JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS

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

JSS Health & Education Newsletter

Issue XI [Volume 4(2)]

May – August 2024

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About JSS Academy of Higher Education and Research, Mauritius

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

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

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

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

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

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

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

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Inside this Issue

Dr Reesaul Harrish, Chairperson, Medical Council of Mauritius.

It is an immense honor and pleasure for me to be able to bring out the XI Issue "JSS Health & Education Newsletter." I extend my compliments to the entire team that has contributed to the publishing of this newsletter and, who have been educating us with topics that aren't brought up to the surface often in Mauritius.

I highly appreciate the philosophy and approach to education and training of JSSAHERM. As a post-secondary education institution with degree awarding powers registered with the higher Education Commission (HEC), it is different from other institutions operating in the private sector. It has dared to venture in areas where other private institutions normally do not- Science and more specifically Health and Life Sciences. It compliments its education and training to the students with various health activities such as Free Health Camps, Blood Donations, CPD's, Webinars and various conferences.

With the values and the skills that the entire JSSAHER team has cultivated and inculcated in its Pharmacy students, I am sure that Pharmacy sector will be enhanced by their contribution and knowledge by having young minds that bring improvement.

With the increasing number of programmes that JSSAHER is gradually implementing within the Health Sciences, Life Sciences and Management Studies fields, we are assured that in the years to come, Mauritius is going to flourish with people of higher competence. I understand that soon JSSAHERM will start MBBS program. I wish the institution all the best in this endeavour also.

The "JSS Health & Education Newsletter.", has since its very first edition been very fascinating and informative on various topics that are often not spoken about often. With the different articles that are included therein and the amount of knowledge that has been conveyed, it enriches the persons to whom it reaches.

I wish all readers a pleasant reading.

Dr Reesaul Harrish, Chairperson
Medical Council of Mauritius

Education and Environmental Empowerment

Abstract

Children entering kindergarten now will grow up in a world that is fundamentally different from the one we know today. Climate change and resource depletion will exacerbate, while economic, technological, and social changes will bring new demands but also new opportunities for young people in an increasingly interdependent world.

Environmental education programs, which include school and outreach programs, community learning, and curriculum development, seek to educate and engage young people, partners, and local communities to address the environmental concerns they face.

Education for Sustainable Development (ESD) promotes a holistic and practical approach to education by tying together ecological, social, and economic facets of daily life.

ESD increases students' awareness of environmental issues and their capacity to promote sustainable development by cultivating holistic, critical, and independent thinking, the capacity to formulate and solve problems, and the capacity to participate in democratic systems and take responsibility for the planet's well-being. It increases students' awareness of ecological and environmental challenges and pushes them to incorporate sustainability principles into their daily activities and decisions. Empowerment is frequently viewed as a primary objective of outdoor education and environmental education. To foster student empowerment, it is frequently recommended that leaders of outdoor environmental education programs empower students through an emancipatory method that involves them in decision-making processes regarding and during the programs. Teaching pedagogies can be incorporated such as mind-mapping, online teaching software's etc.

Keywords: education, environment, empowerment, learning, decision

Introduction

Environmental education is a process that teaches individuals about environmental issues, how to solve problems, and how to act to better the environment. Individuals have a better grasp of environmental challenges and the ability to make educated and responsible actions as a result. Environmental education consists of the following components such as Environmental awareness and sensitivity, Environmental awareness and comprehension, environmentally conscious attitudes and motivation to enhance or maintain environmental quality, Capacity to detect and assist in resolving environmental issues, Participation in actions aimed at resolving environmental issues. Environmental education does not take a position or advocate for a particular course of action. Rather than that, environmental education teaches individuals how to weigh multiple perspectives on an issue through critical thinking and so improves their own problem-solving abilities- problem-solving and decision-making -creative abilities (Project Learning Tree. 2022).

Environmental education provides critical opportunity for students to engage in real-world challenges that extend beyond the confines of the classroom. They may connect their classroom lessons to the complex environmental challenges impacting our world, and they can develop the skills necessary to be creative problem solvers and effective advocates. It is critical that we harness this excitement and ensure that no opportunity to build knowledge, awareness, and care for the environment is missed through school education. Environmental education should also

be enjoyable for the student on a curricular and cross-curricular level. Environmental education's objectives are to raise public awareness of environmental challenges, to investigate potential solutions, and to establish the groundwork for an individual's fully informed and active engagement in environmental protection and the sensible and reasonable use of natural resources (Chiang, Y. T., Y. T. Fang, U. Kaplan, and E. Ng. 2019).
The resolutions provide the following concepts as a foundation for environmental education:

- The environment as a shared human legacy.
- The shared responsibility for preserving, conserving, and improving the quality of the environment in order to contribute to human health protection and ecological balance;
- The need of resource management that is sensible and rational;
- The ways in which each individual can contribute to environmental conservation by his or her own conduct and actions;
- Environmental education's long-term goals are to improve environmental management and to give satisfactory solutions to environmental problems.
- Provide chances for students to develop the necessary information, values, attitudes, dedication, and abilities for environmental protection and improvement.
- Inspire students to investigate and interpret the environment from a number of perspectives-physical, geographical, biological, sociological, economic, political, technical, historical, aesthetic, and ethical.
- Awaken pupils' awareness and curiosity about the environment and motivate them to take an active role in resolving environmental issues.
- Environmental education is inextricably tied to other cross-disciplinary themes.

Environmental education cannot be conducted effectively unless the following objectives concerning knowledge, skill, and attitude are met:

Awareness:
Individuals should acquire information and awareness of the environment in order to make educated decisions about it (Guthrie, R., 2013).

- The natural processes that occur inside an environment.
- The environmental impact of human activity.
- The comparison of various surroundings, both past and contemporary.
- Environmental concerns, for example, (i) the greenhouse impact. (ii) Acid rain; and (iii) Pollution of the air.
- Legislative regulations at the local, national, and international levels to protect and manage the environment;
- How environmental policies and decisions are made.

- The interdependence of human existence and subsistence on the environment.
- The potential for confrontation over environmental issues such as river water sharing.
- The extent to which the environment has been impacted by prior decisions and activities.
- The significance of planning and design, as well as a consideration of aesthetics.
- The critical nature of effective environmental protection and management.

Skills:
Six cross-curricular competencies important for environmental education have been identified.

They are as follows: -

1. Effective communication abilities.
2. Numerical abilities.
3. Study abilities.
4. Ability to solve problems.
5. Personal abilities.
6. Social and technological abilities.

Attitudes:
Promoting positive attitudes about the environment is critical if pupils/students are to appreciate it and recognize their responsibility in preserving it for future generations (Bowers, C.A.,1995).

Encouraging the development of attitudes toward the following personal characteristics will aid in the process.

1. An appreciation for environmental stewardship and concern.
2. Concern for all other forms of life on the planet.
3. Unconventional thinking on environmental issues.
4. Consider the viewpoints of others.
5. Tolerance for opposing viewpoints.
6. Environmental education can be looked on as a three-part system:
7. Environmental education (Knowledge).
8. Environmental education (Values, Attitudes & Positive actions).
9. Environmental education (A Resource).

Environmental education is a process that aims to develop environmentally literate citizens who are capable of competing in the global economy, who have the skills, knowledge, and inclinations to make sound environmental decisions, and who exercise their community members' rights and responsibilities. Environmental knowledge adds to a person's understanding and enjoyment of society, technology, and production, as well as the conservation of their own natural and cultural resources (McCrea, E. J., 2006).
Environmental education has the potential to address societal demands, community problems, and the workforce required to address cooperative minds. We need schoolchildren to communicate and grow their motivation from school regarding numerous environmental issues that are contemporary challenges and to prepare them for the future.

Environmental education must evolve into a vehicle for engaging young minds in the excitement of first-hand observation of nature and an understanding of the patterns and processes that occur in the natural and social worlds in order to care for the habitat and its surroundings, which becomes a significant component of environmental education in both the primary and upper primary stages of school education. Additionally, at the secondary and senior secondary levels, key concerns such as environmental preservation, management, and conservation will be discussed in greater detail.

Conclusion

Natural education mobilizes a community effort to identify and eliminate social structures and learned behaviours that jeopardize shared environmental resources. Environmental education fosters an appreciation for the ways in which financial and social structures perpetuate the oppressive cycle of poverty. This knowledge and awareness can enable community members to make appropriate decisions for sustainable community development as grassroots participants. Eliminating behaviours that jeopardize the community's sustainable use of resources and substituting more environmentally compatible practices is a critical component of the empowerment process. Individual and group awareness grows when environmental information is spread through social interaction and participation in community-based environmental education programs, resulting in a reactionary shift in the status quo through collective effort. Collective action to effect change demonstrates that a community is empowering itself through responsible engagement in the environmental resource management process's decision-making, planning, implementing, and monitoring phases.

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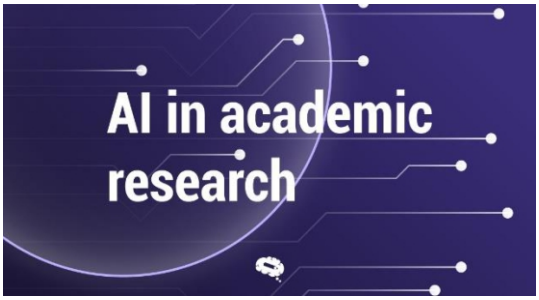
Editor in Chief
JSSAHERM

Harnessing the Power of Artificial Intelligence in Academic Research



Recent years have seen a notable increase in interest in the application of artificial intelligence (AI) in academic research. The research landscape is being revolutionised by this disruptive technology, which is driven by machine learning algorithms and data analytics. Artificial intelligence (AI) holds the potential to speed scientific discovery and improve the calibre of research outputs by empowering researchers to process enormous amounts of data, extract insightful information, and automate tedious jobs. It is critical that researchers embrace and adjust to this potent tool as AI develops, keeping in mind its limitations and moral ramifications. In academic research, academics can open new possibilities, improve scientific knowledge, and contribute to the transformative potential of AI by striking a balance between human inventiveness and AI-driven automation.

How does AI change academia?

AI has revolutionised research methodology, knowledge creation, and educational delivery, bringing about enormous changes to academia. AI technology integration in higher education has the ability to improve research results, expedite procedures, and stimulate creativity. Data analysis is one of the main ways AI is transforming higher education. Researchers can swiftly and effectively evaluate enormous volumes of data by using AI algorithms. This makes it possible for them to spot trends, correlations, and patterns that would be difficult to spot using more conventional techniques.
AI is also changing the research process in and of itself. It can help researchers with knowledge synthesis and literature reviews by automatically finding and collecting pertinent data from a large number of scientific publications.

