For instance, drugs like warfarin, a blood thinning medication, may require different dosing in women compared to men due to genetic variations affecting the drug metabolism.

3. **Reproductive health:** Pharmacogenomics plays a key role in understanding how medications can affect women during pregnancy, breastfeeding or during menopause. For example, medication use is common in pregnancy, but pregnancy-specific prescribing information is lacking for the majority of drug as during pregnancy.

4. **Autoimmune Diseases and Cancer:** Women are more likely to suffer from autoimmune diseases like lupus or rheumatoid arthritis, and pharmacogenomics can help optimize treatment strategies for these conditions. Additionally, women are at higher risk for certain cancers (e.g., breast cancer), and pharmacogenetic testing can guide the choice of chemotherapy or other treatments based on genetic markers that predict drug response.

5. **Mental Health:** Women are at a higher risk for mental health disorders such as depression, anxiety, and post-traumatic stress disorder. Pharmacogenetic testing can assist in selecting the most appropriate antidepressant or antianxiety medication.

Pharmacogenomics in women's health is still evolving, but it holds great potential for improving outcomes by considering genetic differences that influence drug metabolism, effectiveness, and safety.

Reference:

1. https://www.cdc.gov/genomics-and-health/pharmacogenomics/index.html

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Pharmacist's role in Parkinson's Disease

Parkinson's disease (PD) is a progressive neurodegenerative disorder that primarily affects movement, leading to tremors, rigidity, bradykinesia (slowness of movement), and postural instability. As a major health concern for the aging population, prevention of PD has become a topic of interest in medical research and clinical practice. Even though there is currently no cure for Parkinson's disease, preventive measures, early detection, and appropriate pharmacologic interventions may slow disease progression and improve quality of life for patients.

It is caused by the degeneration of dopaminergic neurons in the substantia nigra, a region of the brain that plays a key role in movement.

Pharmacists play an essential role in managing Parkinson's disease by optimizing pharmacotherapy, providing education, monitoring for adverse effects, and supporting overall patient care.

Pharmacist's Involvement in Drug Therapy Management

As a pharmacist based in the community, you have a great opportunity to establish an ongoing relationship with people who have PD and get to know how the condition affects them and their health.

1. Educate your patients on what medication they are taking, the correct dosages and that there are no potentially harmful interactions between different medications.

2. Explain how their medication works and assist with complex medication schedules.

3. Explain what side effects they can expect and guide patients on different formulations of medications,

4. Pharmacists can help identify and manage the "wearing-off" phenomenon, where Parkinson's symptoms return before the next scheduled dose of medication, by optimizing treatment strategies.

Pharmacists are integral members of the healthcare team, particularly when it comes to optimizing medication regimens.

The primary drugs for PD treatment are dopaminergic agents, which include levodopa, dopamine agonists, monoamine oxidase inhibitors (MAOIs), and catechol-O-methyltransferase (COMT) inhibitors.

Patient Education and Counselling

Pharmacists have a unique opportunity to provide education and counselling to patients with PD and their caregivers. Ensuring that patients understand the nature of the disease and the role of their medications is essential for adherence and quality of life.

1) Medication Adherence: Patients with PD often need to take medicines multiple times a day, Pharmacists counsel on the importance of consistent medication schedules, potential side effects, and managing missed doses.

2) Dietary Considerations: Levodopa absorption can be influenced by dietary proteins. Pharmacists may educate patients on adjusting meal timing to optimize the efficacy of their medication and avoid interactions with high-protein foods.

3) Lifestyle Modifications: Pharmacists can guide patients on incorporating physical therapy, exercise, and stress management techniques that complement their pharmacotherapy.

Impulsive and compulsive behaviour
With some Parkinson's drugs, particularly dopamine agonists and in some of cases levodopa, some people experience problems with impulsive and compulsive behaviour such as:

1. Gambling

2. Compulsive spending

3. Binge eating

4. Hypersexuality

If people are concerned about this behaviour, they should speak to their specialist about getting their medication reviewed. However, people with PD should not suddenly stop taking their medication as this may make other symptoms worse. Pharmacists should inform carers and family members of these behaviours as they might recognise changes first.

Drugs to avoid.

Any drug that blocks dopamine receptors could make the symptoms of PD worse or even mimic Parkinson's symptoms without the condition being present. Because of this it is vital that you think through the mechanisms of action when a person with Parkinson's is prescribed, or is considering purchasing, a new over-the-counter medicine.

Pharmacist should use some drugs with caution and Parkinson's symptoms should be monitored. In other cases, some drugs should be avoided.

Collaborative Care

1. **Working with healthcare providers:** Pharmacists collaborate with neurologists, movement disorder specialists, and other healthcare professionals to ensure coordinated care for patients with Parkinson's.

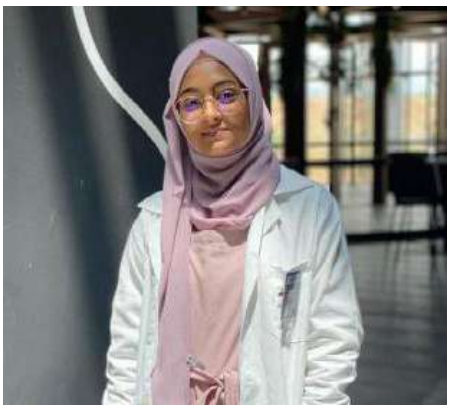
2. **Participating in clinics:** Some pharmacists participate in outpatient clinics, reviewing patients' medications, providing drug information, and offering patient education.

3. **Monitoring drug treatment effects:** Pharmacists can monitor the effectiveness of medications and make recommendations for adjustments as needed.

Reference:

1. Parkinson’s disease: pathophysiology and clinical management. The Lancet Neurology.

2. Katz, J. (2009). The role of the pharmacist in Parkinson's disease management. Pharmacy Practice



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The Sun and your Medication

Sun exposure plays an important role in our lives, helping us to produce vitamin D which is important for the absorption of calcium for stronger and healthier bones. However, persistent exposure to UV rays cause harm to skin, eyes and immune system eventually becoming a leading cause of skin cancer. Surviving the sweltering summer is not easy for everybody specially for those who are on medication which make one susceptible to heat and sunlight.

How does the skin react to UV light?

There are 3 types of UV rays:

1. UVA - wavelengths 320 to 400 nm
2. UVB - wavelength 280 to 320 nm
3. UVC - wavelength 100 to 280 nm

Out of the 3 UV rays only UVA and UVB reach the earth's surface.

