JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS

A degree awarding institution registered with the Higher Education Commission, Mauritius

JSS Health & Education Newsletter

Volume II Issue III
September-December 2022

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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, 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. The Bachelor of Pharmacy programme of JSSAHERM has received Pre-certification from the Accreditation Council for Pharmacy Education (ACPE), USA, making JSSAHERM the first institution in African region to get ACPE pre-certification.

JSS Mahavidyapeetha (JSSMVP), Mysuru, India is the sponsoring society of JSSAHER, Mauritius. JSSMVP has established more than 330 educational institutions in India, Dubai, Mauritius, and USA, with a total student populationover 50,000 and a staff strength 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’.

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https://jssaher.edu.mu/publication/

Ministry of Environment, Solid Waste Management and Climate Change

Message

The COVID 19 pandemic has caused severe health, social and economic impacts in a number of countries including ours. Climate change is further compounding our problems threatening our very existence on this planet. As extreme weather impacts are unfolding worldwide putting at risks human health, there is need for more relevant courses, research and development that will allow us to change our way of doing things and also come up with local solutions to the challenges that we are facing and are likely to face in the future. I believe that educational institutions such as the JSS Academy of Higher Education and Research-Mauritius, have a critical role to play in creating healthy and inclusive societies as envisioned in the 2030 Agenda.

They should gear their efforts to provide future professionals that are going to come on the job market with the tools that allow them to continuously learn and also create new knowledge. I am of the opinion that meaningful research and engagement with the community and all stakeholders should be the guiding motto of all our educational institutions as this will ensure that our students are totally connected to the needs of the society.

There is need amongst others for comprehensive data and development of appropriate local low cost technologies that can assist decision makers in coming with the right policies. This is where educational institutions can provide tremendous support. We strongly believe educational Institutions such as the JSS Academy of Higher Education and Research can work together with us to create a more secure, more sustainable, and more prosperous future for all.

Hon. Kavydass Ramano
Minister of Environment, Solid Waste
Management and Climate Change

Geriatric Pharmacist

If you open your grandmother's medicine cabinet, you will likely find numerous pill bottles. People over 65 are more likely to need a range of medications to treat numerous chronic health disorders, such as hypertension, diabetes, arthritis, Alzheimer's disease, pain, and other age-related diseases and conditions, as well as occasional problems such as colds or flu.

Geriatric pharmacists, sometimes known as consultant pharmacists, are experts in the distribution of pharmaceuticals and counselling of elderly patients regarding the use of these medications.

As part of the health care team caring for older persons in skilled nursing institutions, assisted living facilities, hospice facilities, and various other care sites, these pharmacists serve solely in a consultation capacity. Their primary responsibility in these situations is to guarantee optimal drug management to improve patient health, and they typically spend additional time speaking with patients to:

- Describe how and when to take the medication.
- Describe any probable harmful effects, including unpleasant responses.
- Ensure that the new medicine will not interact with the patient's existing prescriptions, nutritional supplements, or over-the-counter medications, or contribute to a medication-related complication such as lightheadedness, which can result in falls.
- Make dosage adjustments or offer drug changes to alleviate adverse effects.
- Monitor routine parameters such as blood sugar and blood pressure.
- Respond to queries regarding medication management and other health issues
- Help people save money by suggesting generic medications or special insurance plans

A major objective of the geriatric pharmacist is to prevent unpleasant reactions. According to the Institute of Medicine, medication errors, including dose and administration errors, kill over 100,000 people annually. Because elderly people take more medications, the likelihood of drug interactions is greater. Geriatric pharmacists are educated to identify and assist in mitigating these hazards.

Additionally, they can aid in ensuring that patients take their medications appropriately and consistently. Patients do not always comprehend the significance of taking prescribed medications as directed. If they relate a side effect, such as exhaustion or insomnia, to the medication, they may discontinue use. A geriatric pharmacist can investigate for these conditions and either alter the patient's regimen or underline the need of taking the prescription as prescribed by the physician.

Dr Khayati Moudgil,
Chief Editor
JSSAHERM, Newsletter

Gastritis, its Management and Treatment

Gastritis is an inflammation of the lining of the stomach or weakness of the inner layer of the stomach that allows digestive juices to damage and inflame it. A gastrointestinal bacterial infection can also cause gastritis. The most common bacterial infection causes to the stomach by *Helicobacter pylori*, a bacteria that infects the lining of the stomach. The inflammation of gastritis is most often the result of infection with the same bacterium that causes most stomach ulcers or the regular use of certain pain relievers. The infection is usually passed from person to person, and it can also be transmitted through contaminated food or water.

Gastritis is divided into two types; they are acute or chronic. Acute gastritis comes on suddenly and severely, while chronic gastritis lasts for a longer time. For most people, gastritis is minor and will go away quickly after treatment. However, some forms of gastritis can produce ulcers or increase the risk of cancer. Some types of gastritis make more difficulty in absorbing iron or vitamin B12, leading to deficiencies. In such a situation, the doctor should be contacted to take supplements to prevent deficiencies.

Common symptoms of gastritis

The common symptoms of gastritis are nausea, indigestion, vomiting, upset stomach, pain, hiccups, abdominal bleeding, feeling of fullness, burning stomach, loss of appetite, and blood in vomit or stool.

Causes of gastritis

Food habits like eating spicy, fried, and highly acidic foods such as tomatoes, carbonated drinks, coffee, fatty foods, fried foods, fruit juices, pickled foods, tea, consumption of alcohol too often or drinking too much in a short period, and smoking causes gastritis. Some diseases and other health issues can also cause gastritis. Other habits such as routine use of NSAIDs like ibuprofen and aspirin, cocaine use, age (because the stomach lining thins naturally with age), tobacco use.

Other less common risk factors include stress, autoimmune disorders, digestive disorders, and viral infections. Due to day-to-day stress, anxiety and accumulated tension also can negatively affect the stomach and cause inflammation of the gastric mucosa. This causes gastritis nervosa. Unlike other gastritis, it is not caused by bacteria, but by an accumulation of negative emotions. Too much stress and anxiety cause the release of stomach acids, which causes an excessive load on the mucus lining results in corrosion.

Prevention of gastritis

Preventative strategies depend on our health. But gastritis doesn't always have a clear cause, it can be hard to prevent.

However, there are some tips to follow in daily life can prevent gastritis:

- **Good hygiene habits:** Habits of handwashing before taking food may help to reduce the risk of having a *H. pylori* infection.

- **Mental health**: Self-care and de-stressing practices may reduce risk of developing stress-induced gastritis. Committing to relaxation techniques such as yoga or meditation, as they can help a lot to reduce stress.
- **Eating smaller meals:** The eating habit, avoiding or limiting fried, salty, sugary, and spicy foods and taking smaller meal in short duration can prevent the triggering of gastritis.
- **Quitting smoking:** If person smoke.
- **Avoiding alcohol and caffeine**

Management of gastritis by daily diet and other activities

Diet is an important player in digestive system and overall health. According to the research on gastritis and stomach ulcers, the following foods are preferred in daily diet to manage and prevent gastritis:

Milk, yogurt and low-fat cheeses, vegetable oils and olive oil, some fruits, including apples, melons and bananas, some vegetables, including leafy greens, carrots, spinach and zucchini, lentils, chickpeas and soybeans, lean meats, natural juices, noncarbonated drinks, caffeine-free drinks.

Some studies reported that probiotics could help with stomach complications caused by bacteria (*H. pylori)*. The *H. Pylori* is the most common cause of gastritis, accounting for 90% of cases. Therefore, healthful probiotic foods help in reducing gastritis. These include kombucha, yogurt, kimchi, sauerkraut. Eating smaller, more frequent meals also help ease symptoms.

In some people, food allergies can trigger gastritis. In these cases, identifying and avoiding these foods may treat and prevent the condition. Drinking large amounts of water controls the acid levels of gastric juices, which helps accelerate the healing of gastritis. People with gastritis should avoid drinking too much water immediately before and after meals, as it can be counterproductive.

Treatment

The treatment for gastritis depends on the cause of the condition. If gastritis is caused by nonsteroidal anti-inflammatory drugs or other medications, avoiding or stopping the consumption of those drugs may be enough to relieve symptoms. If prescription medication is causing gastritis, it should be discussed with the prescriber before stopping or modifying the dosage. Doctors routinely treat gastritis as a result of *H. pylori* with antibiotics in order to kill the bacteria.

In addition to antibiotics, several other types of medication are used to treat gastritis:

- ***Proton pump inhibitors***

  The drugs which are used in blocking cells that create stomach acid are called proton pump inhibitors. Common proton pump inhibitors include Omeprazole, lansoprazole, and esomeprazole. However, long-term use of these drugs, especially at high doses, can

lead to an increased risk of spine, hip, and wrist fractures and also lead to increased risk of renal failure, dementia and nutrient deficiencies.

- ***Acid reducing medications (Acid blockers)***

  These are also called as histamine (H-2) blockers which reduces the amount of acid released into your digestive tract, which relieves gastritis pain and encourages healing. Acid blockers include famotidine, cimetidine, ranitidine, and nizatidine. Famotidine is one example of a medication that reduces the amount of acid in stomach. By lowering the amount of acid that is released in the digestive tract, these medications relieve the pain of gastritis and allow your stomach lining to heal.

- ***Antacids***

  Antacids are recommended for rapid relief of gastritis pain. These medications can neutralize the acid of stomach. Some antacids may cause diarrhea or constipation; therefore, it is suggested to discuss with the doctor for any of these side effects before taking.

- ***Probiotics***

  Probiotics have been shown to help replenish digestive flora and heal gastric ulcers and there is no evidence that they have any impact on acid secretion. There are currently no guidelines supporting the use of probiotics in ulcer management.

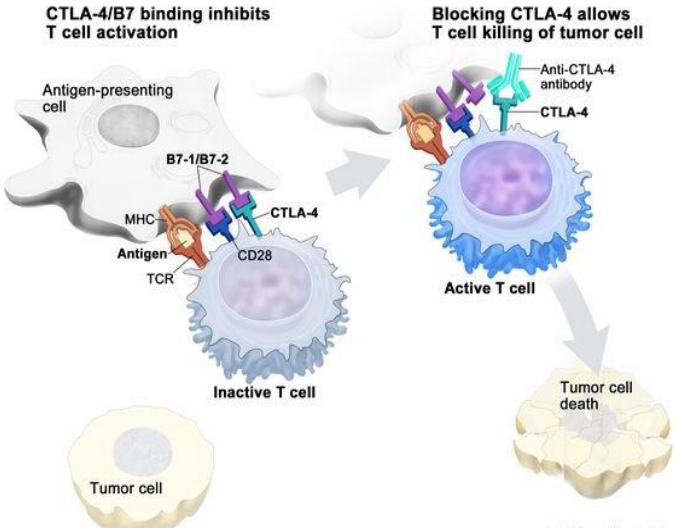
Dr. Jaishree V
Professor and Head
Faculty of Life Sciences, JSSAHERM

Immune Checkpoint Inhibitors: How They Work Against Cancer

Immune checkpoints are a normal component of the immune system, whose function is to keep an immune response from becoming so powerful that it damages healthy cells in the body.

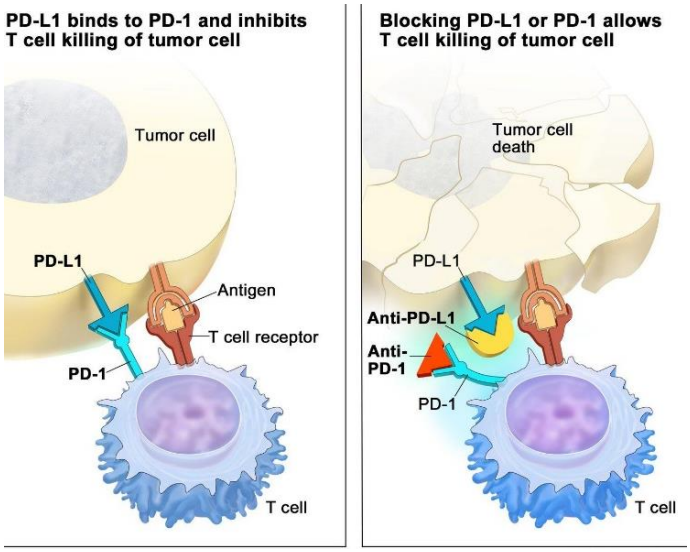
Immune checkpoints engage when proteins on the surface of immune cells, referred to as T cells, recognise and bind to partner proteins on other cells, such as some tumour cells. These proteins are called immune checkpoint proteins. When the checkpoint and partner proteins bind together, they send an "off" signal to the T cells, thereby preventing the immune system from destroying the cancer.