In addition to saving time, this keeps researchers abreast of developments in their field. Education is a further academic domain in which AI is having a big impact. Personalised learning environments, adaptive learning platforms, and intelligent tutoring systems are all being created with AI-powered technology. By analysing students' learning patterns, these technologies can offer materials, guidance, and feedback that are specifically suited to them. Furthermore, AI has the ability to improve human academic performance. It can automate monotonous work, giving researchers more time to concentrate on cognitively demanding tasks. This involves composing manuscripts as well as collecting and analysing data automatically. Simplifying these procedures frees up researchers' time for hypothesis development, critical thinking, and investigating novel research directions.

Application of AI in academic research

Artificial intelligence has found numerous applications in academic research across various disciplines. Here are some examples of how AI is being used in academic research:

1. **Data analysis and pattern recognition:** AI algorithms can analyze large datasets and identify patterns, correlations, and trends that may not be easily recognizable by humans alone. This is particularly useful in fields such as genomics, **climate** science, and social sciences.
2. **Natural language processing (NLP):** NLP techniques enable computers to understand and generate human language. Researchers use NLP to analyze large volumes of textual data, extract information, summarize documents, and detect sentiment. It has applications in fields like literature, linguistics, and social sciences.
3. **Computer vision:** AI-based computer vision systems can process and interpret **visual** data, such as images and **videos**. Researchers use computer vision to analyze **medical** images, satellite imagery, and surveillance footage, among others. It has applications in fields like biology, astronomy, and environmental sciences.
4. **Drug discovery and development:** AI is being used to accelerate the process of drug discovery by predicting the properties and interactions of potential drug compounds. Machine learning models can analyze vast amounts of **chemical** and biological data to identify potential drug targets and design novel molecules.
5. **Robotics and automation:** AI-powered robots and automated systems are increasingly being used in academic research to perform tasks such as lab experiments, data collection, and sample processing. These robots can work 24/7, reducing human error and increasing efficiency in research workflows.
6. **Recommendation systems:** AI algorithms can provide personalized recommendations based on user preferences and behaviors. In academia, these systems can suggest relevant research papers, conferences, or collaborations based on a researcher's interests and previous work.
7. **Simulation and modeling:** AI techniques, such as machine learning and neural networks, can be used to create **complex** models and simulations. Researchers can use these models to study and predict phenomena in fields like physics, economics, and social sciences.
8. **Knowledge discovery and synthesis:** AI can assist researchers in discovering and synthesizing information from vast amounts of existing research papers, patents, and other academic sources. This can help identify research gaps, find relevant literature, and generate new insights.

The Future of AI in Academic Research

The future of AI in academic research holds immense potential for transformative advancements. Here are some trends, opportunities, and potential impacts to consider:

- **Interdisciplinary collaboration:** AI brings together researchers from different disciplines, fostering collaboration and enabling breakthrough insights.
- **Data-driven discoveries:** AI algorithms extract valuable insights from large datasets, revolutionizing research across disciplines.
- **Personalized and adaptive learning:** AI technologies provide tailored educational experiences, assessing student performance and offering targeted feedback.
- **Enhanced scientific discovery:** AI assists researchers in hypothesis generation, experiment design, and data analysis, accelerating the research process.

- **Ethical considerations and responsible AI:** Researchers address bias, transparency, privacy, and accountability to ensure ethical and responsible AI use.
- **AI-enabled automation:** AI streamlines research workflows, automating tasks like data collection and analysis, improving efficiency.
- **AI for global challenges:** AI contributes to solving climate change, healthcare, and poverty by analyzing data and optimizing resource allocation.
- **Augmented creativity:** AI serves as a creative partner, generating ideas, synthesizing information, and pushing boundaries in fields like art and design.
- **Enhanced peer review and scientific communication:** AI automates aspects of peer review, aids in language translation, and recommends relevant research papers.
- **Democratization of research:** AI platforms provide access to computational power, datasets, and collaboration opportunities globally, democratizing research.

AI Tools for Academic Research

- **Pictory:** Pictory is an AI-powered **video** generator that simplifies the process of creating and editing high-quality videos.
- **Jasper:** Jasper stands out as the top AI writing assistant, setting the standard in the market with its exceptional features and remarkable quality.
- **Murf:** Murf, the text-to-speech generator, is widely recognized as one of the most popular and remarkable AI voice generators available in the market.
- **HitPaw Photo Enhancer:** AI-based tool for enhancing image quality and details.
- **ChatGPT:** AI model for natural language processing and generating human-like text responses.
- **Lovo.ai:** Lovo.ai has garnered accolades as an award-winning voice generator and text-to-speech solution.
- **Reply.io:** Reply offers a comprehensive sales engagement platform that enables the scalable creation of new opportunities while ensuring a personalized touch in every interaction.

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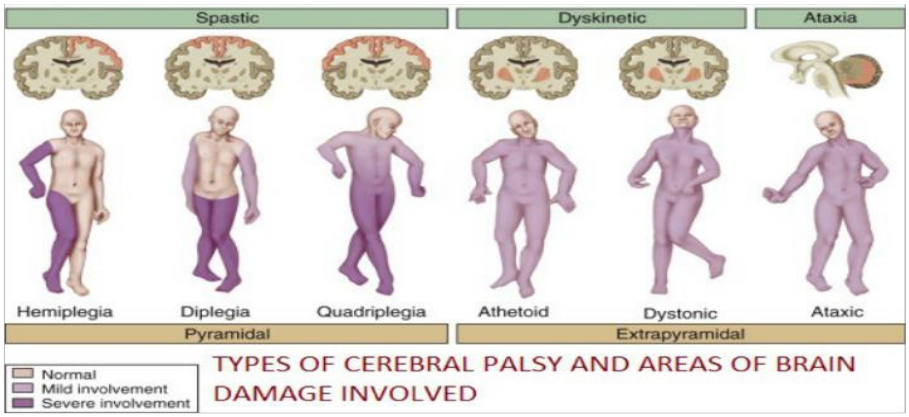
CEREBRAL PALSY IN CHILDREN



Cerebral Palsy is a group of neurological disorders that affects a person's ability to move and maintain balance and posture. It appears mostly infancy or early childhood that permanently affect body movement and muscle coordination. Cerebral means having to do with the brain and palsy means weakness in or problems with using the muscles.

Cerebral palsy is the leading cause of childhood disabilities in the world, but it does not always cause profound disabilities. The symptoms of cerebral palsy might vary for different people. A person with extreme cerebral palsy may need to use special equipment to be able to walk or won't be able to walk at all. On the other hand, a person with mild cerebral palsy might walk a little awkwardly but won't need any help from others. It does not get worse over time but the symptoms can change over a person's lifetime. People with cerebral palsy may have related conditions like intellectual disability, seizures, problems with visions, hearing or speech, changes in spine and joint problems.

Cerebral palsy is classified according to the main type of movement disorder involved, depending on the areas of the brain that are affected. There are four main types of cerebral palsy;

1. ***Spastic cerebral palsy***

It affects about 80% of people with cerebral palsy. People with spastic cerebral palsy have increased muscle tone. This means their muscles are stiff where their movements can appear awkward. Spastic cerebral palsy includes spastic diparesis, spastic hemiparesis and spastic quadriparesis.

2. ***Dyskinetic cerebral palsy***

People with dyskinetic cerebral palsy have problems in controlling the movement of their hands, arms, feet and legs which makes it difficult for them to sit and walk. Dyskinetic cerebral palsy includes athetoid, choreoathetoid and dystonic cerebral palsies. A person with dyskinetic cerebral palsy has muscle tone that can change not only from day to day but also during a single day.

3. ***Ataxic cerebral palsy***

People with this type of cerebral palsy have problems with balance and coordination. They might be unsteady when walking and have a hard time with quick movements or controlling their hands when trying to reach for something.

4. ***Mixed cerebral palsy***

Some people have symptoms of more than one type of cerebral palsy

Symptoms:

The symptoms of cerebral palsy are not usually obvious just after a baby is born. They normally become noticeable from an early age. General symptoms of cerebral palsy include trouble with movement and coordination, speech and eating, development and other issues.

- Movement and coordination symptoms may include:
- Stiff muscles and exaggerated reflexes
- Variations in muscle tone
- Lack of balance and muscle coordination
- Jerky movements that can't be controlled
- Slow, writhing movement
- Symptoms related to speech and eating are as follows:
- Delays in speech development
- Trouble speaking
- Trouble with sucking, chewing and eating
- Drooling or trouble with swallowing
- Some children with cerebral palsy have these symptoms related to development:
- Delay in reaching motor skills milestones
- Learning disabilities
- Intellectual disabilities
- Delayed growth
- Cerebral palsy can contribute to other neurological symptoms such as:
- Seizures
- Trouble hearing
- Trouble in vision
- Bladder and bowel issues

Cerebral palsy is caused by irregular brain development or damage to the developing brain. It usually occurs before a child is born, at birth or in early infancy. The cause is not known but there are many factors that can lead to changes in brain development. For examples;

- Gene changes: that result in genetic conditions or differences in the brain
- Maternal infections: that affect an unborn baby
- Stroke: which interrupts blood supply to the developing brain
- Bleeding into the brain: in the womb or as a newborn
- Infant infections: that cause swelling in or around the brain
- Traumatic head injury
- Lack of oxygen

Cerebral palsy can't be cured but the capabilities of the child can be improved through treatments. The earlier treatment begins, the better chance the children have to overcome developmental disabilities. There is no standard therapy that works for every person with cerebral palsy. Referrals to specialist's aid in a more accurate diagnosis and help doctors develop a specific treatment plan. Once the diagnosis is made, a team of health care professionals will work with the child and parents to identify specific impairments and needs and then develop an appropriate plan to tackle the core disabilities that affect the child's quality of life.

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Ms Jemima Sunnassee, II year BPharm

Chagas: The Silent disease

Chagas disease, also known as the silent disease is a condition caused by the parasite Trypanosoma cruzi. About 55% of the kissing bugs are infected with parasite, Trypanosoma cruzi, that causes Chagas disease. These bugs come out to bite and feed on blood. They can live indoor and outdoor. Chagas disease is most common in rural areas of Mexico and Central and South America.

Chagas disease originated from regions of America. However, in the last decades the epidemiological pattern of the disease changed from a rural to a mostly urban disease, mainly due to population mobility, urbanization and immigration. Therefore, a large number of cases have been detected in Canada and the United States of America, and in many European and some African, Eastern Mediterranean and Western Pacific countries.