When the UV rays reach the skin, they react to produce melanin which is the first line of defence against the sun which lead to the formation of a tan. If the sun exposure is for a longer time a sunburn is seen due to a decreased ability to produce melanin by the skin. Sun-sensitizing drugs are drugs that have side effects when people taking them are exposed to bright sun for a longer period of time. These reactions are caused by the exposure to UVA and UVB rays.

There are 2 main sun-sensitizing reactions.

1) **Photo allergy –** When the skin is exposed to sunlight, some particular medication which are applied on it react with the UV light causing structural damage of the drug molecules. As a result, antibodies are produced which cause the sun-sensitivity reaction. The reaction usually includes an eczema-type rash which can spread all over the body.

2) **Photo toxicity –** This is the most common type of reaction which occurs when the skin is exposed to sunlight after taking certain medicines orally, topically or intravenously. The drug therefore absorbs the UV light and then released it into the skin causing cell death.

The common drugs which can cause sensitivity:

1. Antibiotics (ciprofloxacin, doxycycline, levofloxacin, ofloxacin, tetracycline, trimethoprim)

2.Antifungals (flucytosine, griseofulvin, voriconazole)

3.Antihistamines (cetirizine, diphenhydramine, loratadine, promethazine, cyproheptadine)

4.Cholesterol-lowering drugs (simvastatin, atorvastatin, lovastatin, pravastatin)

5.Diuretics (thiazide diuretics: hydrochlorothiazide, chlorthalidone, chlorothiazide.; other diuretics: furosemide and triamterene)

6.Non-steroidal anti-inflammatory drugs (ibuprofen, naproxen, celecoxib, piroxicam, ketoprofen)

7.Oral contraceptives and estrogens

8.Phenothiazines (tranquilizers, anti-emetics: examples, chlorpromazine, fluphenazine, promethazine, thioridazine, prochloroperazine)

9.Psoralens (methoxsalen, trioxsalen)

10.Retinoids (acitretin, isotretinoin)

11.Sulfonamides (acetazolamide, sulfadiazine, sulfamethizole, sulfamethoxazole, sulfapyridine, sulfasalazine, sulfasoxazole)

12.Sulfonylureas for type 2 diabetes (glipizide, glyburide)

13.Alpha-hydroxy acids (AHAs) in cosmetics

Skin reactions that are observed in some people when the above drugs are taken.

1. Rash
2. Itchiness
3. Redness
4. Swelling
5. Blisters
6. Peeling

What should be done to reduce the reaction risk?

1. Avoid going under the sun during peak hours and when outside seek shade.

2. Wear long sleeved clothes and hats to limit skin exposure.

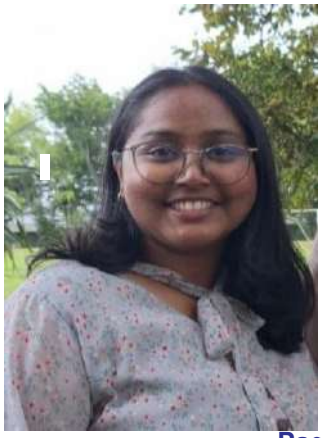
3. Apply sunscreen with minimum SPF 30.

In conclusion, it is not the case that if somebody has extra melanin production, he/she will not be affected by the UV rays. However, it is important to note that not everybody will get these reactions when taken the above drugs. It can be a onetime occurrence or only when one is taking these drugs and is in direct contact of sunlight.

Reference:

1. https://theconversation.com/drugs-and-the-sun-your-daily-medications-could-put-you-at-greater-risk-of-sunburn-170559

2. https://www.fda.gov/drugs/special-features/sun-and-your-medicine



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Hospital vs. Community Pharmacy: Exploring Key Differences in Care and Roles

A pharmacist is described as a healthcare professional who prepares and dispenses medications, ensures their safe and effective use and advises patients on proper usage. According to latest data, there are 574 pharmacists working in Mauritius.

Features	Hospital Pharmacy	Community Pharmacy
1. Work environment	- Works inside a clinic or clinical setting, regularly as a portion of a multidisciplinary healthcare group. They may be included in coordinate quiet care, working closely with specialists, medical attendants, and other healthcare experts.	- These professionals work in retail environments like local pharmacies, drug stores. They engage directly with customers, offering guidance on medications and providing health-related advice.
2.Patient interaction	- Ordinarily bargains with inpatients and outpatients who are frequently beneath the care of a healthcare group. They may have more specialized intuition, such as prompting on complex pharmaceutical regimens or overseeing medicines for basically sick patients.	- Involves interacting with the public, including individuals managing long-term health conditions, looking for over-the-counter remedies, or needing health guidance. The interactions tend to be more frequent but brief in nature.
3. Roles and Responsibilities	- Included within the arrangement and allotment of medicines, counting intravenous (IV) drugs. - Collaboration with specialists to alter medicine regimens based on understanding needs (e.g., renal or liver brokenness). - Overseeing clinical sedate trials. - Giving sedate data to the restorative group.	- Dispensing prescribed medications to patients. - Offering advice and products for over-the-counter health needs. Managing medication therapy, which includes monitoring for drug interactions and educating patients. - Administering preventive healthcare services, such as vaccinations.
4. Statistics	- As of the latest available data, there are 380 community pharmacies operating throughout Mauritius.	- As of mid-2019, Mauritius had 386 private drugstores and 33 pharmaceutical wholesalers. The pharmaceutical market is expected to grow by 2.45% annually from 2025 to 2029, reaching US$138.80 million by 2029.

5. Training and qualifications	- Requires a Pharm D degree /M Pharm degree. - Regularly requires specialized training or residency programs in clinical drug stores to pick up in-depth information of medicate treatment administration within the healing center setting. - May require extra preparing or residency programs, particularly for specialized parts such as basic care, oncology, or irresistible malady drug stores.	- Pharmacists generally require a BPharm degree and a license to practice. Additionally, some community pharmacies may ask for specialized certifications, such as in immunization or Diabetes care.
6. Technology use	- Frequently, employment progressed innovation for medicine apportioning, electronic wellbeing records (EHRs), and clinical choice back frameworks. They may too be included within the advancement and execution of these frameworks.	- They utilize point-of-sale systems, electronic health records (EHR), and medication management software.
7. Medication management	- Oversees solutions for patients who are frequently intensely sick or require specialized care. They may be dependable for guaranteeing the secure and viable utilization of medicines in a controlled environment	- They manage medications for patients who are stable and capable of taking care of themselves at home. - Their main role is to ensure patients are well-informed about the proper and safe use of their medications.
8. Work hours	- May work unpredictable hours, counting evenings, ends of the week, and occasions, particularly in 24-hour healthcare offices.	- They usually work standard business hours, but some community pharmacies may have extended hours or remain open on weekends.
9. Focus on research and education	May be included in clinical inquire about, sedate trials, and the instruction of healthcare experts, counting drug store understudies and inhabitants.	Their focus is primarily on patient education and public health initiatives, like promoting vaccination campaigns and offering health education workshops.
10. Regulatory and administrative responsibilities	- May be included in hospital-specific administrative compliance, such as guaranteeing adherence to Joint Commission guidelines, overseeing sedate formularies, and supervising medicine security conventions.	- They oversee the proper storage and handling of medications, maintain accurate patient records, and ensure that prescriptions are filled accurately. They may also supervise pharmacy staff, handle medication dispensing protocols, and manage patient

		safety initiatives.
11. Collaboration	- Works closely with other healthcare experts, such as doctors, medical caretakers, and dietitians, to optimize quiet care. They may too be included in clinic committees, Medicare utilization surveys, and approach improvement.	- They work closely with primary care physicians and other healthcare providers. They may also refer patients to other healthcare services when necessary.