Immunotherapy drugs called immune checkpoint inhibitors work by blocking checkpoint proteins from binding with their partner proteins. This prevents the "off" signal from being sent, allowing the T cells to kill cancer cells.



One such drug acts against a checkpoint protein called CTLA-4. Other immune checkpoint inhibitors act against a checkpoint protein called PD-1 or its partner protein PD-L1. Some tumours turn down the T cell response by producing lots of PD-L1.

In a nutshell, checkpoint proteins, such as PD-L1 on tumour cells and PD-1 on T cells, help keep immune responses in check. The binding of PD-L1 to PD-1 keeps T cells from killing tumour cells in the body (left panel), whereas blocking the binding of PD-L1 to PD-1 with an immune checkpoint inhibitor (anti-PD-L1) allows the T cells to kill tumour cells (right panel).



Types of Cancers Treated

Immune checkpoint inhibitors have been proven to treat a variety of cancers such as:

- Breast cancer
- Cervical cancer
- Colon cancer
- Bladder cancer
- Head and neck cancer
- Hodgkin lymphoma
- Lung cancer
- Liver cancer
- Skin cancer, including melanoma
- Renal cell cancer
- Stomach cancer

Drugs/Examples of Immune Checkpoint Inhibitors

Checkpoint inhibitors that block PD-1 include:

- nivolumab (Opdivo)
- pembrolizumab (Keytruda)

Ipilimumab (Yervoy) is a checkpoint inhibitor drug that blocks CTLA-4. It is a treatment for advanced melanoma and advanced renal cell cancer.

Checkpoint inhibitors that block PD-L1 include:

- atezolizumab
- avelumab
- durvalumab

Side Effects of Immune Checkpoint Inhibitors

Immune checkpoint inhibitors may cause side effects which depend on how healthy an individual is prior to treatment, the type of cancer, how advanced it is, the types of immune checkpoint inhibitor used, and its dose.

However, common side effects include:

- Rash
- Diarrhea
- Fatigue

Rarer side effects of immune checkpoint inhibitors can include widespread inflammation. Depending on the organ of the body that is affected, inflammation can lead to:

- changes in skin color, rash, and feeling itchy, caused by skin inflammation
- cough and chest pains, caused by inflammation in the lungs
- belly pain and diarrhea, caused by inflammation in the colon

- diabetes, caused by inflammation in the pancreas
- hepatitis (inflammation of the liver)
- hypophysitis (inflammation of the pituitary gland)
- myocarditis (inflammation of the heart muscle)
- nephritis (inflammation of the kidney) and impaired kidney function
- overactive or underactive thyroid
- nervous system problems such as muscle weakness, numbness, and trouble breathing

However, any possible inflammations should be assessed by the oncologist, or the individual may be advised to seek emergency medical care.

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Written By:
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Love: A Cocktail of Neurotransmitters and Neuropeptides

"Love is like an hourglass; with the heart filling up as the brain empties"
-Jules Renard (1864-1910)

Engaging in love is one of the most desired experiences which may activate areas of the brain responsible for attention, emotion, memory, and motivation. Studies have shown that love has an anxiolytic effect on the brain and helps in stress reduction. Maternal love may be the most crucial part of an infant's life and is essential for his/her good development as well as mental health. The ability of a mother to respond to her own child's distress is controlled by a number of areas in the brain, namely the orbitofrontal cortex, anterior insula, putamen, and periaqueduct gray.

In humans, love starts when someone is considered as being special and unique by another individual, followed by minimizing his/her faults and increase in sexual desire. This system is controlled by specific neuroendocrine pathways. However, functional MRI studies have shown that love involves activation of areas of the brain associated with motivation and goal-oriented behaviors, suggesting that love is not an emotion but rather a motivation system, that is, a human mating drive.

Stress is considered as the trigger for the need to acquire proximity and pleasure, encouraging social interaction. Manifestations of the stress response include love-anxiety palpitations and increased peristalsis, induced by the increase in **cortisol** levels in the body. The catecholamine, **norepinephrine** is also involved, accounting for the increase in heart rate, sweating, alertness, increase in energy, attention and memory, loss of appetite, and sleeplessness.

The prosperity of love and the formation of attachments are greatly influenced by gonadal hormones. **Testosterone** released from its receptor in the hypothalamus cause suppression of **serotonin** levels and activity and enhances **vasopressin** levels in the medial amygdala lateral hypothalamus, increasing aggressiveness.

Men tend to show more activity in the right posterior dorsal insula; associated with penile erection and viewing of beautiful faces; and in regions associated with the integration of visual stimuli. Women, however, show more activity than men in regions associated with memory, attention, and emotion. They appear to be more attracted to men offering status and resources.

Oxytocin (OT) and **vasopressin** are nano peptides synthesized in the paraventricular and supraoptic nuclei of the hypothalamus and transported to the posterior pituitary gland. **Arginine vasotocin** (AVT) is a non-mammalian analogue and precursor of vasopressin which serves as a modulator of social behavior, regulates osmotic pressure, stress hormone release and is involved in reproductive physiology.

Studies have shown that both oxytocin and vasopressin are released during arousal in men and women. The increase in vasopressin returns to baseline at the time of ejaculation whereas the level of oxytocin returns to baseline 30 minutes after ejaculation.

Other triggers of oxytocin release from the posterior pituitary gland of females are vagocervical stimulation during labor and suckling process during lactation. The increase in oxytocinergic

activity in addition to the increase in other neurochemicals like prolactin, acetylcholine, norepinephrine, glutamate, and GABA contribute to the establishment of memories of the infant and his/her attachment to the mother. The development of mother-infant bond is essential for the survival of the infant.

Love activates specific regions in the reward system, leading to a reduction in fear, depression, emotional judgement, and enhanced mood. The reward system is further reinforced by sexual activity. In fact, a rise in testosterone and estrogen levels cause release of **dopamine** which in turn motivates males and females to prefer a mating partner and start attachment.

In conclusion, hormones and neurotransmitters play important roles when it comes to making someone feel the warm sensation of being in love as well as in maternal love.

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Anticholinergic Burden

Anticholinergic burden is defined as the cumulative effect of taking one or more medicines with anticholinergic effects.

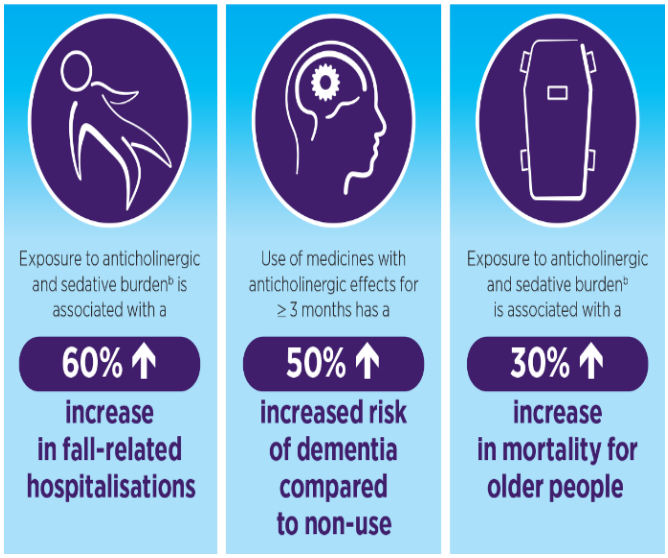
How anticholinergic drugs work?

Anticholinergic drugs block the neurotransmitter acetylcholine from binding to the muscarinic receptor by competitively binding to these receptors and hence produce anticholinergic-type effects. Such activity may be desirable, for example in medications for urgent incontinence, or undesirable, as of antipsychotics, antidepressants, and analgesics.

Uses of anticholinergic drugs

Anticholinergic drugs are being used for the treatment of illnesses such as dementia, depression, psychosis, chronic non-cancer pain, overactive bladder, urinary inconsistencies, irritable bowel syndrome, chronic obstructive pulmonary disease (COPD), asthma, Parkinson's disease, and motion sickness. However, their actions on the central and peripheral nervous systems can lead to adverse effects. The latter comprises of confusion, cognitive decline, constipation, dry mouth, falls, urinary retention, blurred vision, drowsiness, dizziness, headache, nausea, palpitations, tachycardia, vomiting, and angioedema (rare side effect).

Anticholinergic burden is a **strong predictor** of cognitive and physical impairment, especially in the elderly population. It has been linked to an increased rate of falls, decline in cognitive function and memory, and higher mortality rates.



Cumulative anticholinergic burden can also be caused by drugs that are not used for their anticholinergic effects. Examples are drugs used for allergy, depression, anxiety, and sleep disorders. Studies have found that **21 – 34 %** of patients (particularly older people) taking drugs with anticholinergic effects and experiencing anticholinergic burden arise with the use of drugs having **lower** anticholinergic effects rather than those with higher effects. This is an unintended consequence of polypharmacy without the proper identification and management of the anticholinergic side effects. The concomitant use of multiple medications with anticholinergic activity further increases the patient's burden. The higher the burden, the higher the risks of harmful adverse effects.

Older patients are more likely to have multiple co-morbidities and are thus on polypharmacy treatment. As the body ages, its ability to metabolise medications declines, the permeability of their blood-brain barrier increases and therefore older patients are more susceptible to the anticholinergic effects of their medications.

Anticholinergic Burden Scales

The anticholinergic burden (ACB) effects are proportionate to the dose and duration of

exposure. Anticholinergic burden scales were created in an attempt to quantify the effects of these medications and to provide a practical tool for optimising prescribing for older patients. There are **16 scales** available out of which **only six** were considered suitable for the quantification of anticholinergic exposure. Two of these scales, the **Anticholinergic Cognitive Burden** (ACB) scale and the **Anticholinergic Drug Scale** (ADS), contain the largest number of relevant medicines. An ACB score **of 3 or more** (using antidepressants, urological or antiparkinsonian drugs) may increase the risks of cognitive impairment, functional impairment, falls, and mortality in older adults (> 50 – 65 years). Increased doses and long duration of use are associated with increased risk of dementia.

Score = 3 points	Score = 2 points	Score = 1 point
Amitriptyline	Amantadine	Carbidopa-levodopa
Atropine products	Hydrochloride	
Benztropine	Baclofen	Entacapone
Carisoprodol	Cetirizine	Haloperidol
Chlorpheniramine	Cimetidine	Methocarbamol
Chlorpromazine	Clozapine	Metoclopramide
Cyproheptadine		Mirtazapine
Dicyclomine	Cyclobenzaprine	
Diphenhydramine	Hydrochloride	
Fluphenazine	Desipramine	Paroxetine
Hydroxyzine hydrochloride &	Loperamide	Pramipexole
hydroxyzine pamoate	Loratadine	Quetiapine fumarate
Hyoscyamine products		
	Nortriptyline	
Imipramine	Olanzapine	Ranitidine
		Risperidone
Meclizine		
	Prochlorperazine	
Oxybutynin	Pseudoephedrine &	Selegiline
Perphenazine	Triprolidine	Trazodone
Promethazine	Tolterodine tartrate	
Thioridazine		Ziprasidone
Thiothixene		
Tizanidine		
Trifluoperazine		

The NPS MedicineWise *Anticholinergic burden: the unintended consequences for older people* program aims to improve the health outcomes of older people living in the community and residential aged-care facilities (RACFs) by promoting the safe and effective use of medicines with anticholinergic effects and, as a result, reduce anticholinergic burden. It also aims to strengthen the collaborative effort between health professionals by increasing their knowledge of medicines with anticholinergic effects and how to individualise the approach to reducing anticholinergic burden that is aligned to patient goals.

Identifying and managing medicines with anticholinergic effects can be challenging, as many are not thought of as having anticholinergic effects.