Mode of transmission

Trypanosoma cruzi can be transmitted through contact with faeces and urine of infected kissing bugs, Scratching and rubbing with bug faeces into eyes and mouth.

Some rare cases of infection are:

- Blood transfusion
- Mother to Baby (congenital)
- Contaminated food or drinks
- Organ transplant.

Signs and symptoms

Chagas disease consists of 2 phases, acute and chronic phrase.

The acute phase lasts up to 2 months after infection and consists of:

1. Fever
2. Headache
3. Muscle pain
4. Romana's sign (swelling of eyelid)
5. Abdominal pain
6. Difficulty breathing

During the chronic phase, most people have no symptoms but one third of them develop serious problems such as: Heart failure, arrhythmia and sudden death.

Treatment

- Antiparasitic treatment which kills the trypanosoma cruzi. Benznidazole and Nifurtimox are FDA approved for use in children 2 - 12 years of age and treatment of children from birth to age younger than 18 years respectively.
- Symptomatic treatment which helps to manage signs and symptoms of infection.

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Written By:
Mr Yuvraj Dany, III year B Pharm

Trimming the waistline: Ozempic and Wegovy injections and the journey to fat loss

Ozempic injections have emerged as a significant advancement in the treatment of Type 2 diabetes offering a potent therapeutic option for patients struggling to manage their glucose levels. However, its use has taken a deeper turn in the reshaping of the world as its off-label utilization has aid in fat loss. Multiple researches on this medication have been done and thus generated an increasing popularity. Ozempic or Wegovy injections have been labelled as a "miracle drug", simply due to the fact they play a role in

- Controlling pre-diabetes
- Regulating insulin resistance in Polycystic Ovary syndrome patients
- Lowering cardiovascular risk: lowering blood pressure, increasing heart rate, increasing myocardial contractility and has cardio protective effects
- Weight management
- Aiding in Lipidaemia
- Lowering the risk of developing Alzheimer's disease by 48%
- Produces more glycogen in muscles
- Increase insulin biosynthesis
- Helping the insulin produce more beta cells to survive longer and proliferate more
- Inducing lipolysis

Understanding how Semaglutide works

This synthetic hormone operates by inducing the pancreas to produce more insulin, thereby decreasing the amount of sugar the liver makes and slowing the food passes through the body. It is viewed as an "appetite modulator" as this revolutionary medication can alter the gastric emptying hence tricking the brain into believing the subject is sated. Hence, it is known to also be an "appetite suppressant". Ozempic is taken once a week, through subcutaneous injections in the patient.

This medicine is exactly used as prescribed by a doctor and according to the following instructions it is normally given through lower doses and then is gradually increased with time. Typically, a period of every 4 weeks to 30 days.

How did Ozempic injections or Wegovy (Semaglutide) gain their popularity?

The consumption of this medication has resulted in the phenomenal success for patients aiming to lose weight. Hence has brought enlightment on the real status of obesity and the reality of the true struggle of losing pounds. Where individuals suffering from obesity, have been consecutively told to perform more physical activities, restrict their diet and be more alert of all their choices of food. While some may find these instructions easy, it is clearly a challenge for more than one. Ozempic injections opened a door of opportunity to boost the shedding of fat for those targeted patients. Therefore, simplifying further their quality of life. Semaglutide helped to understand the true connections between genetics, hormones and brain chemicals. Ozempic or Wegovy (FDA approved weight loss medication) have proved along with studies on almost 2000 overweight or obese adults without being diagnosed with diabetes, also found their visceral fat being reduced from baseline with Semaglutide. Its off-label use, became notorious to the point it was used to induce the loss of weight among popular figures including Ophrah Winfrey who faced issues with her physical appearance and others such as Elon Musk, Sharon Osbourne and Kelly Clarkson.

The side effects of Semaglutide injections

Due to the explosion of drugs such as Ozempic or Wegovy, reports have indicated multiple adverse effects. With a drug that holds so many promises, it normally comes with a price, that is the side effects which can be

- Nausea and vomiting
- Diarrhea
- Gastric pain
- Constipation

Additionally, with semaglutide injections it acts as an atomic bomb in the gut and the endocrine system, as well as depleting the skin of its essential fatty acids thus leading to the loss of its natural elasticity. This is known as having an “Ozempic face”.There are some uncommon side effects that a patient may experience when they get administered with the drug which includes

- Hypoglycemia: especially when used with other diabetes medications
- Pancreatitis: In rare cases, Ozempic may increase the risk of pancreas inflammation
- Kidney failure
- Serious allergic reactions
- Gallbladder problems
- Gastroparesis: delayed gastric emptying and blockage of the stomach

The list of potential risks does not end here. As it represents a danger to women who have a stable weight, can be prone to cardiovascular diseases or sudden cardiac death when they take Semaglutide. Weight rebounds are also seen with patients where they stop the medication, they will gain back the weight along with an additional portion of the fat they lost. There is a potential issue of increasing thyroid cancer long term with these medications as Wegovy is contraindicated with a personal or family history of MTC or in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).

Conclusion

Ozempic or Wegovy injections can represent a threat to any patients which are not properly guided through their treatment. It can be used as a tool to aid several medical conditions and can still be used as weigh loss option. It is far from easy to reach a targeted weight or be a part of the beauty standards imposed by society. But one must not endanger oneself for the sake of imaginary criteria.

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- Stars who've spoken about Ozempic and what they've said
- https://people.com/celebrities-ozempic-wegovy-what-theyve-said-7104926
- Image wegovy injections
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1. Image Ozempic injections

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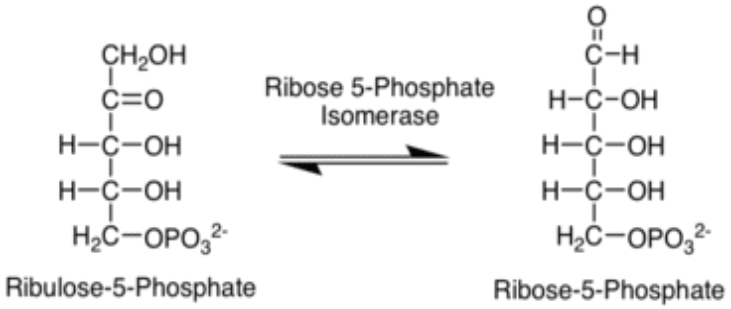
2. Important safety information for Wegovy (semaglutide) injection 2.4mg

Written By: Ms. Rania Saarah Ahmed, III Year, B Pharm

Ribose-5-Phosphate Isomerase Deficiency

Introduction

- RPID is a rare human genetic disorder caused by inborn errors of mutations in the RPI allele gene which codes to Ribose -5 phosphate Isomerase.
- Ribose-5-phosphate Isomerase (RPI) is an enzyme which is involved in the carbohydrate degradation by pentose phosphate pathway.
- RPI is a protein which exists in two forms namely RPI type A and RPI type B. These are generally found in both prokaryotic and eukaryotic cells.
- The enzyme helps in converting the Ribose-5-phosphate to Ribulose-5-phosphate.



Discovery and Mechanism

The first case was in discovered in 1999 where a group scientist from the neurology department at the university of Amsterdam. Dr Van der Knaap and his team studied the case of a 14 year old boy. He had psychomotor retardation from early in life and developed epilepsy at age 4 years. From age 7 years, a slow neurological regression occurred with prominent cerebellar ataxia, some spasticity, optic atrophy, and a mild sensorimotor neuropathy.

MRI of the brain at ages 11 years and 14 years showed extensive abnormalities of the cerebral white matter. Proton MRS revealed highly elevated abnormal peaks, which could be identified as representing the pentitols ribitol and D-arabitol.

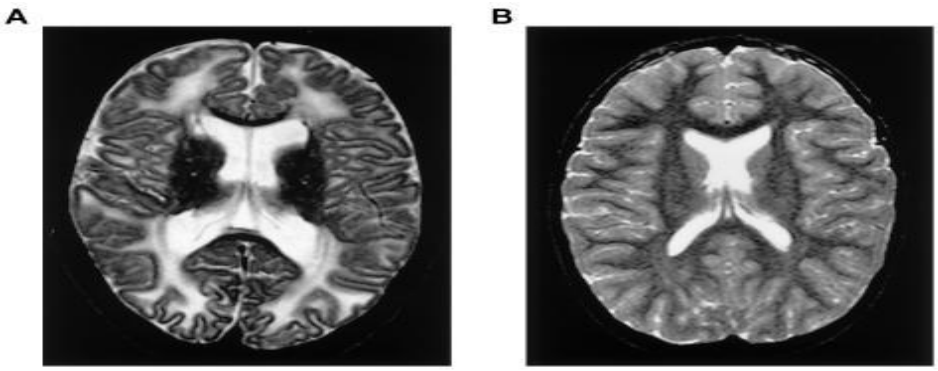
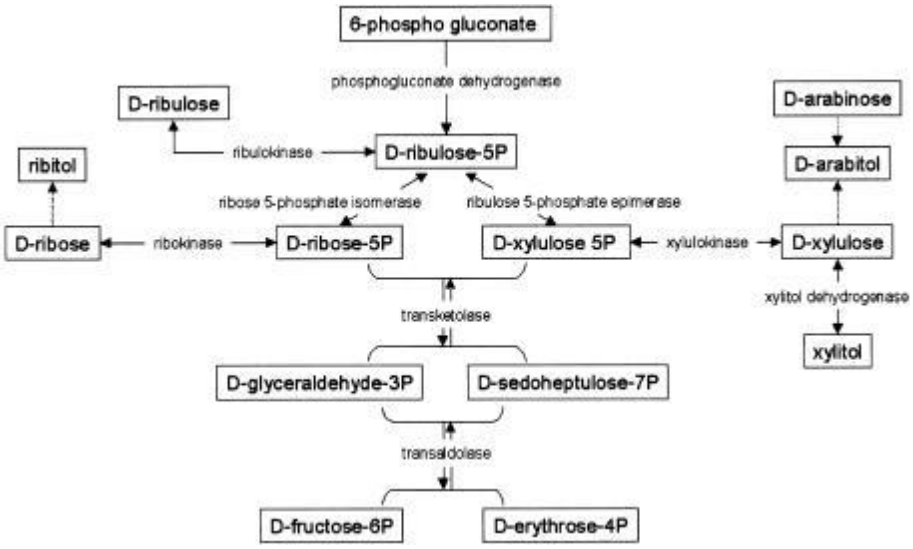


Image A shows extensive abnormalities of the cerebral hemispheric white matter compared to image B which is of a normal person. Over the years, ribitol and D-arabitol were consistently elevated in all body fluids. There was a high brain CSF plasma ratio for both D-arabitol and ribitol.