Reference:

1. https://www.medicalstaffing.co.uk/blog/2024/08/difference-between-pharmacist-and-clinical-pharmacist

2. https://www.news-medical.net/health/Types-of-Pharmacy.aspx

3. http://STATISTA.COM

4. http://HEALTH.GOVMU.ORG

5. https://iris.who.int/bitstream/handle/10665/59169/WHO_PHARM_94.569.pdf

Curated by:

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FDA APPROVED DRUGS

S.N	Drug	Indication	Date of Approval
	Omvoh (mirikizumab-mrkz)	Injection for Crohn's Disease	15/01/25
	Calquence (acalabrutinib)	Capsules and Tablets for Previously Untreated Mantle Cell Lymphoma	16/01/25
	Lumakras (sotorasib)	Tablets for Lumakras and Vectibix Combination for Chemorefractory KRAS G12C-Mutated Metastatic Colorectal Cancer	16/01/25
	Datroway (datopotamab deruxtecan-dlnk)	Lyophilized Powder for Injection for Breast cancer	17/01/25
	Spravato (esketamine)	Nasal Spray for Monotherapy for Adults with Treatment- Resistant Depression	17/01/25
	Grafapex (treosulfan) Lyophilized Powder for Injection	Lyophilized Powder for Injection for Stem Cell Transplant Conditioning	22/01/25
	Enhertu (fam-trastuzumab deruxtecan-nxki)	Injection for HER2-Low or HER2-Ultralow Metastatic Breast Cancer	28/01/25
	Ozempic (semaglutide)	Injection to Reduce the Risk of Worsening Kidney Disease and Cardiovascular Death in Adults with Type 2 Diabetes and Chronic Kidney Disease	28/01/25
	Avtozma (tocilizumab-anoh) Injection	Injection for Rheumatoid Arthritis, Giant Cell Arteritis, Polyarticular Juvenile Idiopathic Arthritis, Juvenile Rheumatoid Arthritis, COVID-19	30/01/25
	Journavx (suzetrigine)	Tablets for pain management	30/01/25
	Symbravo (meloxicam and rizatriptan)	Tablets for Migraine	30/01/25

	Onapgo (apomorphine hydrochloride) Subcutaneous Infusion Device - formerly SPN-830	Subcutaneous infusion formulation of the approved dopaminergic against Apo morphine for the treatment of motor fluctuations in adults with advanced Parkinson's Disease	04/02/25
	Emblaveo (avibactam and aztreonam) Lyophilized Powder for Injection	Used for the treatment of complicated intra-abdominal infections.	07/02/25
	Gomekli (Mirdametinib)	For neurofibromatosis type 1	11/02/25
	Brentuximab vedotin with lenalidomide and rituximab	Used for relapsed or refractory large cell lymphoma	12/02/25
	Xbryk (denosumab-dssb) Injection	Treatment for: Osteolytic Bone Lesions of Multiple Myeloma, Osteolytic Bone Metastases of Solid Tumours, Giant Cell Tumour of Bone, Hypercalcemia of Malignancy	13/02/25
	Ospomyv (denosumab-dssb) Injection	Used in the treatment of osteoporosis.	13/02/25
	Merilog (insulin aspart-szjj) Injection	It improves glycemic control in adults and pediatric patients with diabetes mellitus.	14/02/25
	Vimkunya (chikungunya vaccine, recombinant) Injection	A vaccine used for the prevention of disease caused by chikungunya virus.	14/02/25
	Penmenvy (meningococcal groups A, B, C, W, and Y vaccine) Lyophilized Powder for Injection	Treatment for: Meningococcal Disease Prophylaxis	14/02/25
	Romvimza (vimseltinib) Capsules	Used for the treatment of patients with tenosynovial giant cell tumour.	14/02/25
	Ctexli (chenodiol) Tablets	For the treatment of cerebrotendinous xanthomatosis in adults.	21/02/25

	Miudella (copper) Intrauterine System	For prevention of pregnancy in females of reproductive potential for up to 3 years.	24/02/25
	Encelto (revakinagene taroretcel-lwey)	For the treatment of advanced or metastatic cancer with specific genetic mutations.	05/03/25
	Omlyclo (omalizumab-igec)	For the treatment of moderate to severe asthma and chronic idiopathic urticaria (hives).	07/03/25

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Drug Profile: Lumacras (Sotorasib)

Drug Profile: Lumakras (Sotorasib)

Generic Name: Sotorasib

Brand Name: Lumakras

Drug Class: KRAS G12C Inhibitor

Indication

Treatment of adults with KRAS G12C-mutated locally advanced or metastatic non-small cell lung cancer (NSCLC) who have received at least one prior systemic therapy. Also indicated in combination with panitumumab for KRAS G12C-mutated metastatic colorectal cancer (mCRC) in adults who have received prior chemotherapy.

Mechanism of Action

Sotorasib is a first-in-class KRAS G12C inhibitor. It binds irreversibly to the cysteine residue in the KRAS G12C mutant protein, locking it in an inactive GDP-bound state. This inhibition disrupts downstream signaling pathways, including the MAPK and PI3K pathways, thereby reducing cancer cell proliferation and survival.

Dosage and Administration

- **Recommended Dose:** 960 mg orally once daily.
- **Administration:** Taken with or without food, swallowed whole with water. Do not crush, chew, or split the tablets.

Pharmacokinetics

1. Absorption: Rapidly absorbed; peak plasma concentration occurs within 1-2 hours after dosing.

2. Distribution: High volume of distribution; extensively bound to plasma proteins.

3. Metabolism: Primarily metabolized by non-CYP mediated pathways, with minor contributions from CYP3A.

4. Elimination: Excreted mainly via faces; half-life approximately 5 hours.

Adverse Reactions
Common side effects include:
1. Diarrhea
2. Nausea
3. Fatigue
4. Hepatotoxicity (elevated liver enzymes)
5. Musculoskeletal pain

Warnings and Precautions

1. Hepatotoxicity: Monitor liver function tests regularly. Dose modifications may be required.

2. Interstitial Lung Disease (ILD)/Pneumonitis: Monitor for new or worsening respiratory symptoms. Discontinue if ILD/pneumonitis is suspected.