Ways to reduce anticholinergic burden include:

- increasing awareness that certain medicines have anticholinergic effects
- recognising that presenting symptoms such as falls or cognitive decline may be due to anticholinergic burden
- assessing anticholinergic burden using anticholinergic burden scales

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The Axolotl: The Future of Regenerative Medicine

In 1864, French zoologist August Dumeril was baffled while investigating the axolotl. Unlike many other amphibians, which transform into terrestrial adults, axolotls retain their juvenile characteristics and never leave the water. In an attempt to induce metamorphosis, Dumeril spent months removing their gills but in most instances the axolotls simply grew them back. Indeed, axolotls are masters in regeneration. They can flawlessly regenerate body parts ranging from amputated limbs and crushed spines to parts of their eye and brains. This extraordinary salamander is native to the wetlands of Mexico. Ancient Aztec people considered it the incarnation of a god named Xolotl hence the Axolotl`s name meaning water monster. Axolotls (*Ambystoma mexicanum*) are salamanders that have been used for research for more than 200 years. They have a remarkable ability to regenerate lost or damaged tissues, including whole organs, limbs, and parts of the central nervous system. Scientists study the genetic and biochemical mechanisms that drive axolotl tissue regeneration in hopes that deeper understanding may bridge the gap between regenerative biology and medicine.

When an axolotl loses a limb, tissues stimulate growth in the area. Skin cells divide and cover the wound. Then progenitor cells, which can develop into various bodily tissues, form a mass at the site of injury and nearby nerves secrete growth proteins. Over the next few weeks, a new limb emerges as cells proliferate and differentiate in coordination. This process could potentially lead to uncontrolled growth and tumour formation. But axolotls are remarkably resistant to cancer. They have a system in place that tightly controls cellular proliferation.

The axolotl's ability to grow new limbs is not their only appealing characteristic as an animal model. Axolotls are tetrapods and share homologous structures with humans, such as feet and digits—a desirable trait for modeling the regeneration of appendages. Also, axolotls lay hundreds of exceptionally large eggs that are easy to manipulate and observe during experiments. Moreover, the axolotl genome is well defined, enabling genome-wide studies of the events triggered by tissue damage.

Axolotl Genome

It is vital to understand how the axolotl genome functions during regeneration. Stimulating or inhibiting genetic factors essential to tissue regrowth may lead to treatments in regenerative medicine. The analysis of the assembled genome discovered several features that seem to point to the uniqueness of the axolotl: The researchers found that several genes that only exist in axolotl and other amphibian species are expressed in regenerating limb tissue. Most

strikingly, an essential developmental gene named *PAX3* is completely missing from the genome, and its functions have been taken over by another gene termed *PAX7* (PAX7 transcription factor plays a crucial role in the formation and differentiation of skeletal muscle precursor cells during embryonic development). Both genes play key roles in muscle and neural development.

Gene Expression and Tissue Regeneration

A concert of biochemical and genetic mechanisms must function perfectly for tissue regrowth to occur. Dr. Randal Voss, director of the Ambystoma Genetic Stock Center (AGSC) at the University of Kentucky has been working in collaboration with Dr. Jon Thorson, Director of the Center for Pharmaceutical Research and Innovation at the University of Kentucky, to reveal details about the genetic and epigenetic factors driving regeneration. The team has developed an embryonic axolotl tail regeneration assay in which chemicals are applied to the growth medium of fertilized axolotl eggs.Preliminary microarray analysis demonstrated altered transcription of a high number of diverse classes of genes. Effective compounds will be prioritized in future limb regeneration studies in adult axolotls. If compounds affect regeneration, the team uses the mechanism of action of the chemical to trace back to the specific gene or genes involved.

The future

A great deal remains to be learned about axolotl biology and exactly what elements are involved in regeneration. In the future, phenocopying regenerative elements into a mammalian model might be possible, bringing researchers one step closer to applications in regenerative medicine. Perhaps its secrets are the real reason of the monster smile.

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Written By:
Mr. Farhaan Maudarbocus, 2nd Year BPharm Student, JSSAHERM

Depression: Time to Remove the Tag

"Depression", a ten-letter word that is still highly frowned upon in numerous countries. It might not be an overstatement to say that we all must have come across at least one person suffering from depression. And to perhaps most of us, or a minority of us, the thought must have crossed our mind, "Oh, this person is overreacting to this 'mere' incident", "Depression is a 'mere' fairy tale". However, the grim fact remains that depression is far from being a "made up" fairy tale.

If we must define the term 'DEPRESSION', it would be as follows:

DEPRESSION IS A FEELING OF INTENSE SADNESS; IT MAY FOLLOW A RECENT LOSS OR OTHER SAD EVENT BUT IS OUT OF PROPORTION TO THAT EVENT AND PERSISTS BEYOND AN APPROPRIATE LENGTH OF TIME.

It forms part of the mood disorders which are psychiatric illnesses in which emotional disturbances consist of prolonged periods of excessive depression or elation. According to theWorld Health Organization, an estimated 3.8% of the population is affected, including 5.0% among adults and 5.7% among adults older than 60 years. Approximately 280 million people in the world have depression. Since the ominous arrival of the Covid-19, the intensity of depression has been further strengthened. Women are twice as likely as men to suffer from depression.

So, what causes depression?

In my opinion, depression is a quite mysterious disorder since the causes aren't fully understood. There are a number of factors that can encourage depression to target someone. They are as follows:

- Heredity
- Side effects of certain medications
- Introverted personality
- Emotionally upsetting events
- Hormonal changes
- Physical disorders

According to psychological studies, women tend to respond to adversity by withdrawing into themselves and blaming themselves. On the other hand, men tend to deny the adversity and engage themselves into activities.

Types of Depression

Depression that follows a traumatic event is called **situational depression**. It can be the death of a loved one. Depression without an apparent precipitating event is called **endogenous depression**. Endogenous depression occurs without the presence of stress or trauma.

Symptoms of Depression

The symptoms develop gradually over days or weeks. The person appears slow, sad, irritable, and anxious. Many people with depression cannot experience joy, grief, and pleasure. In other words, world and life becomes meaningless. Thinking, speaking, and general activities slow down so much that at some point, they are stopped. All routines are stopped. Most depressed people have difficulty in falling asleep, there is loss of sexual desires, poor appetite resulting to weight loss. In women, they can stop menstruating.

Diagnosis

A doctor is able to diagnose depression from its signs and symptoms. A previous history of depression or a family history helps to confirm the diagnosis.

Usually, standardized questionnaires are used to help measure the degree of depression, for instance, **The Hamilton Depression Rating Scale** which is conducted verbally by an interviewer and **The Beck Depression Inventory** which is a self-administered questionnaire.

Laboratory tests may be in aid for a doctor to determine the cause of depression. This is particularly useful for women, in whom hormonal factors could contribute to depression.

However, in difficult cases, doctors may perform other tests to confirm the diagnosis of depression. For instance, sleeping problems are prominent signs of depression. Hence, doctors may use a sleep electroencephalogram to measure the time it takes for rapid eye movement sleep to begin after the person falls asleep. Normally, it takes about 90 minutes. In a person with depression, it usually takes less than 70 minutes.

Prognosis and Treatment

An untreated depression may last 6 months or longer. Although mild symptoms persist in many people, functioning tends to return to normal. Nonetheless, most people with depression experience repeated episodes of depression.

Medications are the cornerstone of treatment for depression today. Other treatments include psychotherapy and electroconvulsive therapy. Sometimes, a combination of these different therapies is used.

Types of Antidepressants

1. Tricyclic and similar antidepressants
    - Amitriptyline
    - Amoxapine
    - Bupropion
    - Clomipramine
2. Selective Serotonin Reuptake Inhibitors
    - Fluoxetine
    - Fluvoxamine
    - Paroxetine
    - Sertraline
3. Monoamine Oxidase Inhibitors
    - Isocarboxazid
    - Pargyline
    - Phenelzine
4. Psychostimulants
    - Dextroamphetamine
    - Methylphenidate

Next time we meet a person suffering from depression, let's not be clouded with the idea of it being a state triggered by "merely" a sad incident.

Instead, let's try to be a ray of sunshine who could pierce through the clouds of depression. Be there for a friend!

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Written By:
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Can You Recover from Kidney Failure?

Our kidneys are basically our bodies' filtration apparatus. Its functions are to clean the blood and remove waste from our body which is excreted in our urine. But if the kidneys are not functioning properly this could lead to a large accumulation of toxins in the body. This condition under medical terms is known as Renal Failure and if neglected, it may result to death.

What are these bean shaped organs?

These two neglected filters which help in the proper functioning of the body are about the size of a fist. They are located just below our thoracic cavity and on each side on our vertebral column. They are basically our bodies' cleaners and discard their rubbish in the urine. They also are our bodies' regulators of sodium, potassium, calcium, etc.… and they are the producers of hormones that regulate our blood pressure and red blood cells.

What are the causes of this disregarded condition?

1. An excess of glucose intake in the body, or medically called Diabetes is one main cause. In 2015 a survey was done showing that 257,442 people between the ages of 25 and 74 years suffer from diabetes in Mauritius and most of them aren't aware that they can end up damaging their beans.
2. Our kidneys, like many other organs, are directly connected to our heart by arteries and a condition that targets the latter, is known as hypertension. In 2015, the prevalence of hypertension among Mauritian adults aged 25 – 74 years was 28.4%. This condition not only is a minor sign of renal failure but also an indicator of cardiovascular arrest and when you are already diagnosed with renal failure, you are more prone to have a heart attack.
3. The over consumption of anti-inflammatory medications such as ibuprofen, naproxen, aceclofenac, diclofenac, celecoxib, indomethacin, etc.… In simple terms these medications when they achieve their goal and are broken down in your system, they deposit as crystals on your kidneys. Our kidneys try to evacuate them from the body, but they are unable to and on accumulation, they block the urine flow which prevents the removal of other wastes from your body as well.
4. Many more disorders either genetic or prior to bad lifestyle.

How do you know that your beans aren't working?

The condition is not something that you go to sleep without and the next morning you wake up with it. It is prior to a series of stages in which your body will slowly alert you about.

- **STAGE 1**

  High blood pressure, swelling, urine infections, high protein in your urine, and spots of blood in urine

- **STAGE 2**

  Feeling tiresome, acute swelling more located in hands and feet, cramps, pain in lower back, dry and irritant skin, restlessness in legs, insomnia, urine output decrease, and the colour of the urine is darker.

- **STAGE 3**

  High potassium and phosphorus, a buildup of acid in body, anemia, loss of appetite, throwing up after eating (not being able to keep anything on stomach), decrease of calcium content, breathlessness, and changes in skin colour.

How can we cure our precious beans?

Till date, this condition has only 2 cures. They aren't life elongating cures but, in both cases, there is an average lifespan.

- **The first treatment is Dialysis.**

  This treatment is based on the example of an artificial kidney. It is a process through which your blood goes through a machine which is connected to your body through a main vein either located in your arms, upper leg or neck, and in the machine, it is filtered to remove toxins such as potassium, phosphorus, and sodium, and then it is returned back to the body.

- **The second treatment is kidney transplant.**

  This transplantation involves the removal of a healthy kidney either from a living donor or deceased and placing it in the patient's body where it will perform all the activities that their kidneys could no longer perform. On placement of the kidneys, their artery and vein is connected to the patients' artery and vein and also to their bladder. The fascinating thing about this transplant is that there is no need for removal of the patients' failed beans as they have shrunk in size. Only in severe conditions are the stagnant beans removed.

The condition is not one to be neglected, and in most cases can be cured when still in its baby phase. If the signs aren't taken seriously upon arrival of the last stages and being faced with only two solutions, everyone will give up. Even the treatment of this fellow isn't promising, and the patients are aware of the eventual degradation of their condition. Without health, life seems lifeless.

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Written By:
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Polio

What is POLIO?

Polio, also known as poliomyelitis, is a disabling and life-threatening disease caused by a virus named polio virus. Reported in history, the first documented polio epidemy happened in the United States in 1894 where 18 people died and 132 persons were permanently paralyzed. Along with the spread of the disease around the globe, Polio was found to be highly infectious, affecting mainly children under 5 years old.