It was suggested that there were consistent abnormalities in the pentitol levels in the levels of pentoses found in CSF and urine the present patient causing a defect in their metabolism, as pentitols are derived from their corresponding pentoses and pentose phosphates, the latter being intermediates of the pentose-phosphate pathway(PPP) above.

They decided to study two additional enzymes of the PPP in cultured cell lines, ribose-5-phosphate isomerase (RPI) and ribulose 5-phosphate epimerase (RPE). It was observed that there was a decreased formation of RPI in the patient as compared with control individuals, again suggesting a defect in RPI.

From these findings they decided to sequence the RPI gene. The sequence analysis of full-length RPI cDNA demonstrated a single base-pair deletion in the patient, causing a frameshift change in one of the allele.

Ultimately for this case, RPI deficiency is a novel inborn error in the PPP. The biochemical abnormalities in the patient is the deficient conversion of ribulose 5-phosphate into ribose-5-phosphate leading to accumulation of pentoses and pentose phosphates, which in turn leads to the accumulation of ribitol and D-arabitol as metabolic end products.

Due to the extremely high levels of D-arabitol and ribitol in brain tissue causing polyol toxicity which may be related to leukoencephalopathy and neuropathy which are both clinical characteristics of RPID. This hypothesis can be supported by the findings in Diabetes mellitus and Galactosemia. Peripheral neuropathy is a common complication of diabetes mellitus, whereas cerebral white-matter abnormalities occur in galactosemia.

Other cases were discovered in following years where the patients had severe psychomotor regression, leukoencephalopathy and polyol toxicity.

It is considered to the rarest disease as there are only 4 diagnosed cases.

Symptoms

1. Optic atrophy that is the death of nerve cells present in the eyes causing vision loss.
2. Cerebellar ataxia which is uncoordinated muscular moment due to cerebellum damage.
3. Seizures known as the disorder of the nerve cells present in the brain causing uncoordinated electrical disturbances.
4. Spasticity is defined as the alteration in the muscular performance leading to muscle stiffness and tightness.
5. Leukoencephalopathy describes all the diseases caused to the deterioration of the CNS white matter.
6. Nystagmus known as involuntary movement of the eyes.
7. Developmental delay that is the disorder found in the developmental stages of the children characterized with the symptoms of delay in speech, cognition and daily life activities.
8. Psychomotor retardation generally defined as being lethargic in physical activities, emotional activities and speech.

Diagnosis

1. Proton magnetic resonance spectroscopy of the brain.
2. Polyols analysis in the urine.
3. Based on the symptoms listed above.

Treatment

There are no current specific treatments for RPI Deficiency.

References:

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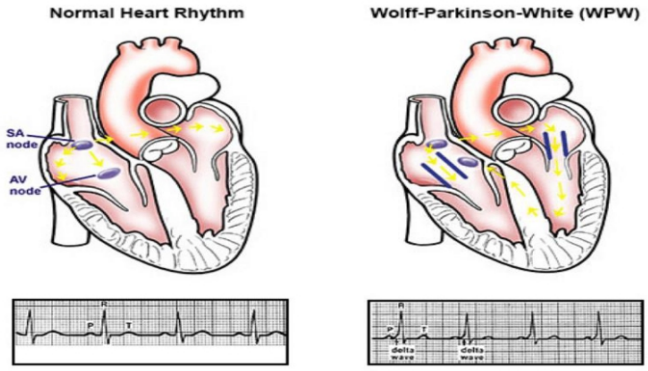
Written by: Mr. Qays Baxou, II Year B Pharm

The camouflage expert: Wolff-Parkinson-White Syndrome



Wolff-Parkinson-White syndrome is a congenital heart defect. It occurs when people are born with an extra electrical pathway in the heart which leads to lapses of rapid heart rate. Since there is an extra pathway, the signal transductions travel down it which explain the increase in heartbeat. The consequence of this is, the time lapse between two heartbeats is too short to fill blood in chambers which decreases the blood supplied to the body. The syndrome occurs in 1-3 of every 1,000 people worldwide. The condition is present at birth but not detected until later.

Symptoms

Since the syndrome is characterized by a fast heart rate, the patients with WPW experience tachycardia. The experience may be only for a period of time and during this lapse the patient may experience:

- Chest pain/tightness
- Fainting
- Dizziness
- Fatigue
- Dyspnea
- Anxiety

The cause of WPW is till date undefinable but some doctors have identified mutations in gene mutations. The episodes that the patients experience may last from minutes to hours and the frequency they occur vary from people to people. Most people which have WPW carry on a normal life as they do not suspect any anomaly. A fast heart rate could be due to any of the daily activities whether it be stress or exercise.

Complications

Among many complications the main ones are:

- Low bloop pressure

- Heart Failure
- Ventricular fibrillation
- Atrial fibrillation
- Surgery complications

Treatment

The first approach to WPW is catheter ablation, it a method in which a small amount of heart tissue is destroyed by the use of energy which restores the heartbeat. Another approach is known as a cardioversion shock which restores the heart rhythm especially if the patient has SVT- supraventricular tachycardia. Chemical cardioversion, medication therapy is also a solution. Drugs such as procainamide or amiodarone help control or prevent the relapses.

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Content

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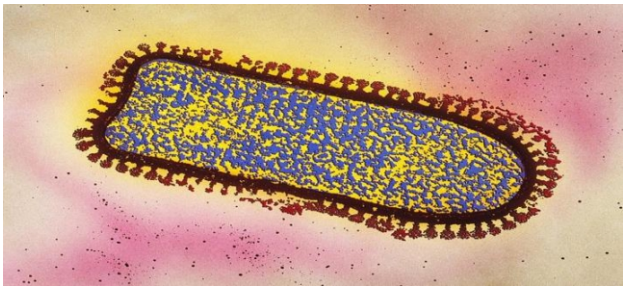
Image

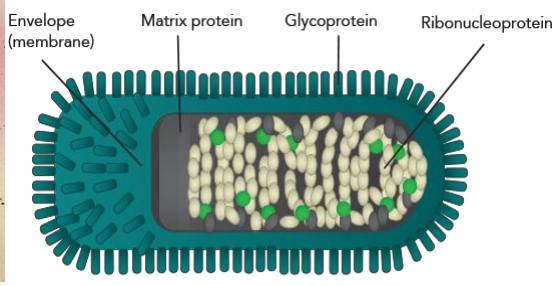
https://www.google.com/url?sa=i&url=https

Written By:
Ms. Saniya Issimdar, III Year B Pharm

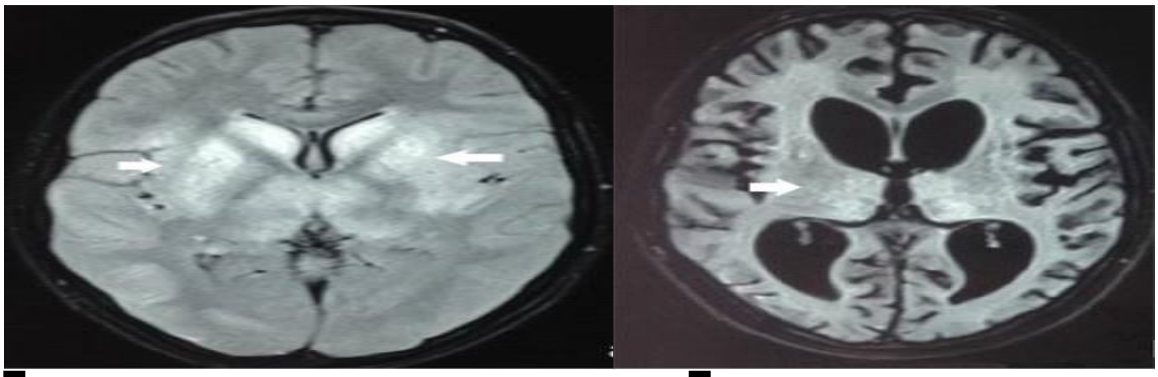
From Bite to Brain: Delving into the depths of Rabies

Rabies derived from the Latin word "**rabere**" meaning "**to rage**", is a zoonotic, viral and vaccine-preventable disease that affects the central nervous system of mammals, including humans. Its discovery cannot be distinguished to a specific date but however, historical records observed in ancient civilizations from Mesopotamia, Egypt, India and Greece strengthens the idea of the disease lurking around since 2000 BC.





Rabies primarily targets the Central Nervous System (CNS) causing brain inflammation (encephalitis) and damage to spinal cord. The disease infects neurons in various parts of the brain, namely, the brainstem, cerebellum, and hippocampus. This thereby leads to the characteristic neurological symptoms that define the disease.



MRI-Healthy patient

MRI-Rabies patient

There are two forms of rabies:

Furious rabies	Paralytic rabies
• Results in hyperactivity, excitable behaviour, hallucinations, lack of coordination, hydrophobia and aerophobia • Death occurs after a few days due to cardio-respiratory arrest	• Muscles gradually become paralysed, starting from the wound site. • A coma slowly develops and eventually death occurs. • Accounts for about 20% of the total number of human cases.

What causes Rabies?

Rabies is caused by the **virus RABV** (Rabies virus-associated RNA binding protein) which belongs to the genus **Lyssavirus** within the family Rhabdoviridae. It is a protein that plays a crucial role in the viral replication cycle and pathogenesis. It navigates around in the body through the nerves and can even evade host immune responses until it reaches the brain. RABV helps to replicate the rabies virus RNA genome and facilitates the synthesis of viral RNA within infected cells, vital to produce new virus particles. RAVB also interacts with host cell proteins and RNA molecules, altering their functions.