Drug Interactions
Lumakras has **492 known drug interactions**. Some of the major interactions include:

1. Proton Pump Inhibitors (PPIs) and **H2-Receptor Antagonists**: These should be avoided as they can reduce the absorption of Lumakras. If necessary, take Lumakras 4 hours before or 10 hours after these medications.

2. Strong CYP3A4 Inducers: Avoid coadministration with these as they can decrease the effectiveness of Lumakras.

3. CYP3A4 Substrates: These medications should be used with caution as Lumakras can affect their concentration.

Use in Specific Populations

Pregnancy: May cause foetal harm. Not recommended during pregnancy.
Lactation: Not recommended while breastfeeding.
Pediatric Use: Safety and efficacy not established in pediatric patients.

Overdose
In case of an overdose, seek medical attention immediately.
Symptoms of overdose may include severe liver problems, low levels of white or red blood cells, severe diarrhea, and serious lung problems. There is no specific antidote for Lumakras overdose, so supportive care is the primary treatment.

Reference:
1. **FDA Prescribing Information for Lumakras (Sotorasib)**
https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/213900s000lbl.pdf

Compiled by:
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Events' Corner

Event 1 Health camp at Grand Bassin Ganga Talao

On the occasion of Maha Shivaratri, a free Health Camp was organised on Monday 24th of January at Grand Bassin in collaboration with Prashant IVF clinic. The students and under the supervision of Dr Goutham Yerrakula, from JSS Academy of Higher Education and Research, Mauritius volunteered to offer free community services to the devotees at the Grand Bassin on the occasion of Mahashivaratri.

The medical services provided were:

1. Glucose monitoring test
2. Blood pressure monitoring test
3. Pain relief medications, plasters and bandages were offered to the pilgrims.

Moreover, the fruits, juices and water bottles were donated to the devotees. The camp was beneficial and much appreciated by the pilgrims and the Community.

Event 2: Orientation Week for B Pharm and Biotechnology Freshers

JSSAHER MAURITIUS started its 2nd cohort of BSc Biotechnology, 3rd cohort of PhD Health Sciences, Life Sciences and Management Studies and 6th cohort of B Pharm.

The one-week induction and orientation program were organized between 3 March to 8 March 2025 where eminent personalities from various sectors delivered lectures and conveyed their wishes to the students for a successful career.

The agenda for this orientation week went as follows:

JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS
A degree awarding institution registered with the Higher Education Commission, Mauritius

Orientation Programme
03 March - 06 March 2025

AGENDA

Day 1: Monday, 3 March 2025 — **Venue: Classroom G1**

10:00 AM	Welcome and About JSSAHER, Mauritius, and Transition from College to University	Prof (Dr) Praveen Mohadeb, CEO & Vice-Chancellor
10:35 AM	Overview of administrative and student services	Mr Naveen K P, Registrar
11:00 AM	General Laboratory Safety Measures (Dos and Don'ts)	Prof (Dr) V Jaishree, Head, Faculty of Life Sciences
11:20 AM	Campus Visit	Dr Goutham Y, Assistant Professor and Ms Bhavna, Admin Assistant
12:00 Noon	Lunch Break	
01:15 PM	Guest Lecture: Campus Mental Health Awareness, Emotional Intelligence and Stress Management	Ms Prithee Ajodah Master your Mind Trainer Yantra Spa, Curepipe

Day 2: Tuesday, 4 March 2025 — **Venue: Classroom G1**

09:30 AM	Guest Lecture: Crime Prevention and Safety	Representative from the Police Crime Prevention Unit, Mauritius
11:00 AM	Briefing on JSSAHER E-learn Platform (BPharm)	Dr Datta Kumar and the team Enhanzed, India
01:15 PM	Introduction and Icebreaking session with III, IV, VI and VIII semester students (Room:2.11)	Dr Khayati Moudgil, Assistant Professor, and selected students of B Pharm and BSc

Day 3: Wednesday, 5 March 2025 — **Venue: Classroom G1/2.2**

10:00 AM	About the School of Pharmacy and Program Orientation (Room: G1) About the Faculty of Life Sciences and Program Orientation (Room: 2.2)	Prof (Dr) Ashish Wadhwani, Head, Faculty of Health Sciences Dean, School of Pharmacy Prof (Dr) V Jaishree, Head, Faculty of Life Sciences
01:15 PM	Guest Lecture: Current Scenario of Biotechnology / Pharmacy in Mauritius	Archana Bhaw-Luximon, PhD Professor Biomaterials Engineering and Nanomedicine Biomaterials, Drug Delivery and Nanotechnology Unit and Head, Center for Biomedical and Biomaterials Research (CBBR)

Day 4: Thursday, 6 March 2025 — **Venue: Classroom G1**

09:30 AM	Guest Lecture: Drug Abuse and Drug Prevention	Representative from ADSU Education and Training Cell

Day 5: Saturday, 8 March 2025 — **Venue: Classroom G1**

09:30 AM	First Aid Awareness Lecture	By the trained professionals from the field

Day 1: 3rd March 2025 – Mental Health and Emotional Intelligence

The week began with an insightful guest lecture by Ms. Prithee Ajodah, a *Master Your Mind* trainer. She emphasized the importance of *Campus Mental Health Awareness*, *Emotional Intelligence*, and *Stress Management*. Through interactive activities, students gained valuable tools for managing emotional well-being, setting a constructive tone for the year ahead.

Day 2: 4th March 2025 – Campus Safety and Icebreaker session

The second day featured a session from the *Police Crime Prevention and Safety Unit*, Mauritius, focusing on essential campus safety protocols, outlining essential security protocols and practical measures to ensure personal and collective well-being. Topics such as identifying potential threats, emergency procedures, and responsible behaviour both on and off-campus were thoroughly covered, equipping students with the knowledge to navigate their university experience safely.

Following the lecture, the day continued with a vibrant *icebreaker session*, designed to foster camaraderie and integration among newcomers, senior students, and faculty members. This engaging activity aimed to create a relaxed, approachable atmosphere, helping students step outside their comfort zones and build valuable social connections. Interactive games such as *Two Truths and a Lie*, *The Telephone Game*, and *Life in 3 Words* encouraged meaningful interaction, bridging the gap between students from various semesters (Semester III, V, VI, VIII) and setting the foundation for lasting relationships and academic collaboration.