Polio is transmitted by person-to-person, through fecal-oral route or by contaminated water or food. When the virus reaches the intestines it multiples and spreads, and from there it reaches our nervous system, causing paralysis. In some cases, polio is transmitted from an infected person to a healthy individual by saliva when the latter sneezes or coughs. The polio virus attacks the motor neurons that carry messages in the form of electrical impulses between the brain and muscles. It particularly affects the motor neurons in the spinal cord that leads to paralysis.

Treatment for polio

Up till now there is no cure nor treatment for polio. The people suffering from polio may follow physical or heat therapy that can help with the weakness in the arms or legs. This may also help in reducing the long terms effects of polio. Doctors will spot polio based on the symptoms namely high temperature, sore throat, abdominal pain, and muscle pain. In the first week, throat swabs and a blood sample are taken and sent to laboratory for tests. As there is no cure that exists, the doctors aim toward diminishing the discomfort and complications that their patient will suffer from. They will then prescribe pain relivers and portable ventilators will be given to help them breathe normally.

The good news however is that even if there is no cure for polio, it can be prevented with a vaccine. Inactivated polio vaccine (IPV) was developed by Dr. Jones Salk in 1955 and declared safe and effective. This started the widespread immunization against polio.

In the 1920s, the iron-lung which is a respirator that resembled a coffin was used to treat polio. It was first used that decade to save a child that was infected with polio and needed help breathing because of that. This was Alexander Paul who is now aged 76 from Texas and is still in the machine today.

Children suffering from polio paralysis

Rotary and its fight against Polio

Polio is still very much present today. Many of us might not feel concerned when we all should be since if we all work together in letting the world know about this virus more people will want to help into eradicating it. It is celebrated each year on the 24th of October. One of the most famous organizations that fight against polio is the Rotary International. In 1979 the Rotary International began its fight against polio with a multi-year project to immunize 6 million children in the Philippines against polio. In 1988 the Rotary International and the World Health Organization started the Global Polio Eradication Initiative. In this year there was 350,000 cases of polio reported in 125 countries over the world. Later in 1995 the Rotary launched the PolioPlus Partners program which allowed the rotary members in polio-free countries to help eradicate polio in different countries. The rotary foundation raised more than 500 million dollars to eradicate polio in 2003. However, Afghanistan, Egypt, India, Niger, Nigeria, and Pakistan remained polio endemic. Their fight to eradicate polio continued and is still going on where recently in 2020 the WHO declared the African region wide polio-free. The number of cases was 649 in 2021. Funds are still being raised to help countries with polio cases, especially in poor countries where the means are not readily available for vaccines.

Members of the Rotary, Rotaract and Interact Club of Rodrigues during a fund-raising event for Polio

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Written By:
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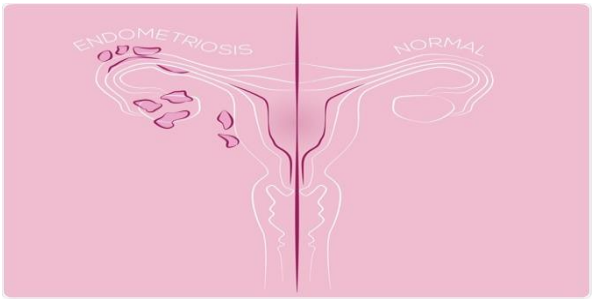
Missed or Delayed Diagnosis of Endometriosis

What is Endometriosis?

Endometriosis is a condition defined by the presence of endometrial glands and stroma in areas outside of the uterus, typically in the ovaries, peritoneum, and the rectovaginal septum. At the beginning of the follicular phase of the menstrual cycle, these cells react similarly to those within the womb.



In anticipation of fertilization, the cells become thick with the nutrients and fluids necessary to nourish an embryo. If fertilization does not occur, the cells are shed as menstrual bleeding. In endometriosis, these cells cannot be shed via the vaginal canal, causing inflammation, and scarring of the surrounding tissues.

Symptoms of endometriosis vary in intensity and do not correlate with the extent of inflammation and scarring; some women with endometriosis do not experience any symptoms, whilst others experience significant pain. Classical symptoms of the condition include:

- Pain: This can include painful menstruation, pain during ovulation, pain during sexual intercourse, and generalized pelvic pain.
- Bleeding: This can consist of heavy periods with prolonged bleeding, irregular periods, bleeding between periods, and losing darker blood before menstruation.
- Bowel and bladder symptoms: Typical symptoms include irritable bowel syndrome, pain passing urine, painful bowel movements, or bleeding from the bowel.
- Mental symptoms: Endometriosis is often accompanied by fatigue, depression, and difficulties with concentration.

The impact of delayed diagnosis

I. Wellbeing

According to a survey of over 10,000 women conducted in the United Kingdom, 95% of respondents reported that endometriosis had a negative impact on their wellbeing, 89% felt it had affected their daily functioning, and 83% reported feeling worried about the impact the condition may have on their future life.

Feelings of hopelessness and depression were also very high, and half felt it had impacted their social relationships. Given the endometriosis symptoms include chronic pain, pain during sexual intercourse, and fertility concerns, the impact that delaying diagnosis, and therefore access to evidence-based treatments is severe.

II. Economic impact

A recently completed large-scale retrospective analysis of clinical data in the US investigated the symptom burden and healthcare costs of delayed diagnosis. It divided women into three groups: short delay who were diagnosed within 12 months of symptom onset, intermediate delay for whom diagnosis took 1-3 years, and a long delay group who waited 3-5 years.

The results showed that pelvic pain and the likelihood of comorbidity were significantly correlated with increasing diagnostic delay. Additionally, the women in the long delay group were considerably more likely to use emergency services for endometriosis symptoms and had significantly more hospital visits and higher pharmacy costs.

Recommendations for healthcare practice

Strategies to mitigate the negative social, psychological, and economic impact of endometriosis should include:

- Improving the education of healthcare professionals to increase awareness of the clinical features of endometriosis.
- Increasing women's awareness of the condition and destigmatizing menstrual irregularities.
- Providing holistic post-diagnostic support, including emotional, social, and psychosexual support.

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FDA Approved Drugs

S.N	Drug	Indication	Date of Approval
1	Xenpozyme (olipudase alfa-rpcp) Injection	Treatment for Acid Sphingomyelinase Deficiency	31/08/2022
2	Spevigo (spesolimab-sbzo) Injection	Treatment for generalized pustular psoriasis flares	01/09/2022
3	Daxxify (daxibotulinumtoixnA-lanm) Injection	Treatment for moderate-to-severe glabellar lines associated with corrugator and/or procerus muscle activity	07/09/2022
4	Sotyktu (deucravacitinib) Tablets	Treatment for moderate-to-severe plaque psoriasis	09/09/2022
5	Rolvedon (eflapegrastim) Injection	To decrease the incidence of infection in patients with non-myeloid malignancies receiving myelosuppressive anti-cancer drugs associated with clinically significant incidence of febrile neutropenia	09/09/2022
6	Terlivaz (terlipressin) Injection	To improve kidney function in adults with hepatorenal syndrome with rapid reduction in kidney function	14/09/2022
7	Elucirem (gadopiclenol) Injection	To detect and visualize lesions, together with MRI, with abnormal vascularity in the central nervous system and the body	21/09/2022
8	Omlonti (oomidenepag isopropyl) Solution	To reduce elevated intraocular pressure in patients with open-angle glaucoma or ocular hypertension	22/09/2022
9	Relyvrio (sodium phenylbutyrate/taurursodiol) Suspension	Treatment for amyotrophic lateral sclerosis (ALS)	29/09/2022
10	Lytgobi (futibatinib) Tablet	Treatment for intrahepatic cholangiocarcinoma harboring fibroblast growth factor receptor 2 (FGFR2) gene fusions or other rearrangements	30/09/2022

11	Imjudo (tremelimumab) Injection	Treatment for unresectable hepatocellular carcinoma	21/10/2022
12	Tecvayli (teclistamab-cqyv) Injection	Treatment for relapsed or refractory multiple myeloma among adults who have received at least four specific lines of therapy	25/10/2022
13	Elahere (mirvetuximab soravtansine-gynx) Injection	Treatment for patients with recurrent ovarian cancer that is resistant to platinum therapy	14/11/2022
14	Tzield (teplizumab-mzwv) Injection	To delay the onset of stage 3 type 1 diabetes	18/11/2022
15	Rezlidhea (olutasidenib) Capsule	Treatment for adults with relapsed or refractory acute myeloid leukemia with a susceptible isocitrate dehydrogenase-1 (IDH1) mutation	01/12/2022

Drug Profile: Aripiprazole

Class: Atypical antipsychotic

Indication: The oral formulations are indicated for Schizophrenia, Acute Treatment of Manic and Mixed Episodes associated with Bipolar I, Adjunctive Treatment of Major Depressive Disorder, Irritability Associated with Autistic Disorder, Treatment of Tourette's disorder. The injection is indicated for Agitation associated with schizophrenia or bipolar mania.

Mechanism of Action: The mechanism of action of aripiprazole in schizophrenia or bipolar mania, is unknown. However, the efficacy of aripiprazole could be mediated through a combination of partial agonist activity at D2 and 5-HT1A receptors and antagonist activity at 5-HT2A receptors. Actions at receptors other than D2, 5-HT1A, and 5-HT2A may explain some of the other clinical effects of aripiprazole (e.g., the orthostatic hypotension observed with aripiprazole may be explained by its antagonist activity at adrenergic alpha1 receptors).

Dosage Form and Administration: Aripiprazole is available in the form of Tablets (2 mg, 5 mg, 10 mg, 15 mg, 20 mg, and 30 mg), Orally Disintegrating Tablets (10 mg and 15 mg), Oral Solution (1 mg/mL), and Injection (9.75 mg/1.3 mL single-dose vial).

- Dosing for Schizophrenia:
  The recommended starting and target dose for adults is 10 or 15 mg/day administered on a once-a-day schedule in tablet form without regard to meals. As for adolescents, the starting dose is 10 mg/day.

- Dosing for Acute Treatment of Manic and Mixed Episodes associated with Bipolar I Disorder:
  The recommended starting dose in adults is 15 mg given once daily as monotherapy and 10 mg to 15 mg given once daily as adjunctive therapy with lithium or valproate. The dose may be increased to 30 mg/day based on clinical response. The safety of doses above 30 mg/day has not been evaluated in clinical trials.

  The recommended starting dose in pediatric patients (10 to 17 years) as monotherapy is 2 mg/day, with titration to 5 mg/day after 2 days, and a target dose of 10 mg/day after 2 additional days. Recommended dosing as adjunctive therapy to lithium or valproate is the same. Subsequent dose increases, if needed, should be administered in 5 mg/day increments. Aripiprazole can be given without regard to meals.

- Dosing for Adjunctive Treatment of Major Depressive Disorder:
  The recommended starting dose for adults as adjunctive treatment for patients already taking an antidepressant is 2 to 5 mg/day. The recommended dosage range is 2 to 15 mg/day. Dosage adjustments of up to 5 mg/day should occur gradually, at intervals of no less than 1 week.

- Dosing for Irritability Associated with Autistic Disorder:
  The recommended dosage range for pediatric patients (6 to 17 years) is 5 to 15 mg/day. Dosing should be initiated at 2 mg/day. The dose should be increased to 5 mg/day, with

subsequent increases to 10 or 15 mg/day if needed. Dose adjustments of up to 5 mg/day should occur gradually, at intervals of no less than 1 week.

- Dosing for Tourette's Disorder:
  The recommended dosage range for pediatric patients (6 to 18 years) is 5 to 20 mg/day. For patients weighing less than 50 kg, dosing should be initiated at 2 mg/day with a target dose of 5 mg/day after 2 days. The dose can be increased to 10 mg/day in patients who do not achieve optimal control of tics. Dosage adjustments should occur gradually at intervals of no less than 1 week. For patients weighing 50 kg or more, dosing should be initiated at 2 mg/day for 2 days, and then increased to 5 mg/day for 5 days, with a target dose of 10 mg/day on day 8. The dose can be increased up to 20 mg/day for patients who do not achieve optimal control of tics. Dosage adjustments should occur gradually in increments of 5 mg/day at intervals of no less than 1 week.