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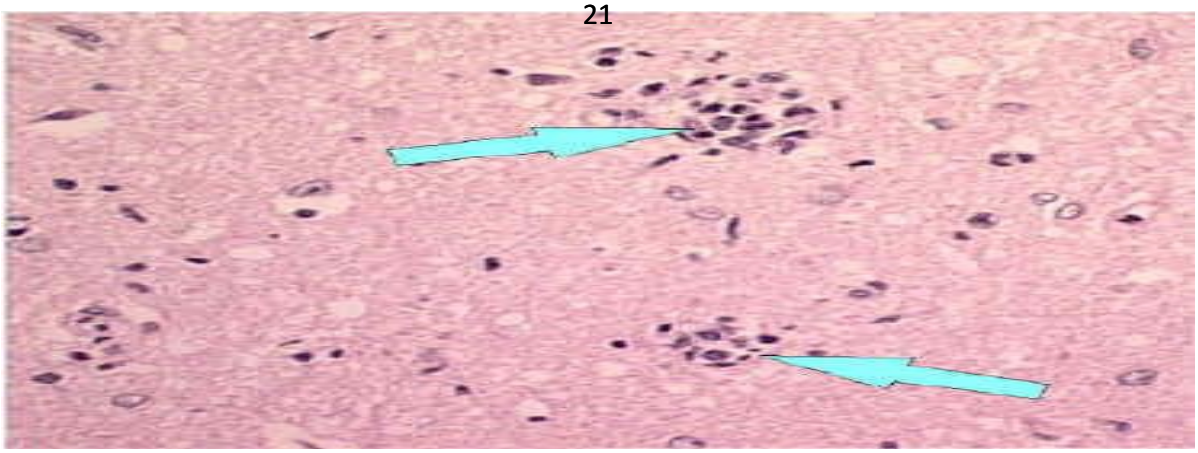


Transmission

Rabies virus (RABV) is transmitted through direct contact with saliva or brain/nervous system tissue from an infected animal. The infected animals can spread the virus by biting another animal or a person. In other cases, rabies can be spread when infected saliva gets into an open wound or the mucous membranes, such as the mouth or eyes. This may even happen if an infected animal licks an open cut on the skin. Less commonly, rabies can be transmitted through aerosolized saliva or neural tissue, such as during organ transplantation from an infected donor. The animals most likely to spread the rabies virus to people include:

1) Pets and farm animals

- Cats
- Cows
- Dogs
- Ferrets
- Goats
- Horses

2) Wild animals

- Bats
- Beavers
- Coyotes
- Foxes
- Monkeys
- Raccoons
- Skunks
- Woodchucks

Pathogenesis

1)Entry:

Rabies virus enters through animal bite.

2)Local Replication:

Virus replicates in muscle cells near entry site.

3)Nervous System Invasion:

Virus travels along peripheral nerves to CNS (brain and spinal cord).

4)Central Nervous System:

Virus spreads within CNS via neurons, causing encephalitis (brain inflammation).

5)Clinical Symptoms:

Symptoms appear as virus affects brain function, including fever, agitation, hydrophobia, and paralysis.

6)Outcome:

Disease progresses rapidly, leading to death from respiratory failure or cardiac arrest.

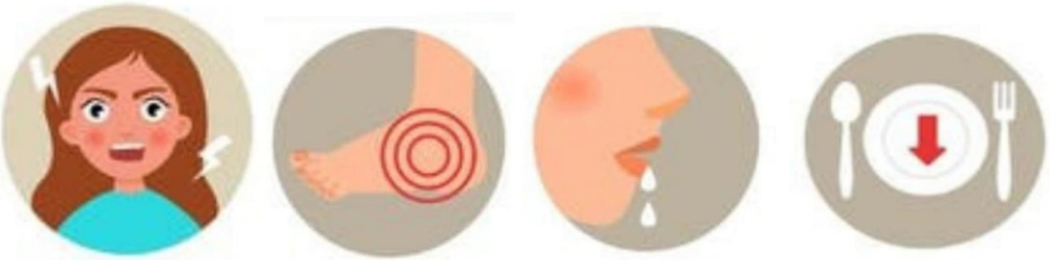
⇩

7)Transmission:

Virus spreads via saliva of infected animals, primarily through bites.

Symptoms

Stage 1	Stage 2	Stage 3
• Headache • Heat • Loss of appetite • Fatigue • Diarrhoea	• Aggression • Photosensitivity • Cramps • Fear	• Hydrophobia • Limb paralysis • Eye muscles Paralysis • Salivation Foam



Prevention

Although rabies can be fatal, it is a preventable disease. Prevention of rabies primarily revolves around vaccination, public education, and animal control measures

1)Vaccination:

-Pre-exposure and post-exposure vaccinations.

-Mandatory vaccination of pets; oral vaccination in wildlife.

2)Public Education:

Awareness about avoiding contact with stray animals and seeking immediate medical care after potential exposure.

3)Animal Control:

Managing stray animal populations and testing animals involved in human or animal bites.

Why is it so hard to cure Rabies?

There is no cure for rabies once it has moved to the brain due to the presence of the **blood-brain barrie**r. The blood-brain barrier is a layer between the brain and the blood vessels. Its job is to protect the brain by keeping toxins and other dangerous substances from getting into it from the blood. The rabies virus, however, can cross it. It does so by infecting the cells that make up the endothelium of the blood-brain barrier. But unfortunately, the penetration of drugs and antibodies into the CNS is also limited by the blood brain barrier due to its filtering function, as a result, this hinders effective treatment delivery to infected brain tissues.

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Written By: Ms. Aliyah Edoo, II Year, B Pharm

FDA Approved Drugs

S.No	Drug	Indication	Date of approval
1.	Tryvio (aprocitentan)	To treat hypertension	03/19/24
2.	Duvyzat (givinostat)	To treat dunchenne muscular dystrophy in individuals aged 6 years and older	03/21/24
3.	Winrevair (sotatercept-csrk)	To treat pulmonary arterial hypertension	03/26/24
4.	Vafseo (vadadustat)	To treat anemia due to chronic kidney disease	03/27/24
5.	Voydeya(danicopan)	To treat extravascular hemolysis with paroxysmal nocturnal hemoglubinuria	03/29/24
6.	Zeytera(ceftobiprole medocaril sodium)	To treat certain bloodstream infections, bacterial skin and associated tissue infections and community acquired bacterial pneumonia	04/03/24
7.	Lumisight (pegulicinanine)	To use as an optical imaging agent for the detection of cancerous tissue	04/17/24
8.	Anktiva (nogapendekin alfa inbakicept-pmln	To treat bladder cancer	04/22/24
9.	Myhibbin (mycophenolate mofetil) oral suspension	To treat organ transplant and rejection prophylaxis	05/01/24
10.	Imdelltra (tarlatamab-dlle) for injection	To treat small cell lung cancer	05/16/24
11.	Yesafili (aflibercept-jvbf) injection	Treatment for the macular degeneration, macular edema following retinal vein occlusion, diabetic macular edema, diabetic retinopathy	05/20/24
12.	Opuviz (aflibercept-yszy) injection	To treat for the macular edema following retinal vein occlusion,	05/20/24

		diabetic macular edema, diabetic retinopathy	
13.	Onyda XR (clonidine hydrochloride) extended release suspension	For the treatment of ADHD	05/24/24
14.	Bkemv (eculizumab-aeeb) injection	Treatment for poraxysmal nocturnal hemoglobunuria, hemolytic uremic syndrome	05/28/24
15.	mRESVIA (respiratory syncytial virus vaccine, mRNA) injection	Treatment for RSV (respiratory syncytial virus)	05/31/24
16.	Rytelo (imetelstat)	To treat low- to intermediate-1 risk myelodysplastic syndromes	06/06/24
17.	Iqirvo (elafibranor)	To treat primary biliary cholangitis in combination with ursodeoxycholic acid	06/10/24
18.	Sofdra (sofpironium)	To treat primary axillary hyperhidrosis	06/18/24
19.	Piasky (crovalimab-akkz)	To treat paroxysmal nocturnal hemoglobinuria	06/20/24
20.	Ohtuvayre (ensifentrine)	To treat chronic obstructive pulmonary disease	06/26/24
21.	Kisunla (donanemab-azbt)	To treat alzheimer's disease	07/02/24
22.	Rytelo (imetelstat) for Injection	Treatment for Myelodysplastic Syndrome	07/06/24
23.	Iqirvo (elafibranor) Tablets	Treatment for Primary Biliary Cholangitis	07/10/24
24.	Yimmugo (immune globulin intravenous, human-dira) Liquid for Intravenous Injection	Treatment for Primary Immunodeficiency Syndrome	07/13/24
25.	Capvaxaive(pneumococcal 21-valent conjugate vaccine) injection	Treatment for pneucoccoal disease prophylaxis	07/17/24
26.	Vigafyde (vigabatrin) Oral Solution	Treatment for Infantile Spasms	07/17/24

27.	Sofdra (sofpironium) topical gel	For the treatment of Hyperhidrosis	07/18/24
28.	PiaSky (crovalimab-akkz) injection	For the treatment of paroxysmal Nocturnal hemoglubinuria	07/20/24
29.	Tepylute (thiotepa) injection	Treatment for Breast Cancer, Ovarian Cancer	07/25/24
30.	Ohtuvayre (ensifentrine) Inhalation Suspension	For the treatment of COPD, Maintenance	07/26/24
31.	Pyzchiva (ustekinumab-ttwe) injection	Treatment for plaque psoriasis, psoriatic arthritis, Crohn's disease, ulcerative colitis	07/28/24
32.	Ahzantive (aflibercept-mrbb) injection	Treatment for macular degeneration, macular edema following retinal vein occlusion, diabetic macular edema, diabetic retinopathy	07/28/24

Drug Profile: Kisunla

Brand Name: Kisunla

Generic Name:

Donanemab-azbt

Dosage Form:

Intravenous infusion every four weeks. Kisunla is formulated as a 350mg/20ml clear to opalescent and colourless to slightly yellow or slightly brown solution, supplied in a single dose vial for once-monthly intravenous (IV) infusion.

Class:

Monoclonal Antibodies

Indication:

Used in the treatment for adults with Alzheimer's disease.

Clinical purpose:

Alzheimer's disease is the most prevalent form of dementia. Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out simple tasks. While the specific causes of Alzheimer's are not fully known, it is characterized by changes in the brain, including amyloid beta plaques and neurofibrillary, or tau tangles, that result in loss of neurons and their connections. These changes affect a person's ability to remember, think and speak. It may arise from the natural production of amyloid protein, which can accumulate and form amyloid plaques, leading to memory and cognitive difficulties characteristic of AD. Donanemab-azbt is a disease-modifying therapy (DMT) for adults with early symptomatic Alzheimer's disease (AD), encompassing those with mild cognitive impairment (MCI) and those in the mild dementia stage of AD, with confirmed amyloid pathology. However, this new drug cannot reverse memory loss or other symptoms: In other words, Kisunla is not a cure.

Pharmacology:

Donanemab-azbt is known as a monoclonal antibody, a protein specially designed to recognize a specific target in the body. It will target beta-amyloid, the toxic protein that accumulates in the brains of person suffering from Alzheimer's disease, hence forming plaques that are thought to disrupt normal brain signaling. Kisunla will help to clear these build-ups of toxic beta-amyloid. More precisely, Kisunla (donanemab-azbt) is a humanised immunoglobulin gamma 1 (IgG1) monoclonal antibody that targets the insoluble N-truncated pyroglutamate amyloid beta. The drug demonstrated a reduction in amyloid beta plaques in the brain, a characteristic pathophysiological feature of Alzheimer's disease.