A glimpse into the experience:

Day 3: 5th March 2025 – Insights into Biotechnology and Nanomedicine

Day 3 featured an insightful guest lecture by Dr. Archana Bhaw-Luximon, Professor in Biomaterials Engineering and Head of the *Center for Biomedical and Biomaterials Research (CBBR)*. Her lecture highlighted the transformative role of *nanotechnology* in medical advancements, particularly in drug delivery and biomedical applications, providing students with a comprehensive understanding of cutting-edge developments in these fields.

Event 3: International Women's Day

International Women's Day, the day on which women are not only celebrated, but whose efforts are also dully recognised and appreciated. An event, which was indeed, not go unnoticed at JSSAHERM and celebrated on the 7th of March. In honour of this event, JSSAHERM organised an elocution competition which revolved around three main themes namely: Achieving Gender Equality, Women in male dominated fields breaking the glass ceiling, and women in technology.

Prof (Dr) Praveen Mohadeb, CEO and VC of JSSAHERM in his opening remarks briefed about JSS institutions and he wisely reminded people to invest in women's education, as this is where a brighter future resides.

JSSAHERM had the honour of receiving The Hon. Ms Anishta Babooram, Junior Minister of Gender Equality and Family Welfare as guest of honour.

Through her speech, which also included a brief summary of her personal experience as a woman in this world, her words indeed, touched more than one. Through the numerous advice in her speech, she highlighted the importance of solidarity amongst women, how the latter is crucial for achieving success as well as the long-awaited goal of gender equality. In her powerful speech, she emphasized on the fact that in order for women to empower themselves, they shall not only dream but take bold steps too; this is what will allow all women across the world to break the glass ceilings. Indeed, she did not try to project a fake image of the world, but she described it as it is: full of barriers to be crossed, yet with a lot of courage, resilience and strength, these barriers can inevitable be overcome someday.

Each time a woman rises, it becomes easier for the next woman to rise. Indeed, achieving gender equality is a long process, and in order to accelerate action, we must start with ourselves. Take the decisive actions. Be bold. She eventually concluded her speech with a message to all the women present, "Do not let anyone look down on you, do not let anyone tell you that you are not worth it, Believe in yourself."

Event 4: National Independence Day

On this 11th March 2025, the 57th Independence Day and 33rd Republic Day of Mauritius was celebrated. The celebration started off with our traditional National Anthem sung in front of our quadrant colored flag raised by Prof (Dr) Praveen Mohadeb accompanied by Prof (Dr) V Jaishree and Prof (Dr) Ashish Wadhwani. This was eventually followed by the message from our Honourable Prime Minister, Dr Navinchandra Ramgoolam, conveyed by one our students. For this National Day of 2025, Mauritius also welcomed the Prime Minister of India, Shri Narendra Modi, an event which reminds us of the close relationship and strong bond between Mauritius and India, a thought which was widely shared with all the students and staff present, by our Registrar Mr K P Naveen.

Students' Learning Experience – Internship

Internship at MedActiv Tribeca

Following the completion of my second year B Pharm also meant delving into a foretaste of the professional world, so as to get an idea of what is required of us, pharmacist to be, in the working field. JSSAHERM offers you the opportunity of doing your internship at either a retail pharmacy or in a clinic. For my ever first experience, I opted for working in a retail pharmacy, and thus I joined the MedActiv team of Tribecca Mall, Trianon. There I was the mentee of the pharmacist in charge, Mrs Dhayana Mootay. The course of the internship started on the 11th of December till the 24th of January. During the first few days, the aim for me was to observe and learn the functioning of the pharmacy i.e. the layout of products, both pharmaceuticals and Para-pharmaceutical (first in-first out method, merchandising or based on stock demands) as well as the various responsibilities of the staffs and soon after it was my turn to take on my share of duties for my learning process.

The various task during this 1 month and 2 weeks internship journey comprised of:

1. Checking of purchases (quantity, expiry date).

2. Handling of purchase receipts and the processing of invoices.

3. Assisted dispensing patients including counselling.

4. Reading and understanding prescriptions.

5. Assisting banking procedures each week.

6. Assisted the pharmacy supervisor, Mrs Gaitree, for the checking of goods-in list for finance purpose.

7. Doing some perpetual inventory system and cross-checking with physical stock.

At the end of the day, I realized that I would not have learned so much during my theory classes. I really enjoyed my first experience working in a community pharmacy. I can say it was a gainful experience and gave me a glimpse of what it means to be a pharmacist and taught me the different responsibilities and ethics I must possess. I am grateful for the support I received from my preceptor and the wonderful people who well surrounded and helped me through this experience. I sincerely thank School of Pharmacy, JSSAHERM and MedActiv for providing me with this opportunity.

Internship at Roshni Pharmacie

My name is Abdur Rahim Farhaan Mawlaboccus, and my 5-week internship at Roshni Pharmacie was a profoundly enriching experience that expanded my knowledge of pharmacy practice and honed essential skills for my future career under the guidance of my preceptor, Mr Premnath Rosunee. One of the critical skills I developed was staying informed about new drugs and treatments. The pharmacists and dispensers at Roshni Pharmacie prioritized continuous learning by engaging in regular discussions. This commitment allowed the team to provide accurate and current advice to patients, enhancing the quality of care.

The dispensing process was carried out with meticulous attention to detail. Following strict protocols, I participated in verifying prescriptions, preparing medications, and ensuring accurate documentation. This practice underscored the importance of accuracy in preventing errors. Counselling was never rushed; instead, it was a careful, patient-centred process. I had the opportunity to assist in providing guidance on proper medication use, side effects, and the importance of adherence. This experience made me realize the significant role a pharmacist plays in improving patient health outcomes beyond just dispensing medications.

The work environment was incredibly welcoming, fostering a familial atmosphere, with a strong culture of mutual respect and continuous learning. The pharmacists and dispensers were patient, always eager to answer questions and share knowledge, which encouraged growth for everyone on the team. Everyone made sure that I was an integral part of the team. This internship was transformative. While theoretical knowledge from my studies was essential, the practical experience truly made a difference. Beyond learning about drugs and their effects, I gained skills in patient counselling, handling real-life situations, and ensuring patient safety and well-being.

In summary, my time was rewarding and transformative. I developed practical skills, from patient counselling to accurate dispensing, and worked with a dedicated team that encouraged my growth. I am grateful for the opportunity to have worked alongside such an amazing group of people, and I feel confident in my ability to pursue my future career as a pharmacist.

Internship at C-Care Darné

Gaining practical experience is an essential component of pharmacy education, and my seven-week internship at C-Care Darne provided a remarkable opportunity to apply my theoretical knowledge in a real-world setting. Working across both the Outpatient and Inpatient Departments, I was able to develop essential skills in medication management, patient counselling, and clinical pharmacy practices.