- Dosing for Agitation Associated with Schizophrenia or Bipolar Mania (Intramuscular Injection):
  The recommended dose for adults is 9.75 mg. The recommended dosage range is 5.25 to 15 mg. If agitation warranting a second dose persists following the initial dose, cumulative doses up to a total of 30 mg/day may be given.

- Dosing of Oral Solution:
  The oral solution can be substituted for tablets on a mg-per-mg basis up to the 25 mg dose level. Patients receiving 30 mg tablets should receive 25 mg of the solution.

- Dosing of Orally Disintegrating Tablets:
  The dosing for Orally Disintegrating Tablets is the same as for the oral tablets.

Pharmacokinetics: The major metabolite, dehydro-aripiprazole, has been shown to have affinities for D2 receptors similar to the parent drug, aripiprazole, and represents 40% of the parent drug exposure in plasma. The mean elimination half-lives are about 75 hours and 94 hours for aripiprazole and dehydro-aripiprazole, respectively. Steady-state concentrations are attained within 14 days of dosing for both active moieties. Aripiprazole accumulation is predictable from single-dose pharmacokinetics. At steady-state, the pharmacokinetics of aripiprazole is dose-proportional. Elimination of aripiprazole is mainly through hepatic metabolism involving two P450 isozymes, CYP2D6 and CYP3A4. For CYP2D6 poor metabolizers, the mean elimination half-life for aripiprazole is about 146 hours.

Adverse Reactions: The most common adverse reactions in adult patients in clinical trials (≥10%) were nausea, vomiting, constipation, headache, dizziness, akathisia, anxiety, insomnia, and restlessness while in the pediatric clinical trials (≥10%), they were somnolence, headache, vomiting, extrapyramidal disorder, fatigue, increased appetite, insomnia, nausea, nasopharyngitis, and weight increased.

Contraindications: Aripiprazole is contraindicated in patients with a history of a hypersensitivity reaction to aripiprazole. Reactions have ranged from pruritus/urticaria to anaphylaxis.

Precautions:

- Cerebrovascular Adverse Reactions in Elderly Patients with Dementia-Related Psychosis: Increased incidence of cerebrovascular adverse reactions (e.g., stroke, transient ischemic attack, including fatalities).
- Neuroleptic Malignant Syndrome: Manage with immediate discontinuation and close monitoring.
- Tardive Dyskinesia: Discontinue if clinically appropriate.
- Metabolic Changes: Atypical antipsychotic drugs have been associated with metabolic changes that include hyperglycemia/diabetes mellitus, dyslipidemia, and body weight gain
  - Hyperglycemia/Diabetes Mellitus: Monitor glucose regularly in patients with and at risk for diabetes
  - Dyslipidemia: Undesirable alterations in lipid levels have been observed in patients treated with atypical antipsychotics
  - Weight Gain: Weight gain has been observed with atypical antipsychotic use. Monitor weight.
- Orthostatic Hypotension: Monitor heart rate and blood pressure and warn patients with known cardiovascular or cerebrovascular disease, and risk of dehydration or syncope.
- Leukopenia, Neutropenia, and Agranulocytosis: have been reported with antipsychotics including Aripiprazole. Patients with a history of a clinically significant low white blood cell count (WBC) or a drug-induced leukopenia/neutropenia should have their complete blood count (CBC) monitored frequently during the first few months of therapy and discontinuation of Aripiprazole should be considered at the first sign of a clinically significant decline in WBC in the absence of other causative factors.
- Seizures/Convulsions: Use cautiously in patients with a history of seizures or with conditions that lower the seizure threshold.
- Potential for Cognitive and Motor Impairment: Use caution when operating machinery.
- Suicide: The possibility of a suicide attempt is inherent in schizophrenia and bipolar disorder. Closely supervise high-risk patients.

Drug Interactions:

- The concomitant use with strong CYP 3A4 or CYP2D6 inhibitors increased the exposure of aripiprazole.
- The concomitant use with carbamazepine decreased the exposure of aripiprazole.
- Due to its alpha-adrenergic antagonism, aripiprazole has the potential to enhance the effect of certain antihypertensive agents.
- The intensity of sedation was greater with the combination of oral aripiprazole and lorazepam as compared to that observed with aripiprazole alone. The orthostatic hypotension observed was greater with the combination as compared to that observed with lorazepam alone.

Events' Corner

Event 1: Orientation Week for BPharm Freshers' 2022

School of Pharmacy welcomed its 3rd cohort of students on the 29th of August 2022 and organized the introductory week to familiarize the new batch of aspiring pharmacists with activities such as campus visit, guest and motivational lectures, library-use handling, introduction to E-Learning platform, fire safety instructions, and the traditional ice-breaking session with senior students.

Glimpse of the sessions are given below:

School of Pharmacy

JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS

A degree awarding institution registered with the Higher Education Commission, Mauritius

Orientation Programme for B Pharm Freshers
29 – 31 August 2022

AGENDA

Day 1: Monday, 29 Aug 2022 — **Venue: Classroom 12**

10:00 AM	Welcome and overview of administrative and student services	Mr K P Naveen, Registrar
10:30 AM	About JSSAHER, Mauritius and Transition from School to College	Dr Praveen Mohadeb, CEO
11:00 AM	Campus Visit	Dr Khayati Moudgil and Ms. Suparna
01:00 PM	Introduction and Icebreaking session with III and V semester students	Dr Khayati Moudgil and student representatives

Day 2: Tuesday, 30 Aug 2022

09:30 AM	Safety & Health visit and Fire Safety Training & Fire drill	Health and fire safety Department
10:30 AM	About the School of Pharmacy and Program Orientation	Prof. (Dr) Ashish Wadhwani, Head, Faculty of Health Sciences
01:00 PM	Pharmacy as a Profession and Career Opportunities (Virtual Guest Lectures)	Dr Vishal Kumar Gupta, Dy. Director (Academics), JSSAHER, Mysuru

Day 3: Wednesday, 31 Aug 2022

10:00 AM	Briefing on JSSAHER E-learn Platform	Mr K P Naveen, Registrar and team
10:30 AM	Guest Lecture: Pharmacy in Mauritius	CV Kaajal Luckraz, Founder and Owner, Transphorm Businesses, Mauritius

Event 2: MRIC Visit to JSSAHERM

On the 14th of September 2022, JSS Academy of Higher Education and Research, Mauritius welcomed representatives from the Mauritius Research and Innovation Council (MRIC) with the aim of exchanging information about both organizations.

The visit accomplished its purpose following the speech of the Prof. Theesan Bahorun Executive Director, from the MRIC team, who acquainted those present with basic information on the establishment and the various schemes offered by the MRIC, and Dr. Praveen Mohadeb, CEO and Vice-Chancellor of JSSAHER, Mauritius briefed about facilities available at JSSAHERM . Contrastingly, he delivered an elaborate dialogue on the legacy of the institution, the numerous activities carried out by JSSAHERM as well as the diverse courses offered.

To further brief the MRIC team about JSSAHERM, they were given a complete tour of the classrooms and labs set up on the campus, which are used for the benefit of the students of the academy, thus marking the end of the fruitful visit.

Event 3: World Pharmacist Day 2022

The 25th of September marks the celebrations of World Pharmacist Day annually and this year was no different. In this occasion, JSS Academy of Higher Education and Research, Mauritius seized the opportunity to host a chain of activities revolving around the theme "Pharmacy United in Action for a Healthier World"- the motto for the year 2022. The events, held over 3 consecutive days, proved to be highly successful and hence the following purposes of the occasion were achieved:

1. Educating pharmacists and students about the ways of imparting optimum patient care
2. Acquainting the staff and students of the academy with the basic principles of first aid
3. Service to the society through a free health examination camp

Day 1: Thursday 22nd September 2022 (Webinar)

Festivities of the World Pharmacist Day debuted strongly with a virtual guest lecture by Dr. Suresh Mohankumar, Associate Professor in Pharmacy at Swansea University, UK. An enthusiast of pharmacy education and research at heart, Dr. Mohankumar devotes his time in devising strategies which could reshape the pharmaceutical sector into providing enhanced patient care. Therefore, it was indisputable for the theme of the webinar to be any other than "Competent and Caring Pharmacists are in the Making to Heal the World".

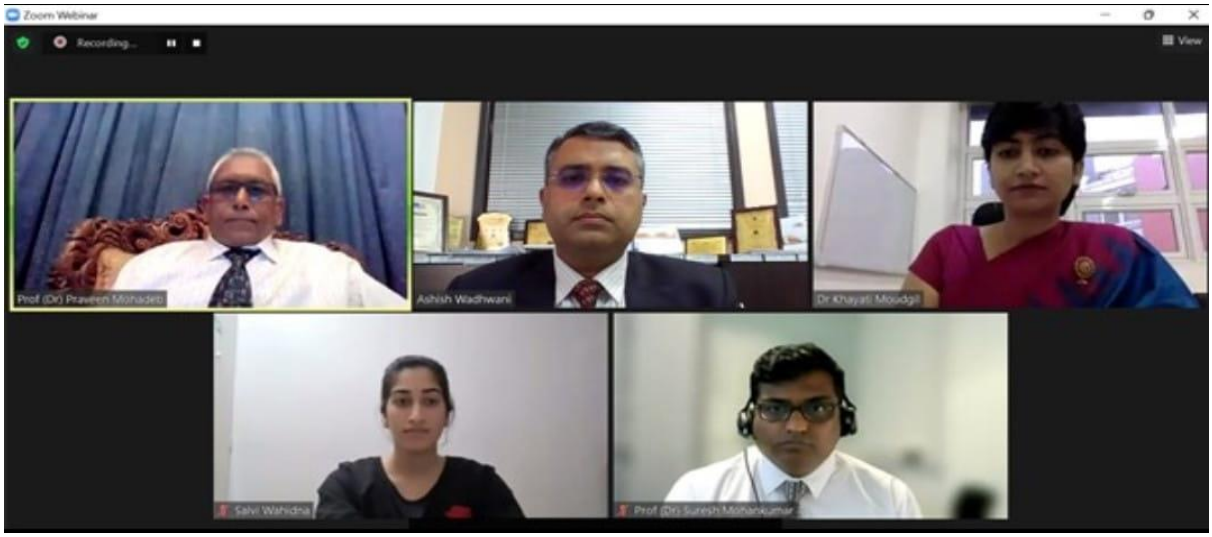
The webinar was started off at 6.00 PM (MUT) by a short but indispensable speech from Dr. Ashish Wadhwani, the convenor for that day and Professor & Head Faculty of Health Sciences at JSSAHER Mauritius. In his address, Dr. Wadhwani acknowledged and welcomed the chief speaker along with all 210 participants present and invited Dr. Praveen Mohadeb, CEO of JSSAHER Mauritius, to convey a few words to the audience.

After Dr. Mohadeb's opening remarks came the part which was eagerly being anticipated by the audience, Dr. Mohankumar's speech. His 18 years of experience in health sciences education, priorly pointed out during his introduction by Dr. Khayati Moudgil, Assistant Professor at JSSAHER Mauritius, undoubtedly played a contributing factor in the highly engrossing and remarkable presentation he delivered.

During Dr. Mohankumar's 45-minutes-long talk, he expanded greatly on the following key points of the webinar:

- The ways we should adopt to go from an incompetent to a proficient, compassionate pharmacist
- How pharmacists can enhance quality of life by differentiating between patient-centered and person-focused care
- Accounting for patient safety when dispensing medications
- The digital future of pharmacy

Further clarifications were offered to the listeners in the last segment of the webinar through the Q&A session led by Ms. Salvi Wahidna, 2nd year BPharm student at JSSAHERM. Following the elaborate answers presented by Dr. Mohankumar, the impactful virtual lecture was outlined and concluded by Ms. Salvi Wahidna at 7.00 PM (MUT).



Day 2: Friday 23rd September 2022 (First Aid Talk and Training)

The "First Aid Talk and Training – Check, Call & Care" was the event which provided the drive for the second day of celebrations. To bring this event to fruition, JSSAHER Mauritius invited distinguished guest, Mr. Bashir Oaris, a First Aid Trainer from Professional First Aiders for a lengthy period of 40 years, as pointed out by Dr. Ashish Wadhwani, Professor & Head Faculty of Health Sciences at JSSAHER Mauritius.