Pharmacodynamics:

The effect of KISUNLA on amyloid beta plaque levels in the brain was evaluated using amyloid Positron Emission Tomography (PET) imaging (18F-florbetapir tracer). The PET signal was quantified using the Standard Uptake Value Ratio (SUVR) method to estimate brain levels of amyloid beta plaque in composites of brain areas expected to be widely affected by Alzheimer's disease pathology (precuneus, frontal, anterior cingulate, posterior cingulate, parietal, and temporal cortices), compared to a brain region expected to be spared of such pathology (cerebellum).

Pharmacokinetics:

The pharmacokinetics (PK) of KISUNLA were characterized using a population PK analysis with concentration data collected from 2131 patients with Alzheimer's disease who received KISUNLA in single or multiple doses. Accumulation of <1.3-fold occurs with every-4-week dosing; steady state exposures are achieved after a single dose. In single doses from 10 to 40 mg/kg (~2 times the approved recommended dosage of 1400 mg for 70 kg of body weight), and multiple 10 and 20 mg/kg doses, exposures (Cmax and AUC) increased proportionally.

Distribution

The central volume of distribution is 3.36 L.

Elimination

KISUNLA is expected to be degraded by proteolytic enzymes in the same manner as endogenous IgG. The mean terminal half-life of donanemab-azbt is approximately 12.1 days. Donanemab-azbt clearance is 0.0255 L/h.

Assessment of efficacy:

The efficacy of Kisunla was evaluated in a double-blind, placebo-controlled, parallel-group study in patients with Alzheimer's disease. The patients had confirmed presence of amyloid pathology and mild cognitive impairment or mild dementia stage of disease. 1736 patients were randomized 1:1 to receive700 mg Kisunla every 4 weeks for the first 3 doses, and then 1400 mg every 4 weeks (N = 860) or placebo (N = 876) for a total of up to 72 weeks. The treatment was switched to placebo based on a prespecified reduction in amyloid levels measured by positron emission tomography (PET) at Week 24, Week 52, and Week 76. Kisunla (donanemab) significantly slowed Alzheimer's disease progression by more than 20% at 76 weeks in the TRAILBLAZER-ALZ 2 clinical trial. This was measured using the Integrated Alzheimer's Disease Rating Scale (iADRS) and Clinical Dementia Rating Scale Sum of Boxes (CDR-SB) score in patients with low/medium tau and in the combined low/medium and high tau populations. Treatment with Kisunla benefited all groups of trial participants, but patients in earlier stages of the disease showed the most significant improvements.

Side effects:

Despite the major improvement brought about by Kisunla it does come with serious side effects, like: Serious allergic reactions like swelling of the face, lips, mouth, or eyelids, difficulty breathing, and hives have happened during a KISUNLA infusion. Infusion-related reactions may also occur like chills**,** sweating, irritation of skin, headache, nausea, chest pain, vomiting, and difficulties in breathing.

But the most common side effects of KISUNLA include: swelling in areas of the brain with or without small spots of bleeding in or on the surface of the brain, and headache.

Contraindications:

Kisunla has proved to have mild to major interactions mostly with blood thinning drugs like (anticoagulants like warfarin, aspirin, apixaban)

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Events' Corner

Event 1: CPD: Pharmacists an integral part of the Healthcare system – Behind the counter to bedside 26 March 2024

On the occasion of World Health Day, a CPD Webinar was conducted on 26 March 2024 under the theme 'Pharmacist an Integral Part of the Healthcare System – Behind the Counter to Bedside'. This CPD welcomed more than 200 participants throughout the globe. Prof (Dr) Varsha Bangalee and Prof (Dr) Frasia Oosthuizen (University of Kwazulu- Natal South Africa) and Prof (Dr) Neelaveni Padayachee (University of Witwatersrand South Africa) were the speakers. Prof (Dr) Ashish Wadhwani welcomed everyone and opening remarks was given by Prof (Dr) Praveen Mohadeb. Ms Tan Wee Sophia Angeli was the student co-ordinator.

The first speaker Prof (Dr) Varsha Bangalee started the lecture by introducing the topic itself and how it applied globally. She explained how the aim in South Africa was to reach Universal Health Coverage by upskilling pharmaceutical skills. She explained how pharmacist is going beyond the traditional dispensing role to comprehensive health care. She concluded by emphasizing on how pharmacist should work so as to improve health outcomes and become key stakeholder in shaping health care delivery.

The second speaker Prof (Dr) Frasia Oosthuizen took over introducing the importance for pharmacist to apply the following points;

- Transitioning from dispensing focused role to a more patient centered
- Adaptation to advancement in technology
- Optimizing patient outcome
- Encourage decision making with patients
- Comprehensive approach to patient leading to a more efficient treatment
- Be familiar to evolution in pharmacy practice; medication therapy management and Immunization for instance.
- Interprofessional collaboration leading to ultimately improving the quality of healthcare
- Value based care relationship to sustainability in delivery of health care.

Later in the presentation she elaborated on the innovations in Pharmacy practice namely; Tele pharmacy, Automation and Robotics, Medication Adherence Technology, & Point-of-Care Testing. The third speaker Prof (Dr) Neelaveni Padayachee proceeded to talk in details about Modern Pharmacist Responsibilities focusing for instance on;

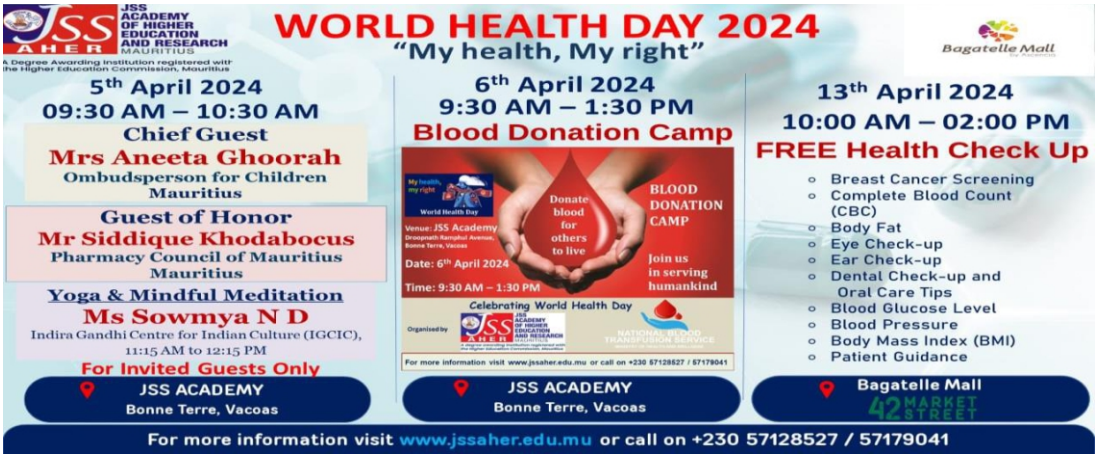
- Responsibilities of Pharmacists in dispensing medications to ensure safety and accuracy highlighting about the importance of patient counselling to ensure goof medication adherence.
- Medication Therapy Management where by taking thorough history, pharmacists tailor the therapy to individual's need.
- Medication Adherence Support aiming to find solution to patient non-adherence and explaining to them the outcomes of such behavior.
- Collaborative Practice Agreement to enhance and ensure proper care.

- Chronic Disease Management taking Mauritius and South Africa as examples due to the high rate present and putting emphasis on how pharmacist can help the patient monitor his disease on a regular basis.
- Medication Counselling and Education demonstrating with the example of simply asking the patient to repeat what you have said may be very effective even if it takes on few seconds to execute.

The webinar ended with a summary and acknowledgements.

Event 2: World Health Day 2024

The World Health Day, was celebrated at JSS Academy of Higher Education and Research, Mauritius, on 5 April 2024 under the theme, 'My health, My right' The World Health Day focuses on the fundamental human right: access to quality health care, education and information. The three day event was organised to educate and to bring the awareness about the importance of a good health.



Day 1: Friday 5 April 2024 (Inaugural Function Program)

The event commenced with a welcome address from the Dean, Prof (Dr) Ashish Wadhwani, who expressed the importance of a good health and how a righteous health remains the backbone of all activities. In the same light, the CEO and Vice Chancellor, Prof (Dr) Praveen Mohadeb gave the opening remarks, elaborating on the heart-warming history of JSS Academy and its fundamental role in shaping the future graduates of the country to delivering quality care.

The Guest of Honour, Mr Sidddique Khodabocus, Chairman, Pharmacy Council Mauritius, shared his views about the access to healthcare for everyone. The MoU Signing Ceremony was held between JSSAHERM and the Pharmacy Council of Mauritius. The aim of this much anticipated MoU is:

- To promote professional development and the advancement of the pharmacist profession.
- To jointly organize and conduct various educational programs and courses for pharmacists to facilitate continuous learning.

The glorious occasion proceeded with esteemed Chief Guest, Mrs Aneeta Goorah, Ombudsperson for Children, Republic of Mauritius. She expressed her wonderful insight on the vitality of social, physical and mental wellbeing. However, most importantly, she reminded about behind every medical interaction and prescription, there lies a life. The launch of the Issue X "JSSAHER Newsletter- Health & Education" 2024 was done by the dignitaries. The newsletter covers general information related to health care and pharma sector, latest happenings in the world of science, scientific articles of students and staff members on Health and Life sciences, Drug-related information, and event corner of the JSSAHERM. Furthermore, the felicitation of students who underwent internship at India was done. The closing remarks from Mr K P Naveen, Registrar, was given and the day ended with the yoga and meditation session for everyone by Ms Somya N D, Yoga instructor (IGCIC, Mauritius) for the day.

Day 2: Saturday 6 April 2024 (Blood Donation Camp)

Following the inauguration functional program, JSSAHER Mauritius conducted a blood donation camp in association with the National Blood Transfusion Service from Ministry of Health and Wellness. The event was conducted on campus from 9.30 am to 1.30 pm.

The event was a big success.