Learning in the Outpatient Department

The Outpatient Department was a dynamic environment where I played a key role in patient care and medication management. One of the most rewarding aspects was providing medication counselling to patients, ensuring they understood how to use their prescriptions correctly, the importance of adherence, and possible side effects. Answering patient queries also helped me develop my communication skills and deepen my understanding of different medications. Inventory management was also part of my role, which involved tracking stock levels and expiration dates to maintain efficiency and prevent wastages. Additionally, I had the opportunity to engage in compounding and preparation of medications, customizing treatments to meet specific patient needs.

Insights from the Inpatient Department

The Inpatient Department introduced me to the hospital setting, where I gained valuable experience in clinical pharmacy. Medication management was a key aspect, ensuring that the right medications were administered to the right patients at the correct dosages. Participating in ward rounds was an eye-opening experience, allowing me to review patient's drug charts and conducting clinical checks across various hospital units, including maternity, ICU, paediatrics, and general wards, which provided insight into the specific medication needs of different patient groups. Reviewing drug charts and conducting clinical checks helped me understand the importance of accuracy in prescribing and monitoring medications. I also had the unique opportunity to observe the sterile compounding at the Cancer Centre, where I learned the specialized techniques involved in preparing chemotherapy drugs and I observed the meticulous process of sterile preparation of chemotherapy drugs, ensuring they were handled safely and effectively to maintain patient safety.

Memorandum of Understanding/Agreements

The JSSAHER Mauritius signed MoUs with the following.

1. Pharmacie du Centre
2. Vicore Health, South Africa

The MoU with a Community Pharmacy aims

- **Advancement of Professional Development**: To promote the continuous growth and professional development of pharmacists.
- **Educational Initiatives**: To jointly organize and deliver educational programs and courses to enhance ongoing learning and skills development in the pharmaceutical field.
- **Community Pharmacy Practices**: Focus on improving key areas such as procurement and inventory management, medication dispensing, the use of computer applications, and patient care practices.
- **Implementation of Best Practices**: Emphasizing the adoption of recognized best practices in the management and operations of community pharmacies. To promote professional development and the advancement of the pharmacist profession.

This partnership underscores JSSAHER Mauritius's commitment to fostering excellence in pharmacy education and practice, contributing to the overall advancement of the healthcare sector.

Publications, Visits, Workshops and Conferences Attended (January-April 2025)

1. GUEST LECTURES DELIVERED

i) International Conference on Global Trends in Pharmaceutical and Biomedical Research: Guest Speaker lecture delivered by Dr. Goutham Yerrakula at Anurag University, Hyderabad, India

Dr Goutham Yerrakula, represented JSSAHER, Mauritius as a Resource Person at the 5th International Conference on "Global Trends in Pharmaceutical and Biomedical Research" (GTPBR - 2024) held at the School of Pharmacy, Anurag University, Hyderabad in collaboration with the Indian Pharmacological Society and Society of Pharmaceutical Education and Research from 27 – 28th December 2024. 850+ Students, Scholars, Staff, and Industrial personnel attended the event.

ii) Advancing Pharmaceutical Innovations: Microneedles, Transdermal Patches, and Clinical Pharmacy – A Lecture by Prof Ashish Wadhwani and Dr Khayati Moudgil at Saurashtra University, Rajkot, Gujarat, India.

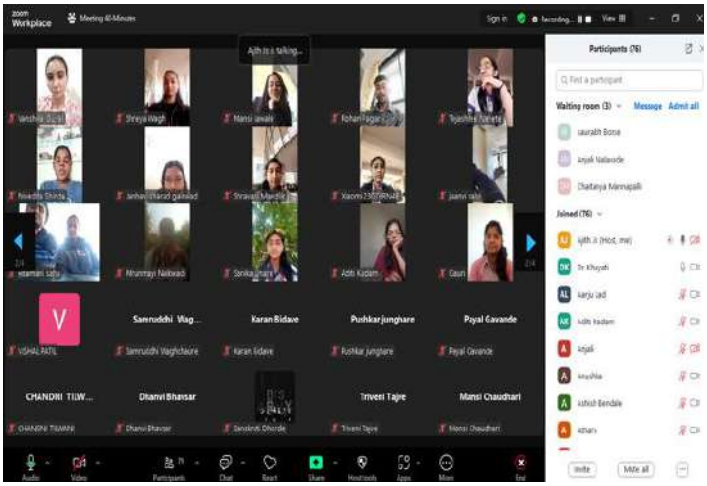
Prof Dr Ashish Wadhwani and Dr Khayati Moudgil delivered a guest lecture at Department of Pharmaceutical Sciences, Saurashtra University, Rajkot, Gujarat on 10 January 2025. The students were provided the insights of Pharmaceutical Formulations, Microneedles, Transdermal patches and the importance of Clinical Pharmacist.

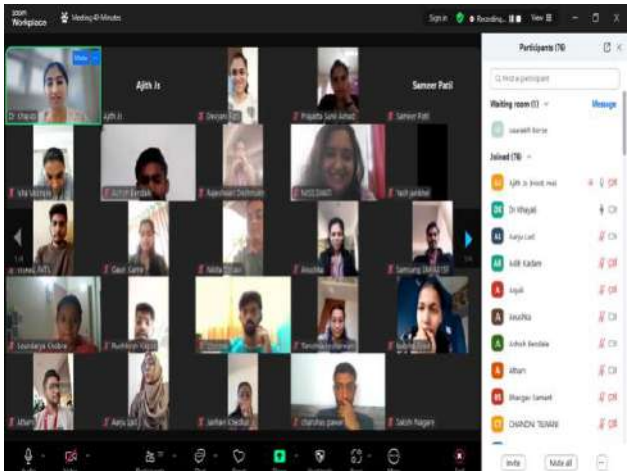
The session was chaired by Ms Karmi Khanpara, Assistant Professor and the dignitaries present were Dr Priya Patel, Head of the Department, Dr Sachin Parmar and Dr Trupesh Pethani.

iii) Exploring the Scope of Clinical Pharmacy Practice: Medication Therapy Management, Patient Safety, and Emerging Roles – A Lecture by Dr. Khayati Moudgil at MET Institute of Pharmacy

Dr. Khayati Moudgil provided valuable insights into the expanding scope of clinical pharmacy practice for the PharmD students at MET Institute of Pharmacy, Nashik, Maharashtra on 8 February 2025. The key points covered: Importance of medication therapy management (MTM), role in patient safety, drug monitoring, and ADR reporting. The significance of monitoring and reporting adverse transfusion reactions. The role of pharmacists in space medicine and astronaut healthcare. Providing pharmaceutical care in outpatient settings, managing chronic diseases like Diabetes, Hypertension, and Asthma. Understanding the importance of publishing clinical case reports, steps involved in documenting and reporting unique patient cases. Techniques for effective history-taking in clinical settings and importance of accurate medication history for optimal therapy. The lecture concluded with an interactive Q&A session, where students engaged with the speaker to clarify their queries.