The staff and students of JSSAHERM, together with invited guests, were presented with a gist of the principles and the undermentioned aspects of first aid by Mr. Oaris during his address:

- Asphyxia
- Disorders of the Circulation
- Wounds and Bleeding
- Burns and Scald
- Poisoning
- Bone, Joint and Muscle Injuries
- Effects of heat and cold
- Foreign Bodies
- Disorders of Consciousness
- Bites and Sting

- Emergency Childbirth
- Dressings and Bandages
- Handling and Transport

To share some practical insight into the world of first aid, Mr. Oaris provided a demonstration of CPR on various age groups (infant, child, and adult) by making use of manikins. His simulation of a real-life incident requiring first aid additionally included the steps to be followed to move a casualty into the recovery position and the techniques which should be applied to provide emergency treatment to a choking person.

The main objective of this activity having been achieved, that is, enlightening the members of the audience on how to effectively assess and manage a critical situation to impart first aid, the speaker was then open to take in questions from the listeners. The latter seized the chance to clear their ambiguities regarding the 2-hours-long talk and received thorough answers from Mr. Oaris.

Before the event came to an end at 11.30 AM, Ms. Zina Elaheebucus, 3rd year BPharm student at JSSAHERM, presented her deep gratitude to Mr. Oaris on behalf of the audience and in conclusion, assured him that the participants had certainly gained awareness on the vital role first aid plays in resuscitating a patient and in promoting their recovery.

Day 3: Saturday 24th September 2022 (Free Health Camp)

In hopes of offering Service to the Society, a free health camp was set up for the last segment of this occasion. The combined efforts of three organisations, namely JSSAHER Mauritius, Sihha Medical Centre, Port Louis and Pharmaceutical Association of Mauritius led to the fruitful results of the camp, demarcated by the mass of 224 people who made a visit on that day and by the health check-ups amounting to a total figure of 1295 tests. Another upshot not to be disregarded is the distribution of gifts (Glucometer, Oral Care products and Vitamin Supplements among others) to the public of an estimated net worth of Rs 200,000.

The hands of the clock striking half an hour past 10.00 AM signified the start of the comprehensive health examination of the visitors, with media coverage ensured by the Mauritius Broadcasting Corporation (MBC). The many representatives of Sihha Medical Centre and the Pharmaceutical Association of Mauritius performed the health tests along with the students and staff of JSSAHER Mauritius.

The various constituents of the health exam included:

- Blood Pressure
- Blood Glucose Level
- Body Mass Index (BMI)
- Body Fat
- Eye Check-up
- Ear Check-up
- Dental Check Check-up and Oral Care Tips
- Complete Blood Count (CBC)
- Patient Counselling

Winners of the quiz contest held in the preceding days by the local radio stations Radio Maurice, Kool FM, and Best FM, also made an appearance as the event unfolded. To honour their achievement, they were rewarded with gift vouchers in the presence of Dr. Praveen Mohadeb, CEO of JSSAHER Mauritius, and Dr. Ashish Wadhwani, Professor & Head Faculty of Health Sciences at JSSAHER Mauritius. Naturally, this important moment was captured through the lenses of several cameras.

Since one of the main purposes of this event was to spread awareness among the general public about numerous common health issues, the distribution of pamphlets to examinees was another activity carried out during that day with joint and bone health, anaemia, and diabetes being some of the few health topics discussed in the leaflets.

The event, which went on like clockwork, drew to a close at 02.30 PM and with this, the celebrations for the commemoration of the World Pharmacist Day 2022 were wrapped up.

A glimpse of the event:

Event 4: Sports Day 2022

This year marked the first time JSSAHERM organised a sporting event reuniting students and staff alike. The event was subdivided into two major competitions which consisted of:

1. Indoor Games
2. Outdoor Games

Indoor Event:

Vibrant motivational speeches by Dr Praveen Mohadeb, CEO of JSSAHERM, and Dr. Ashish Wadhwani, Professor & Head Faculty of Health Sciences, kickstarted the sporting fest which was to be held on two consecutive days, comprising of a set of preliminary rounds on Friday the 4th of November and finals on Saturday the 5th of November. Activities took place in the cafeteria specially restored for the occasion.

Indoor games included:

- Badminton (male)
- Badminton (female)
- Badminton (mixed)
- Table Tennis
- Chess
- Domino
- Carrom
- Arm Wrestling
- Musical Chair
- Lemon & Spoon Race

Badminton was per se the main event which attracted the most enthusiasm from spectators but team games such as carrom also drew attention. Musical chair was pleasantly enjoyed by the students.

Preliminary-rounds day started at 09:30 a.m. and pursued till 4:00 p.m. with a break at noon where our athletes were given refreshments.

The following day, finalists were eager to finish off with a success and by the end of the day, winners stood as such:

Indoor activities	**Winners**
Badminton (male)	Abdool Yaseen
Badminton (female)	Oodally Umaira
Badminton (mixed)	Chummun Chetramsingh & Oodally Umaira
Table Tennis	Mahamed Umar
Chess	Chummun Chetramsingh
Domino	Tatayah Vignesh & Madoo Vasish

Carrom	Mr. Naveen K. P. & Maudarbocus Farhaan
Arm Wrestling	Inder Waseel Umar, Mrs. Devika, Joyram Neelakshi
Musical Chair	Joyram Neelakshi
Lemon & Spoon Race	Molabaccus Lutfiya

Outdoor Event:

Outdoor activities were held on the 18th of November; where the football field, basketball, and volleyball ground were the theatre of intensive competitive spirit from the students and staff. A Pétanque ground was also specially commissioned for the occasion. Competitions began again at 9.30 AM.

Activities included:

- Tug Of War
- Basketball
- Dodgeball
- Pétanque
- Volleyball
- Football

Tug Of War enjoyed particular success from student and staff alike while games such as Basketball and Volleyball though they were fun, proved to be quite competitive. Pétanque, while being relatively unknown to competitors Dr Ashish Wadhwani and Mr Naveen K. P., they dominated the game with ease. The day was finished off with the football match which was truly a sight to see- an unprecedented 7-1 score line for the winning team!

Medallists for Outdoor games:

Outdoor activities	**Winners**
Tug Of War	T. Vignesh, R. Eileen, J. Neelakshi, Mr S. Nitin, A. Yaseen
Basketball	T. Vignesh, M. Umar, M. Farhaan, J. Neelakshi, M. Rohan
Dodgeball	T. Vignesh, M. Farhaan, J. Neelakshi, O. Umaira
Pétanque	Mr. Naveen K. P., Dr. W. Ashish
Volleyball	M. Umar, A. Yaseen, D. Yuvraj, N. Haiman, H. Pravir
Football	S.S.M Abdallah, I. Umar, M. Umar, D. Anasheed, D. Yuvraj, P. Oummar

The winners in both parts of the Sports Day received medals in a ceremony held after the football match from the hands of the CEO, Dr. Praveen Mohadeb, Dr Ashish Wadhwani, Professor & Head Faculty of Health Sciences, Dr V Jaishree, Professor & Head Faculty of Life Sciences and Mr K P Naveen, Registrar of JSSAHERM.

The overall most decorated athletes were Ms. Neelakshi Joyram (5 medals), Mr. Umar Mahamed, and Mr. Vignesh Tatayah (4 medals each)

The organisation of the Sports Day was under the supervision of the JSSAHERM Sports Committee which comprised of:

- Mr. Sultan Sheik Muhammad Abdallah (Head of Sports Committee)
- Mr. Umar Mahamed
- Mr. Vignesh Tatayah
- Ms. Zeenaat Bhatoo
- Ms. Gitikha Bheenick
- Ms. Saniya Issimdar

The Sports Committee wishes to express gratitude to everyone involved in the success of the Sports Day and hopes to organise an even more grandiose event next time!

Glimpses of the Event:

Event 5: Visits and Guest Lectures

Event 5.1: Visit to Mauritius Meteorological Station and Weather Forecast

The Mauritius Meteorological Services is governed by the the Mauritius Meteorological Services Act 2018. The Director heads the MMS and is supported by two Deputy Directors, four Divisional Meteorologists and officers of the Meteorologist and Meteorological Technician cadres.

The vision of MMS is to be a weather resilient and climate-smart nation and the mission of MMS is to provide accurate and timely weather and climate services and early warnings for natural hazards for enhanced socio-economic development of the Republic of Mauritius.

It has overall national, regional, and international commitments as a member of the World Meteorological Organisation (WMO) and the International Civil Aviation Organisation (ICAO).

Its main function is to keep constant watch on the atmospheric conditions within a very large area of the globe over land, sea and in the atmosphere. You can also view the MMS strategic goals, services provided by the MMS, role of the MMS, and functions and powers of the MMS on the link provided below:

https://localgovernment.govmu.org/Pages/MMS.aspx

WEATHER FORECAST:

Weather is the day-to-day condition of the atmosphere at a place with respect to the temperature, humidity, rainfall and wind speed. In simple words, weather is what the sky and the air outside are like, such as cold and cloudy.

A weather forecast is simply a scientific estimate of future weather conditions.

Event 5.2: Guest Lecture by Dr. Varsha Bangalee

Thursday 6th of October was the day on which Dr. Varsha Bangalee, Associate Professor in Pharmaceutical Sciences, University of KwaZulu-Natal, and a highly qualified pharmacist, visited JSS Academy of Higher Education and Research, Mauritius. She was warmly welcomed and was made to tour some of the facilities and laboratories of the academy's campus by Dr. Ashish Wadhwani, Professor & Head Faculty of Health Sciences at JSSAHER Mauritius.

Following this, she addressed the students of the academy and shed some light on the state of affairs regarding the pharmaceutical sector in South Africa. Being a member of the Pharmaceutical Society of South Africa and the UKZN Biomedical Research Ethics Committee, she proceeded to elaborate on her personal experiences during the many years of her career. Lastly, she expressed her hopes for both Mauritius and South Africa to lay more emphasis on the importance of clinical pharmacy for the coming generation of pharmacists.

Event 5.3: Guest Lecture on "Recent Advances in Therapeutics"

The School organized a special guest talk on the 8th of November led by Mr. Sadeck Vawda, a member of the Royal Pharmaceutical Society of Great Britain and the Pharmaceutical Association of Mauritius, who is the General Manager of Unicorn (MSG Ltd Mauritius) for over 17 years.

MSG Ltd is one the most prominent pharmaceutical company on the island whose main areas of expertise include importation/distribution of medical products in association with major internationally recognized suppliers such as Novartis and Sanofi.

The lecture was open to all students from each cohort. In his address to the students, Mr.Vawda's lecture theme revolved around the recent advances in therapeutics. He stressed on the fundamental need to seek new forms of treatment to enhance patient treatment efficacy. Novel approaches for disease treatments explored by the orator included Atopic Dermatitis, Migraine, Immunotherapy for Cancer, ATMP drugs and Urinary Incontinence.

Following the closure of his lecture, Mr Vawda held a brief Q&A session where attendees' questions were promptly answered.

The lecture was concluded following the vote of thanks speech held by 3rd year BPharm student, Miss Umaira Oodally.

Event 5.4: Guest Lecture on "Chronopharmacology"

On the 17th of November 2022, JSSAHERM was pleased to receive the presence of Dr. P.D. Gupta and Dr. K. Pushkala, both renowned scientific contributors and fellow of many prestigious Indian and international societies who both delivered talks to students from all cohorts.

The topics brought up appeared relatively unconventional but interesting to the attendees where in the first part, Dr. P.D. Gupta introduced the concept of chronopharmacology. The latter is the use of our own biological clock to establish novel concepts and hypotheses which can be integrated to form part of a more adaptive form of treatment as clearly detailed by the orator. Chronopharmacology involves the manipulation of circadian rhythms, study of sleep patterns, and listening of heart beats amongst others to derive diagnosis and treatment.

In the second part of the lecture, the next orator, Dr. K. Pushkala familiarised listeners with the relationship between Light and Breast Cancer. She laid down the ideas on how photons of light may be contributing to this form of cancer by arguing that there is a possible correlation between the production and maintenance of the pineal hormone-melatonin.

Event 5.5: Visit of Dr Anthony K. Wutoh, Provost & Chief Academic Officer, Howard University, USA

Prof Dr A K Wutoh and Dr Rita Wutoh visited Mauritius between 1st to 6th Dec 2022.