Day 3: Saturday 13 April 2024 (Free Health Camp)

JSSAHER Mauritius organised a free Health Camp at Bagatelle Mall, Moka. The event was coordinated in association with

- Pharmaceutical Association of Mauritius (PAM)
- Spectra Eye
- Sinha Medical Centre
- Diagnos Clinique

- Soza Health
- National Blood Transfusion Service
- Lions Club Albion Le Phare
- Biswal Traders

They flowing health tests were conducted for the public:

Moreover, attendees had the opportunity to receive explanations on their test results along with counselling in order to maintain the recommended range. They also participated in the quiz contests organised and were rewarded with intriguing prizes, namely, glucometers, oral care products, vitamin supplements and among many others. In conclusion, it is crucial to note that the key aspect of this event was to provide health services free of charge to everyone to commemorate the importance of the World Health Day 2024, 'My Health, my right'. Portraying the aim besides educating and spread awareness, it serves as a catalyst for community engagement, advocacy, and collective action towards achieving healthier communities, reminding the population of the blessings of taking good care of one's health.

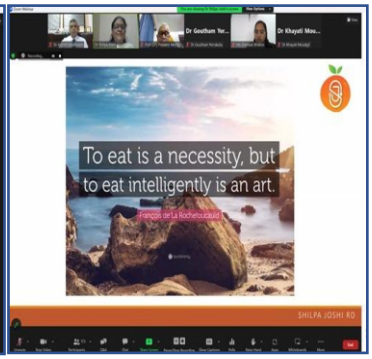
A glimpse of the event;

Event 3: CPD webinar on "Mindful Eating: Cultivating the Relationship with Food in Today's "Fast-life: Fast-food and My Health, My Right" Era with Special Emphasis on Obesity and Diabetes"

On the 22 April 2024, CPD webinar on the topic of "Mindful Eating" was conducted by JSS Academy of Higher Education and Research, Mauritius. Prof (Dr) Ashish Wadhwani who gave welcomed everyone to the webinar. After the welcoming address, Prof (Dr) Praveen Mohadeb provided the opening remarks where he highlighted on importance of health and recalled the last interaction with the speaker, following this introduction, the session was commenced by Dr (Mrs.) Shilpa Joshi, Director, Mumbai Diet and Health Centre, India who led the webinar with her extensive knowledge and expertise on the topic of mindful eating.

While the main objectives of the webinar were on the cultivation of the relationship with food in Today's "Fast-life: Fast food and My health, My right" Era, Dr Joshi, also highlighted on how simple substitutions in the diet can make big difference to our health. During the session, Dr Joshi addressed and dispelled several myths that had become normalized in the day-to-day life. Common misconceptions were clarified and several tips were given on a wholesome diet. This session was highly beneficial for all attendees and participants from all over the globe attended the webinar. In-depth insights and practical strategies were provided on incorporating mindful eating into daily routines.

After the enriching and highly informative session, the webinar reached its conclusion. This segment was conducted by student representative, Ms. Zeenaat Bhatoo, bringing the webinar to an end.



Event 4: Guest lecture on Stress Management Tips 7 May 2024

On 7 May, Dr K Jayaprakash Rao, Former Regional Public Relations Officer, DRDO, Ministry of Defence, Govt. of India, conducted a lecture on **STRESS MANAGEMENT TIPS.** Dr Jayaprakash Rao started off by conveying the blessing and best wishes to everyone presents for their career in life and said that he was pleased to meet the younger generation. The lecture was based on the following phrases such as Stress is one of the acts of the brain, man is only an animal who can think and react, no other animal can do that. Our brain does not stop working. It thinks about the past, present and the future. The way we think is a cycle. Controlling our minds is not our brains. Brains are unique and different which is why people think in different ways. How to control the velocity of the mind is not in the thinking but it is all in how to control this all positively, it is not a quote but a mindset.

He also explained the difference between empathy and sympathy and also gave some ways to manage stress:

1. Music
2. Gardening
3. Morning walk
4. Mediation and breathing techniques
5. Keeping pets
6. Exercising

His lecture concluded with an interactive session.

Event 5: GLOBAL ACHIEVERS SUMMIT

Vishwavani Daily and Mallige Kannada Balaga, Mauritius in association with JSS Academy of Higher Education and Research, Mauritius (JSSAHERM) organized the Global Achievers Summit at the JSS Academy, Mauritius on the 19 May 2024 at 5 p.m. The function was presided over by Sri Vinay Guruji, Avadhoota and the Spiritual Leader. Smt. Jayamala Ramachandra Former Minister & Actress, Sri Vishweshwar Bhat, Chief Editor, Vishwavani, Prof (Dr). Praveen Mohadeb, CEO, JSS Academy of Higher Education and Research, Mauritius and Sri Naveen K.P, Registrar, JSS Academy of Higher Education and Research, Mauritius and President, Mallige Kannadaa Balaga, Mauritius were the Chief Guests for the programme.

The programme was started with the lighting of the lamp by the Chief Guests. Sri Vishweshwar Bhat, in his welcome address, mentioned that the objective of the programme is to identify and encourage the achievers at international level and to spread the culture of Karnataka in various countries. He also mentioned that the programme would not have been possible without the blessings of His Holiness Jagadguru Shri Shivaratri Deshikendra Mahaswamiji. Sri Vinay Guruji, in his speech, mentioned about the cordial relationship between India and Mauritius and it's appropriate that the programme is being held at Mauritius. Smt. Jayamala Ramachandra, Prof (Dr). Praveen Mohadeb and Sri Naveen K.P praised the efforts of Vishwavani Daily for conducting the Global Achievers Summit in various countries in the past and now in Mauritius. The following achievers across the various fields from Karnataka received Global Achievers Award from Sri Vinay Guruji, Smt. Jayamala Ramachandra, Sri Vishweshwar Bhat, Prof (Dr). Praveen Mohadeb and Sri Naveen K.P.

- Ramappa Shesha Naik
- Yaswanth Kumar
- Gokul Das
- Pratham
- Mahalinga B Itnal
- S Narayan
- Girish V Gowda
- R Chandru

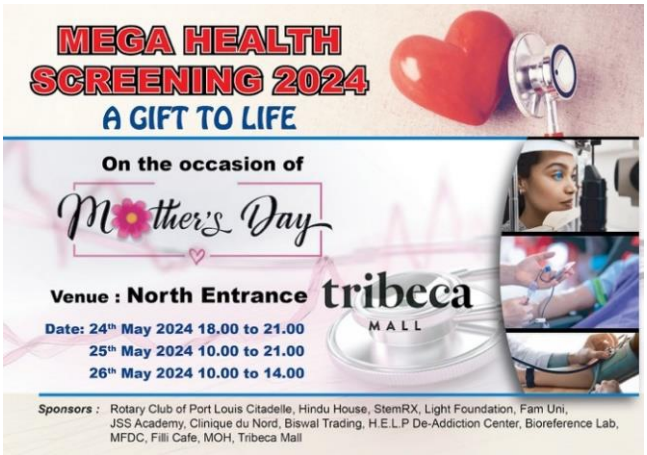
- C.R Manohar

The award ceremony was followed by the Cultural programmes. The guests paid tribute to His Holiness Jagadguru Dr. Sri Shivarathri Rajendra Mahaswamiji. The members of the Mallige Kannadaa Balaga, Mauritius, the staff and students of JSS Academy of Higher Education and Research, Mauritius were also present during the event.

Event 6: Mega Health Screening

It is said by Rudyard Kipling 'God could not be everywhere, and therefore he made mothers"

On the occasion of Mother's Day, a Mega Health Screening was organized in association with Hindu House, Rotary Club of Port Louis Citadelle, and StemRxThe Health Camp was conducted from 24 May-26 May 2024 at Tribeca mall. More than 180 people has undergone various health check-ups and to every mother a plant was given as token of love.



Event 7: World Environment Day Celebrations and Elocution Competition

An elocution competition on 28 May 2024 was organized on the occasion of World Environment Day celebration at JSSAHERM. The competition goals were to get students talking about the environment and to let them express their opinions and solutions for environmental problems. The topics for the elocution competition were:

- Beat Pollution
- Embrace Eco-friendly Living
- Reuse Your Today So That You Do Not Have to Reduce Your Tomorrow
- Sustain Our Marine Biosphere
- Heat Down, Earth Up: Combat Warming
- Soil Erosion/Deforestation

The competition was enthusiastic participation of the students across various departments. Each participant showcased their oratory skills and environmental awareness, delivering powerful speeches on their chosen topics. A panel of judges, evaluated the speeches based on content, delivery, originality, and relevance to the topic. The judges were impressed by the depth of knowledge and the passion displayed by the participants. The elocution competition was a successful event that not only provided a platform for students to express their environmental concerns but also fostered a deeper understanding of environmental issues. The compelling speeches and the enthusiasm of the participants highlighted the university's commitment to promoting environmental awareness and action.

On 30 May 2024, World Environment Day was organized by Faculty of Life Sciences, JSS Academy of Higher Education and Research Mauritius and featured an emphasis on environmental awareness, meaningful activities, and a series of insightful talks on environment was a huge success. There were invited chief guest, faculty members, and students gathered at the event. Prof (Dr) Jaishree Vaijanathappa gave a welcome speech and she emphasized the value of World Environment Day and the contribution that educational institutions make to encouraging environmental stewardship in young people. The opening remarks by Prof (Dr) Praveen Mohadeb, CEO and Vice- Chancellor of JSSAHER gave a general overview of the issues facing the environment around the world and stressed the importance of working together to find solutions. He emphasized the need of adopting sustainable practices and the university's dedication to protecting the environment.

The chief guest of the day was Mr. Yudhish Narotumdass Rohee, who has ten years of experience in sustainability and ESG consulting, Mr. Rohee has worked on numerous local, national, and international projects involving environmental and social impact assessments, environmental audits, environmental and social risk assessments, sustainability reports, environmental product declarations, green building initiatives, and smart city reports. Mr. Rohee spoke about the critical environmental issues facing the world today and the urgent need for action. He encouraged students to be proactive in their environmental efforts. He also spoke about the sustainable initiatives that his organization are planning to do in the near future for a better environment. Following the chief guest's address, certificates were distributed to the best talk of the elocution competition held on the previous day. Mr. Naveen K P, Registrar delivered the vote of thanks, expressing gratitude to all the speakers, participants, and attendees. He acknowledged the efforts of the organizing committee and reiterated the university's dedication

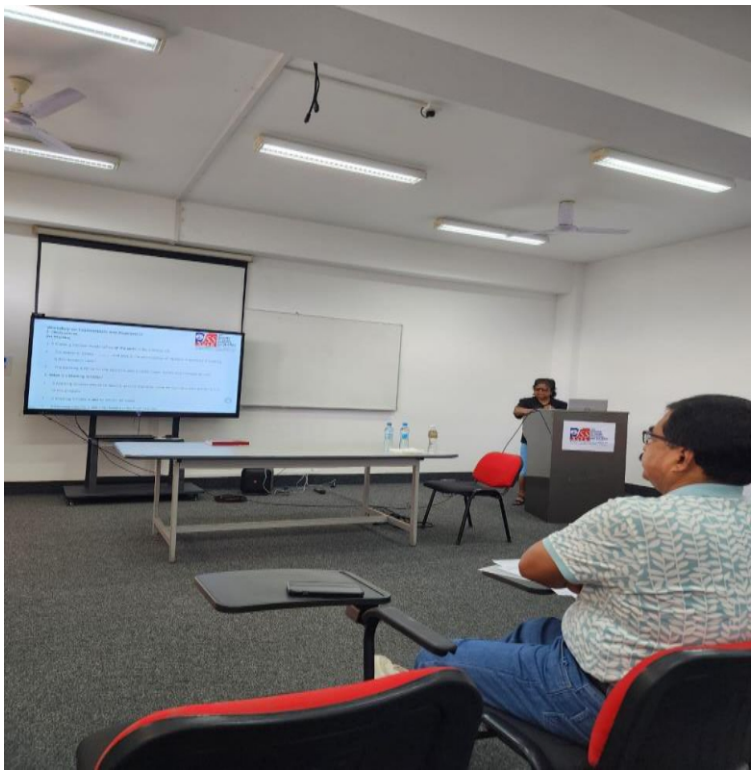
to promoting environmental sustainability. The celebration concluded with the plantation of medicinal plants on the university campus. This symbolic act underscored the importance of preserving biodiversity and promoting the use of natural remedies. Students and faculty members enthusiastically participated in the plantation activity.