The session provided valuable exposure to the dynamic roles a clinical pharmacist can undertake, inspiring students to explore various career opportunities in this field.



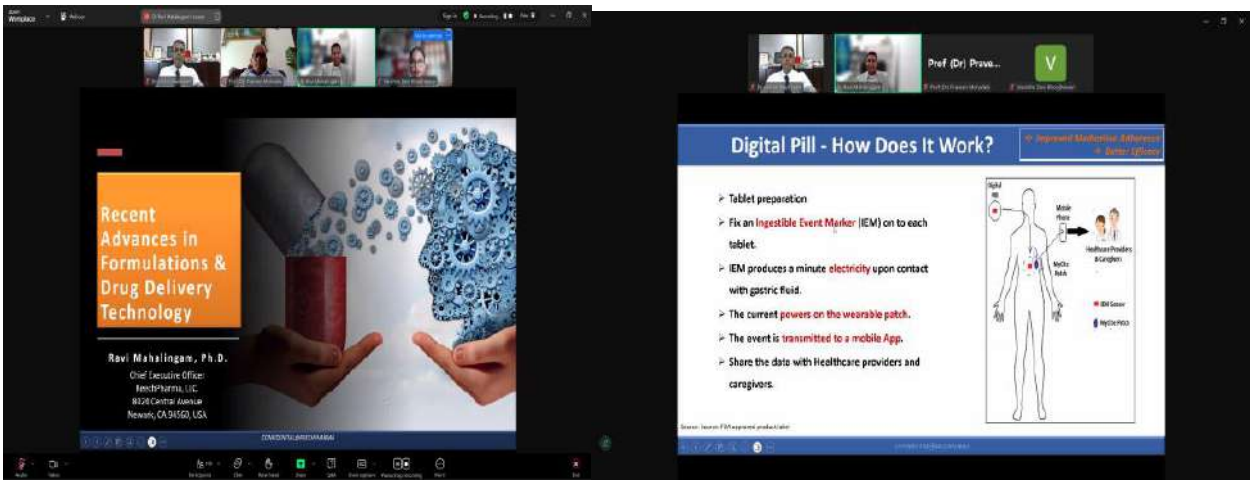


2. CPD Webinar on Recent Advances in Formulations and Drug Delivery Technology, by : Dr Ravi Mahalingam, Founder/CEO, ReechPharma LLC, Newark, CA, USA

A Continuing Professional Development (CPD) lecture on "Recent Advances in Formulations and Drug Delivery Technology" was delivered by Dr. Ravi Mahalingam (USA), offering valuable insights into emerging trends in pharmaceutical formulations and innovative drug delivery systems. Dr. Mahalingam highlighted on;

1. **Long-acting implants**: Sustained-release systems (e.g., **Annovera®** for contraception) reduce dosing frequency.
2. **Polypills**: Fixed-dose combinations (e.g., HIV therapies) simplify regimens and improve adherence.
3. **Abuse-deterrent products**: Technologies like **OxyContin®** deter misuse by resisting tampering.
4. **Oral delivery of proteins/peptides**: **Robotic Rani Autopill** enables oral administration of biologics (e.g., insulin).
5. **Digital pills**: **Abilify MyCite®** tracks ingestion via sensors, enhancing compliance monitoring.
6. **3D-printed pharmaceuticals**: **Spritam® ODT** uses porous tablets for rapid dissolution.
7. **Anticounterfeiting**: **Trutag's authentication technology** verifies drug authenticity.

Participants gained a deeper understanding of how novel excipients, 3D printing in drug formulation, and AI-driven drug design are shaping the future of pharmaceutical sciences. The lecture was highly informative, fostering discussions on the practical applications of these innovations in clinical and industrial settings, making it a valuable learning experience for professionals and researchers in the field.



3. Visits

i) Visit to CIDP Mauritius

Dr Goutham Yerrakula, Assistant Professor along with B Pharm 5th Year students had the enriching opportunity to visit the Centre International de Développement Pharmaceutique (CIDP) Mauritius, a globally esteemed Contract Research Organization (CRO) specialized in dermatology, cosmetics, and pharmaceuticals. This visit provided an in-depth understanding of clinical research methodologies, showcasing the scientific rigor behind skincare and pharmaceutical innovations. As a key player in cosmetic and pharmaceutical research, CIDP ensures the efficacy and safety of formulations before they reach consumers. Students observed cutting-edge technologies, including skin analysis devices, spectropolarimeters, spectrophotometers, VISIA, photo bench, Skincam, Sebummeter, Corneometer, Tewa meter, and Cutometer, which are used to assess hydration levels, pigmentation, elasticity, and sebum production. It was an enriched experience for the students to put theory knowledge to practice.

ii) Visit to Central Wearhouse and Pharmacy Board

Aiming to educate final year B Pharm students on the procurement and regulatory aspects of the pharmaceutical sector, JSSAHER Mauritius organized a site visit to the Central Supplies Division in Port Louis as well as to the Pharmacy Board of Mauritius on 25th March 2025.

Essentially a warehouse, the Central Supplies Division mainly deals with the acquisition, storage, and distribution of both pharmaceutical and non-pharmaceutical products across the entire island. As explained to the students, public hospitals and other healthcare institutions in the country all receive their medical supplies from this central facility. The students were then provided with a tour of the premises in order to take note of the good warehousing practices (GWP) that were implemented and to catch a glimpse of how products of different categories are segregated in various sections of the warehouse. Given the chance to clarify any doubts, the students took hold of the opportunity to obtain a detailed explanation on the handling and disposal of expired stocks.

The next destination for the students was the Pharmacy Board of Mauritius in Ebene. The Registrar, Mrs. Mangatha, briefed the students on the functions of the board, which included overseeing the registration of new pharmacies along with the inspection of their layouts and activities, regulation of pharmaceutical products especially those mentioned in the Dangerous Drugs Act, registration of new drug products, collection and distribution of requisition forms for controlled drugs to pharmacists and physicians, and monitoring of fraudulent activities within the pharmaceutical arena of the country. Overall the visits were fruitful.