The JSSAHERM team led by Prof (Dr) Praveen Mohadeb, CEO and VC met Dr and Mrs Wotoh at Hotel Sofitel for a dinner meeting and invited them to visit the JSSAHERM campus.

On 2nd Dec 2022 during their visit, a discussion was held with the authorities of JSSAHER Mauritius and JSS Academy, Mauritius for the opportunities with Howard University for offering identified programs in Mauritius catering to the needs of the African region.

Several Engineering and Pharmacy programs were discussed to be offered in both online and offline modes.

Besides the above proposal, further discussion was held for the opportunities for students who are presently pursuing their B Pharm degree at JSSAHER Mauritius for enrolling in the Master's program and Pharm D program at Howard University and collaborate on student and staff exchanges. It was a fruitful initial discussion and hopefully, both the institutions will come up with some of the programs to be offered in collaboration.

Event 6: CPDs and Conferences

Event 6.1: CPD Webinar on “Personalized Medicine: The Future of Health Care"

On the evening of the 17th of November 2022, JSS Academy of Higher Education and Research Mauritius, welcomed Prof. (Dr.) K. Gowthamarajan, the speaker for the CPD webinar (approved by the Pharmacy Council of Mauritius for one CPD Point) held on that day.

The webinar, which lasted for a full hour, was centered around the theme “Personalized Medicine: The Future of Health Care”. Dr. Ashish Wadhwani, Professor & Head Faculty of Health Sciences JSSAHERM, launched the virtual lecture at 6.00 PM with a few welcoming words for the panel members and audience. Then, Dr. Praveen Mohadeb, CEO and Vice-Chancellor of JSSAHERM, took over and delivered his opening remarks about knowing your patient (KYP), leadership, and social responsibilities among others.

The audience was next addressed by Dr. Gowthamarajan, who dived into the topic by presenting a wide array of information on the changing role of the pharmacist in the 21st century, 3D-printed drugs, body sensors, and the use of AI in the pharma industry. The virtual lecture was concluded following the Q&A session led by Ms. Lutfiya Molabaccus, 3rd Year BPharm student at JSSAHERM, during which the various queries posed by the audience were promptly and thoroughly answered by the orator.

Event 6.2: CPD Lecture for PAM 2nd Annual Congress

The Versatility of the Clinical Pharmacist- Shifts from Dispensing to Bedside Care

Dr Khayati Moudgil, Assistant Professor at JSS Academy of Higher Education and Research Mauritius, delivered an hour-long lecture centred on the importance and versatility of clinical pharmacists on the 19th of November 2022 at The Ravenala Attitude Hotel, Mauritius.

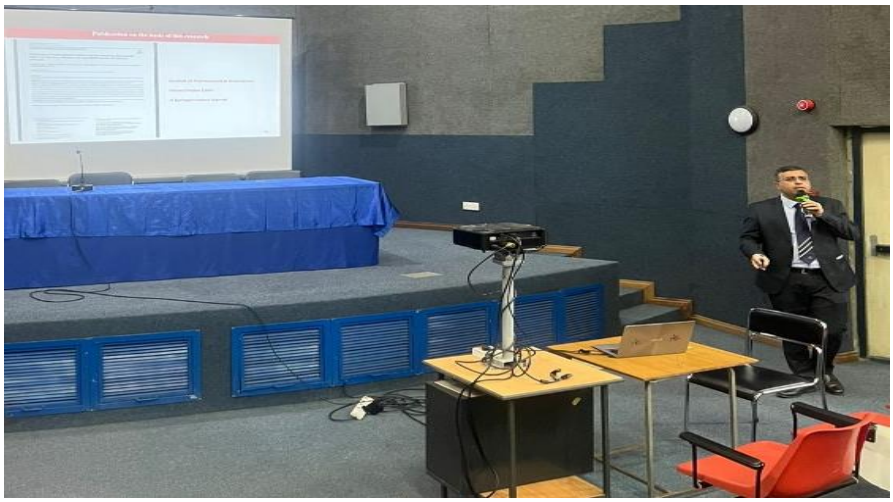
The talk, approved by the Pharmacy Council of Mauritius for four CPD points, was organised by the Pharmaceutical Association of Mauritius (PAM). Dr. Moudgil seized the opportunity to emphasize on the role and responsibilities of the clinical pharmacist, how they improve the quality of life with regards to medicines, the ways of administration, the patterns of use, drug effects on the patients and finally, the overall drug therapy management.

She presented some of the real time cases along with the case reports of adverse drug reactions and interactions. To conclude, she requested all the pharmacists present to create an awareness and the demand for clinical pharmacists in an Island.

Event 6.3: CPD Lecture for PAM

"Updates in diabetes research – Development of insulin-loaded dissolving microneedles for the management of diabetes"

Dr. Ashish D Wadhwani, Professor and Head, Faculty of Health Sciences, School of Pharmacy, JSS Academy of Higher Education and Research, Mauritius delivered a talk in PAM organized CPD on 30th Oct 2022. In his talk, he presented research work carried out by his team and emphasized on important aspects of transdermal drug delivery system and microneedle technology – a biomedical engineering approach for the preparation of dissolving microneedles for the treatment of diabetes. There were 150 + registered pharmacist who attended the CPD and the lecture was well appreciated by the audience.



Event 6.4: CPD Webinar on "Recent Updates in Pharmaceutical Sciences and Pharmacy Practice"

On 22nd December 2022 at 5:00 P.M. till 7:00 P.M. through online platform.

Zoom link: https://us06web.zoom.us/meeting/register/tZckd-qqqD8tE9YYrgxCIr7TuEMbesmcENwK

A Webinar on the mentioned topic was organized by JSS Academy of Higher Education and Research, Mauritius (JSSAHERM) and approved by the Pharmacy Council of Mauritius for TWO (2) CPD points with the following objectives:

- Biotechnology and the Pharmaceutical Applications in relation to Pharmaceutical Sciences
- Evolution of the Traditional Role of the Pharmacist -Dispensing of Medicines to Providing Clinical Services.

Renowned pharmaceutical sciences and biotechnology expert **Dr. Raghu Chandrashekhar**, Professor and Head, Department of Pharmaceutical Biotechnology, Manipal College of Pharmaceutical Sciences and **Dr Asish Kumar Saha**, Manager and Clinical Pharmacologist were the lead speakers for the webinar.

The webinar was started off at 5:00 PM (MUT). Dr Ashish Wadhwani, the convenor for that day and Professor and Head, Faculty of Health Sciences at JSSAHERM welcomed the virtual gathering and chief speakers and invited Dr Praveen Mohadeb, CEO of JSSAHER Mauritius for his opening remarks. Dr Mohadeb briefed about the importance of biotechnology in pharmaceutical sciences and clinical pharmacy in today's world.

Dr. Khayati Moudgil, coordinator of the webinar, introduced the speaker Dr. Raghu Chandrashekhar, along with the elaboration on his work and experience and requested the speaker to deliver his webinar on "Biotechnology and Advances in Pharmaceutical Sciences".

During Dr. R. Chandrashekhar's 45 minutes-long-talk, he greatly emphasized on why pharmacists need to study biotechnology and covered the areas and application of biotechnology. He explained the fermentation technology of biotechnology where enzymes, probiotics and antibiotics are produced. He touched upon the widespread list of FDA approved of biopharmaceutical biotechnology products in healthcare managements. He also highlighted on personalized medicines (pharmacogenesis), genotyping, gene therapy and its types.

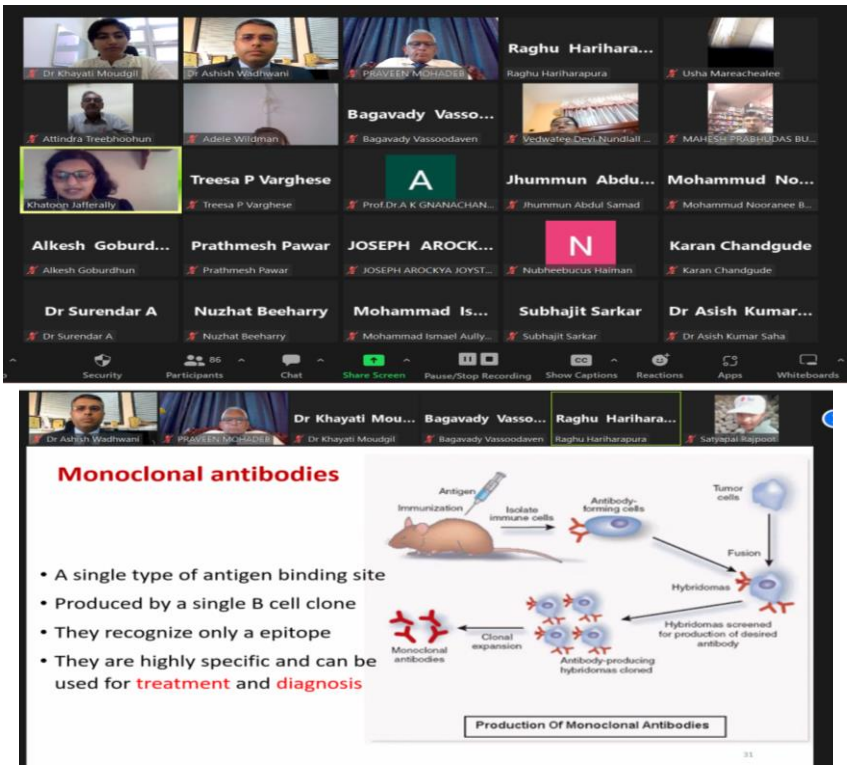
After this session, Dr Ashish Wadhwani, Professor and Head, thanked the speaker for his time in engaging the participants and giving them insights of updates in pharmaceutical sciences in the field of biotechnology. The participants were provided with more clarifications through a Q & A session conducted by Ms. Khatoon Jafferally, 3rd year BSc student at JSSAHERM. There was a number of questions raised which was well justified by Dr Raghu Chandrashekhar.

Around 06:10 P.M., the second session began where Dr Khayati Moudgil welcomed the speaker Dr Asish Kumar Saha and briefed about his experience and on the importance of clinical pharmacy. Dr Asish Kumar Saha, manager and clinical pharmacologist delivered his

valuable speech on “Migration from Community to Clinical Pharmacy”. In his speech he gave much importance to the community pharmacy, introduction to clinical pharmacy and goals of clinical pharmacologists. He emphasized based on pharmacy practice skills, roles and responsibilities of a clinical pharmacist in patient care. He also described about adverse reactions of drugs and its corrective action and therapy drug monitoring. He spoke on the use of medication chart review to optimize patients drug therapy and to prevent and to minimize drug related problems or medication errors. All current and recent medication orders should be reviewed. He gave appropriate examples to adverse reactions and symptoms demonstrating pictures and asked participants to guess the name of the disorders and diseases. He further elaborated on medication errors, ways to detect medication errors and its intervention action and medication reconciliation.

The session ended with an open session where participants could directly ask their questions to Dr. Asish Kumar Saha. The participants thoroughly enjoyed and interacted well with the speaker. Ms. Khatoon Jafferally, a student at JSSAHERM gave concluding remarks, she summarized and concluded the webinar and thanked all participants for joining the session on the behalf of JSS Academy of Higher Education and Research, Mauritius.

There were 100+ participants in this webinar among which they were scientists, professors, students, pharmacists, researchers and doctors. The talks were well appreciated by the participants that was evident by the reactions received in online session. In fact, it was an informative and meaningful webinar that inspired participants to learn more about the latest updates in pharmaceutical sciences and pharmacy practice.



Event 7: Celebrations – Diwali, Christmas, End of the Year 2022

7.1 Diwali: Festival of lights – 22nd Oct 2022

JSS Academy of Higher Education and Research, Mauritius celebrated its Diwali festivities with staff and their family.

The CEO Dr Praveen Mohadeb welcomed everyone with the lightning of lamp along with Mr KP Naveen, Dr Ashish Wadhwani and Dr Jaishree Vaijanthappa.

The function was well organized with various activities such as newspaper dance, quiz, singing, dancing, kids' corner, face painting, henna corner, food stalls and games for each age group.

7.2 Christmas: Festival Celebrating the Birth of Jesus Christ – 22nd Dec 2022

We celebrate Christmas because, as the angel said, the birth of Jesus Christ is "good news." Good news is meant to be celebrated. In fact, the angel said the news of Jesus' birth would cause "great joy" and would be "for all the people"—the joyful celebration would be universal. JSSAHERM welcomed and celebrated Christmas by welcoming Santa. Various events like "Secret Santa" for the staff, distributions of gifts, and kid's activities were executed. It was followed by the Feast Lunch for all.

7.3 End of the Year 2022: 26th Nov 2022

To commemorate the developments in 2022 and thank the efforts of the staff members, the end-of-year get-to-gather was organized at Casuarina Resort & Spa, Trou aux Biches for staff and their family members. The Directors of JSS Academy, Members of Board of Management, and Academic Council were also invited for the EoY gathering. The CEO and Vice Chancellor thanked and appreciated the staff members for academic, administrative, and research activities carried out by them for the year 2022 and mentioned about approvals of different programs received in 2022. In his address he also cited that we are moving on right direction and wished the staff and all other present a Merry Christmas and Happy New Year 2023.

Student Learning Experience – Internship

Internship of Lutfiya Molabaccus at LOVELIFE PHARMACY

At the end of 2nd year B Pharm, my internship work schedule was in two shifts: morning (8.30am-4pm) and evening (3pm-10pm). During the internship, a training on customer service was also followed.

Overview of the tasks carried out during the internship:

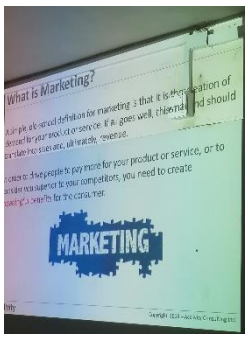
- Inventory of medicines, ordering and delivery process; medicines' identity and expiry date checked, input medicines to update stock on PharmBooks software, drugs information (generic, composition, therapeutic uses, doses and side effects) sought. Medicines were classified as per different suppliers, based on antibiotic bin, DD (Dangerous drugs) bin, refrigerated drugs and OTC drugs. Medicine storage techniques including FEFO (First Expired First Out) was used as well as maintaining inventory control by frequently verifying drugs' expiry dates on shelf.

- Precise prescription assessing - filling - dispensing of drugs, by interpreting the latin abbreviations, dosage forms, doses, frequency and even routes of administration. Dispensing labels were also made to provide accurate information on how to take the medication, time, frequency and whether before or after meals. For drugs which were out of stock, interaction with the Medical Practitioner was done to provide an alternative.

- Medication counseling to the patient on his therapeutic regimen, precautions to be taken to avoid drug interactions or overdose and patient interactions were carried out.

- Some health screening services such as blood pressure monitoring and blood glucose monitoring were provided with respective advice.

Under the pharmacist's supervision and guidance, after the 3 weeks of internship with enhanced communication skills acquired and team work with the pharmacy staff, I was able to independently dispense and counsel patients.



Internship of Oodally Haajra Bibi Umaira at PYRAMID PHARMACY

Being an intern pharmacist at Pyramid Pharmacy Bel Air R/S was definitely one of the educational thing i did during my last semester break. What I learnt in school from our qualified teachers definitely came in hand during my practice. To begin with, I had the opportunity to do patient counseling on a daily basis which is one of the building bricks of a great pharmacist. On top of that, all the dispensing that i conducted, be it for over the counter drugs or on prescription, really helped me in developing my skills in proper handling of drugs, time management, effective teamwork and better productivity. By this, I was able to learn about numerous medicines, their dosage, their side effects and their contraindications with other drugs or foods. This actually tallied with what we are thought at school especially in the module of pharmacology. I was lucky enough to be able to learn how to do injections as well as how to clean, dress a wound and how to change the dressing of a wound from the medical practitioners working at the pharmacy. To add, i learnt how to manage the inventory including how to deal with expired drugs. Indeed this was such a great experience and it will definitely play a role in shaping me into a better pharmacist in the future.

Oodally Haajra Bibi Umaira
3rd Year B Pharm student
JSSAHER Mauritius

JSSAHERM Meritorious Scholarship

The JSSAHERM Meritorious scholarship is awarded annually to the topper of the cohort, who has secured a score of 90% or above at the end of the academic year for the B Pharm programme of the academy.

This grant was awarded to the two highest achievers of the 1st and 2nd Cohorts by Prof (Dr) Praveen Mohadeb, CEO and Vice-Chancellor of JSSAHERM, for their exceptional performances in their respective classes.

Ms. Lutfiya Molabaccus from Cohort 1 procured the highest marks in the second year of her studies while **Ms. Salvi Wahidna** from Cohort 2 was the one who obtained the maximum score in her first year of study.

Ms. Salvi Wahidna Receiving JSSAHERM Meritorious Scholarship

Ms. Lutfiya Molabaccus Receiving JSSAHERM Meritorious Scholarship

Memorandum of Understanding/Agreements

The JSSAHER Mauritius also signed MoA with the following hospitals;

1. Aegle Medical & Surgical Ltd, Mauritius
2. Aegle Onco Care Centre Ltd, Mauritius
3. Sanjeevani Multispecialty Hospital, India
4. Wadhwani Hospital Ltd, India
5. Raj Super Specialty Hospital, India
6. Shree Giriraj Hospital multispecialty hospital, India

This MoA focuses on Community Pharmacy Practice and management such as;

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- pharmaceutical and patient care practices and
- any other specific best practices followed by the hospital/company


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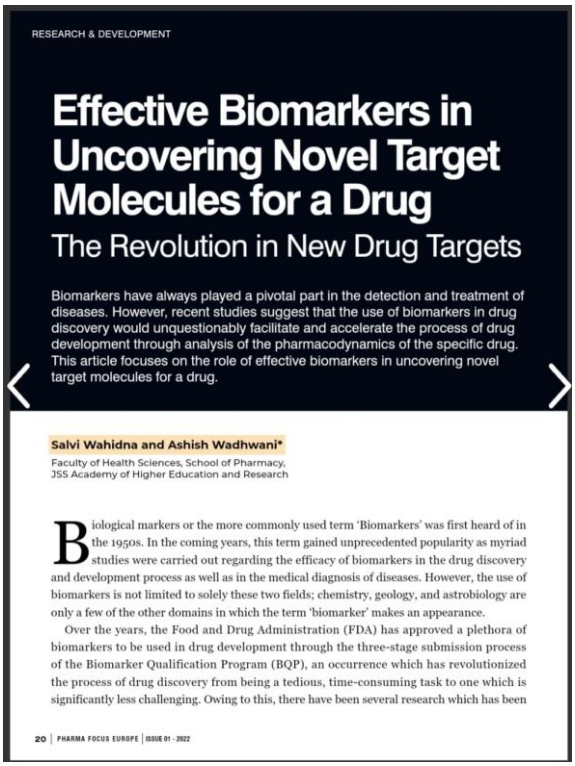
CIDP NATURALLY INNOVATIVE
orbit healthcare

JSSAHERM Faculty Publications (September – December 2022)

1. Solomon Benny, Khaleelu Rahman T.V, Gowtham N, Narenthiran C.K, Sayoojya Rajeev Nair, Shefali Deo, Aishwarya Gowda MB, Dr. Khayati Moudgil, Severity Assessment And Association Of Depression In COPD Patients With The Help Of HAM-D Scale And Spirometry In Nilgiris, Journal of Positive School Psychology, Vol.6 No.7 (2022)

2. Salvi Wahidna, Ashish Wadhwani. Effective Biomarkers in Uncovering Novel Target Molecules for a Drug: The Revolution in New Drug Targets, Pharma Focus Europe Magazine (One of the leading Pharma Magazine) Page no. 20 - 26; Dec 2022



RESEARCH & DEVELOPMENT

Effective Biomarkers in Uncovering Novel Target Molecules for a Drug

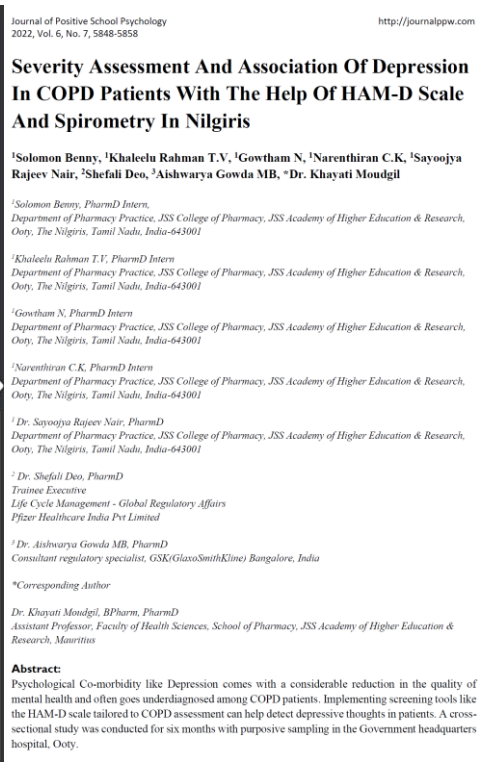
The Revolution in New Drug Targets

Biomarkers have always played a pivotal part in the detection and treatment of diseases. However, recent studies suggest that the use of biomarkers in drug discovery would unquestionably facilitate and accelerate the process of drug development through analysis of the pharmacodynamics of the specific drug. This article focuses on the role of effective biomarkers in uncovering novel target molecules for a drug.

Salvi Wahidna and Ashish Wadhwani*
Faculty of Health Sciences, School of Pharmacy,
JSS Academy of Higher Education and Research

Biological markers or the more commonly used term 'Biomarkers' was first heard of in the 1950s. In the coming years, this term gained unprecedented popularity as myriad studies were carried out regarding the efficacy of biomarkers in the drug discovery and development process as well as in the medical diagnosis of diseases. However, the use of biomarkers is not limited to solely these two fields; chemistry, geology, and astrobiology are only a few of the other domains in which the term 'biomarker' makes an appearance.

Over the years, the Food and Drug Administration (FDA) has approved a plethora of biomarkers to be used in drug development through the three-stage submission process of the Biomarker Qualification Program (BQP), an occurrence which has revolutionized the process of drug discovery from being a tedious, time-consuming task to one which is significantly less challenging. Owing to this, there have been several research which has been



Journal of Positive School Psychology
2022, Vol. 6, No. 7, 5848-5858
http://journalppw.com

Severity Assessment And Association Of Depression In COPD Patients With The Help Of HAM-D Scale And Spirometry In Nilgiris

[1]Solomon Benny, [1]Khaleelu Rahman T.V, [1]Gowtham N, [1]Narenthiran C.K, [1]Sayoojya Rajeev Nair, [2]Shefali Deo, [3]Aishwarya Gowda MB, *Dr. Khayati Moudgil

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**Corresponding Author*

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Abstract:
Psychological Co-morbidity like Depression comes with a considerable reduction in the quality of mental health and often goes underdiagnosed among COPD patients. Implementing screening tools like the HAM-D scale tailored to COPD assessment can help detect depressive thoughts in patients. A cross-sectional study was conducted for six months with purposive sampling in the Government headquarters hospital, Ooty.

Education Leadership Award 2022 – Africa Leadership Awards

The African Leadership Award 2022 was announced on 13th Dec 2022 at Le Méridien Ile Maurice, Mauritius. The CEO and Vice Chancellor Prof (Dr) Praveen Mohadeb was nominated and received the "Education Leadership Award" 2022 by Africa Leadership Awards.

Mr. Naveen KP, Registrar, and Prof (Dr) Ashish Wadhwani, Head, Faculty of Health Sciences received the award on behalf of the CEO.

On this occasion Prof (Dr) Praveen Mohadeb congratulated and dedicated this award to all the staff and students and mentioned that the award is the hard work of the entire team of JSS Academy, Mauritius.

He sincerely thanked all the staff, students, and stakeholders for their support.

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- M Pharm (Pharmacology) (F/T & P/T)
- M Pharm (Regulatory Affairs) (F/T & P/T)

Wishing You all a Merry X-Mas and a Happy and Prosperous New Year 2023!!!

For Clarifications/Feedback, Write

To:

The Chief Editor

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