WORKSHOP ATTENDED

1. National Pharmacovigilance Workshop

The Ministry of Health and Wellness, in collaboration with the World Health Organization, organized a workshop on the introduction of the VigiMobile App for Adverse Drug Reactions (ADR) reporting. The workshop trained the Healthcare Providers on the VigiMobile App for Adverse Drug Reactions (ADR) which was held on 20th February 2025 at Gold Crest Business Hotel, Quatre Bornes. The workshop emphasised on monitoring and reporting the adverse drug reactions, adverse events following immunization along with its importance in the Country. Dr Khayati Moudgil attended the workshop and represented as an Academic Preceptor from the institution.

2. Workshop on 'Horizon Europe'

The Mauritius Research and Innovation Council (MRIC) organized the workshop on 'Horizon Europe', jointly with European Union Delegation to the Republic of Mauritius and the MRIC, under the aegis of the Ministry of Tertiary Education, Science and Research.

The objectives of the workshop was to:

1. Showcase successful EU funded projects, including case studies from Mauritius; and
2. Present on-going and future Horizon Europe funding opportunities with hands-on training to participants on how to apply.

The workshop was held on Wednesday, 19th March 2025 at 09:00 hrs at UoM Auditorium, Ebène Branch, The Core Complex Ebène Cybercity where various project sponsored by European Union were discussed and the funding opportunity for Mauritius was highlighted.

The event will be launched by Dr the Hon Kaviraj Sharma Sukon, Minister of Tertiary Education, Science and Research and was attended by H.E. Mr Oskar Benedikt - Ambassador of the European Union to the Republic of Mauritius and to the Republic of Seychelles. Dr Goutham Yerrakula, Assistant Professor for the academy attended the workshop.

Courtesy Visits to Government Officials

- Prof (Dr) Praveen Mohadeb, CEO and Vice-chancellor and Mr Naveen KP, Registrar along with one of the Board of Directors of JSSAHERM Mr Dharam Fokeer met the newly elected Ministry The Honourable Anil Kumar Bachoo, Minister of Health and Wellness on 14th Feb 2025 and briefed about various programmes and activities of JSSAHER and invited the Minister to be the Chief Guest for the World Health Day 2025 inaugural function to be organised by JSSAHERM on 7th April 2025.

- Prof (Dr) Praveen Mohadeb, CEO and Vice-chancellor and Mr Naveen KP, Registrar met His Excellency Mr Dharambeer Gokhool GOSK, President of the Republic of Mauritius on 17th Feb 2025 and briefed about various programmes and activities of JSSAHERM.

PATIENT INFORMATION LEAFLETS

WHAT IS IT?

CF is an inherited disease. The condition affects mainly the lungs and the pancreas but it can also affect other organs. The organs are affected as there is a build up of sticky mucus that accumulates in the lungs and the digestive system.

CAUSE

A defective gene named CFTR gene modifies the protein that is in control of the motion of salt into and out of the cells. Instead of thin and slippery fluids that act as lubricants, the secretions are sticky and thick mucus which plug up tube ducts and passageways mostly of lungs & pancreas.

FROM BIRTH

Babies are born with Cf when a defective gene is inherited from both parents. The parents are only the 'carriers' of the gene. At birth, babies are tested for CF by a sweat test which measured the salt content as well as other lab tests.

SYMPTOMS

- Persistent cough that produces phlegm occasionally
- Skin becomes salty at taste
- Exercise intolerance
- Repeated lung infections
- Regular sinusitis
- Wheezing

COMPLICATIONS

- Damaged airways
- Chronic infections
- Collapsed lung
- Osteoporosis
- Diabetes
- Liver Problems
- Fertility problems
- Coughing up blood from lungs

TREATMENT

CF is an uncurable disease though the symptoms that the patient experiences can be eased. The main objectives are preventing lung infections, removing mucus, preventing intestinal blockage and a proper nutrition.

SANIYA ISSIMDAR, IV SEMESTER/ II YEAR, BPHARM

JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS
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CYSTIC FIBROSIS

? DID YOU KNOW

In 1965, a 4 year old pronounced his condition 65 roses which is still used by many children suffering today.

The information on this leaflet is intended for educational purposes only. Always seek the advice of your physician, pharmacist or any health care provider with any questions you may have regarding a medical condition.

RHEUMATOID ARTHRITIS

WHAT IS RHEUMATOID ARTHRITIS?

- Rheumatoid arthritis is a long-term condition that can cause pain, swelling and stiffness in your joints.
- Rheumatoid arthritis is an autoimmune condition. This means that the immune system mistakenly attacks healthy tissues in your body, rather than germs or viruses. If untreated, this can damage your joints, cartilage, and nearby bones.

WHAT CAUSES RHEUMATOID ARTHRITIS?

- Age: Rheumatoid arthritis can affect you at any age, but most people are diagnosed between the ages of 40 and 60.
- Sex: Rheumatoid arthritis is two to three times more common among women than men.
- Weight: If you're overweight, you have a greater chance of developing rheumatoid arthritis than if you're a healthy weight.

Disclaimer: The information provided in this leaflet is intended for educational purpose only. Always seek the advice of your physician, pharmacist, or other healthcare provider with any question you may have regarding a medical condition

SYMPTOMS

The main symptoms of rheumatoid arthritis are:

- joint pain
- joint swelling, warmth and redness
- stiffness, especially first thing in the morning or after sitting still for a long time

Rheumatoid arthritis can affect any joint in the body, although the small joints in the hands and feet are often the first to be affected.

As well as joint problems, you may experience other symptoms, such as:

- tiredness and lack of energy
- not feeling hungry
- weight loss
- a high temperature, or a fever
- sweating
- dry eyes – as a result of swelling
- chest pain – as a result of swelling

STAGES OF RHEUMATOID ARTHRITIS

EARLY INTERMEDIATE LATE

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WHAT ARE THE COMMON WAYS TO TREAT RHEUMATOID ARTHRITIS?

- Non surgical treatments

If you start treatment within the first two years of having symptoms, you lower your risk of serious joint damage.
A doctor may recommend the following actions:

- ➢ stay active
- ➢ eat healthy diet
- ➢ avoid nicotine
- ➢ take medication
- ➢ sleep and relax

- Surgical treatment

Surgery may be recommend if rheumatoid arthritis has caused moderate to severe joint damage that affect day to day living.

- ➢ joint replacement
- ➢ synovectomy- joint membrane removal (synovium) surgery
- ➢ arthrodesis- two or more bones in a joint are fused to become one larger bone.

DID YOU KNOW?

- ❖ In 2020, an estimated **17·6 million** people had rheumatoid arthritis worldwide

THIS PIL IS AN EDUCATIONAL TOOL FOR MODULE COMMUNITY PHARMACY AND FOR SOLE OWNER JSSAHERM

For Clarifications/Feedback, Write

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