Event 9: Workshop for Examinations and Assessment 31 July 2024

The office of Controller of Examinations, JSSAHERM conducted an internal Workshop for Examinations and Assessment on 31 July 2024. The Workshop was chaired by the Controller of Examinations Mrs Laleeta Mohadeb where she highlighted the importance of examinations, its related components, examination process and procedure. All the staffs attended the same and took the advantage of the workshop.



Event 10: Workshop on Preceptors Orientation, Responsibilities and Training of Students 3 August 2024

JSSAHERM conducted a workshop for the Preceptors on orientation, responsibilities and precepting the students. The main aim was to interact with all the preceptors who are precepting the students among private and public sectors. The B Pharm students undergoes the internship at community pharmacies and clinics as part of the curriculum. The preceptors plays a major and a pivotal role in precepting the students and making them 'Practice Ready'. This workshop is the regular activity conducted by the School of Pharmacy to orient about the expectations and roles and responsibilities of the preceptors. A total of 12 preceptors participated in the workshop held at Treasures Chinese Restaurant, So'Flo Mall, Floréal. Dr Goutham Yerrakula welcomed the gathering, Prof (Dr) Praveen Mohadeb in his opening remarks mentioned the importance of internship for the B Pharm students. Prof (Dr) Ashish Wadhwani highlighted about the activities of the School and emphasised on Pharm D programme. Dr Khayati Moudgil and Dr Goutham Yerrakula highlighted on the importance of the training. Mr K P Naveen, Registrar proposed vote of thanks.

Event 11: 109th Jayanthi Celebrations of His Holiness Jagadguru Dr Sri Shivarathri Rajendra Mahaswamiji

JSS Academy, Mauritius celebrated 109th Jayanthi of His Holiness Jagadguru Dr. Sri Shivarathri Rajendra Mahaswamiji on Friday, 30th August 2024. On this occasion Dr Praveen Mohadeb, CEO & Vice-Chancellor, Mr. Naveen K P, Registrar, the Teaching and Non-Teaching Staff paid respects to His Holiness. Mr. Naveen K P spoke about His Holiness contribution in the field of Education, Boarding and Health Services that led to overall social development.

Students' Learning Experience - Internship

Internship of Ms. Saarah Ahmed at Clinique Darne

On the 1st July 2024, I initiated my 6 weeks internship in C-Care Darne. This journey was undoubtedly gratifying to my knowledge as I have grasped many principles and concepts that have inspired me to become a reliable future pharmacist. Over the course of my internship, I worked in in-patient pharmacy where I supplied the patients admitted in the hospital wards with their medications as well as the necessary surgeries apparatus if needed. My experience in this department was enhanced with the help of the pharmacist in charge of In-patient pharmacy, Mrs. Dipna Ramsooroop. With her vast knowledge of the industry, she implemented substantial missing elements which were found to be utterly beneficial for a successful career and fascinating as well as challenging case discussions.

I got the opportunity to visit the preparations rooms with Mrs. Hooma Auchoybur, a clinical pharmacist and my preceptor at the site. She shared her expertise and also demonstrated the different preparations of chemotherapeutic agents for treatments along with pre-medications needed for patients. To conclude, being an intern on hospital grounds was far from being an easy task, however I fostered teamwork, problem solving and time management skills while instilling professionalism and ethics.

This experience provided me a clear insight into the daily life of a pharmacist and offered networking opportunities for future career prospects in the field. I thank JSSAHERM for providing this opportunity at BPharm level.

Internship of Ms. Vanshita Devi Bhoojhowon at C-Care Wellkin

As a pharmacy student, I had the invaluable opportunity to undertake a six-week internship at C-Care Wellkin Moka in Mauritius. This experience offered me a profound understanding of various aspects of clinical pharmacy, particularly focusing on the dispensing of drugs for chemotherapy and ICU/NICU patients, the pivotal role of clinical pharmacists, and the intricacies of managing pharmacy inventory. Here's a detailed account of my time there.

Dispensing of Drugs for Chemo and ICU Patients: One of my primary responsibilities during the internship was the dispensing of medications for chemotherapy and ICU patients. This involved meticulous preparation and handling of potent drugs, ensuring accurate dosages, and maintaining stringent safety protocols to prevent contamination or errors. Each patient's treatment plan was tailored, requiring a thorough understanding of the specific needs and reactions associated with their medications.

Role of a Clinical Pharmacist in Treatment Planning: The role of a clinical pharmacist extends beyond dispensing medications. At C-Care Wellkin Moka, I observed and participated in the clinical decision-making process. Clinical pharmacists collaborate closely with doctors and nurses to determine the most effective treatment plans for patients. This involves reviewing patient histories, monitoring ongoing treatments, and making adjustments based on the latest medical evidence and patient responses. Their expertise ensures that each patient receives the best possible care, with a focus on both efficacy and safety.

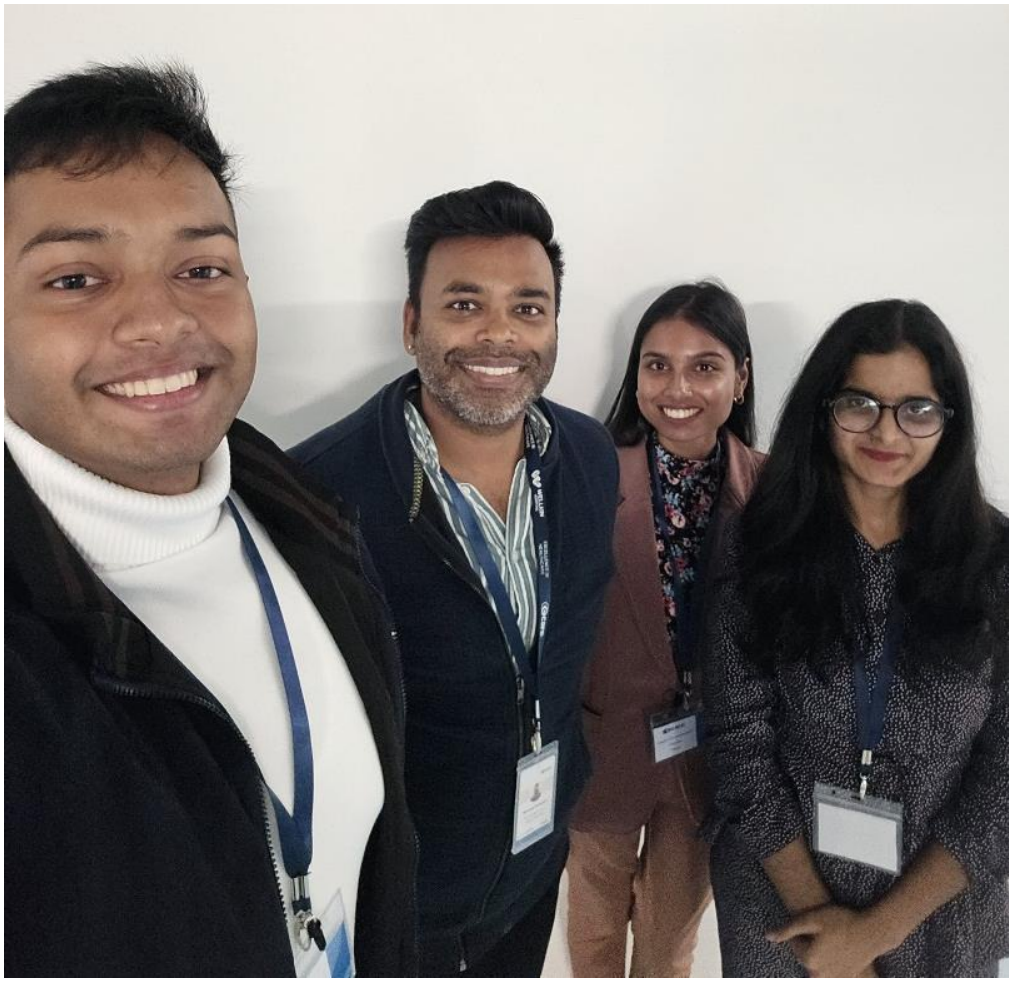
The Hospital Information System at C-Care Wellkin Pharmacy: The hospital information system at C-Care Wellkin Pharmacy is an integrated platform designed to streamline pharmacy operations. It includes electronic health records (EHR) to ensure accurate and accessible patient information. The system supports inventory management, tracking medication stock levels, expiry dates, and refrigeration requirements. It facilitates seamless communication between pharmacists, doctors, and nurses, enhancing collaborative care.

Visits to the Pharmacy Store and Oncology Ward: During my internship, I had the opportunity to visit the pharmacy store and the oncology ward. The pharmacy store is the heart of medication management, where I learned about inventory control, storage conditions, and the importance of maintaining an up-to-date stock to prevent shortages. The oncology ward visit was particularly enlightening, as I witnessed first-hand the application of chemotherapy treatments and the crucial role pharmacists play in supporting oncology care teams. In the oncology ward, pharmacists have a critical role in managing cancer treatments. They are responsible for preparing chemotherapy drugs, providing detailed counselling to patients about their treatment regimens, and managing side effects. Pharmacists also work with oncology nurses and doctors to adjust doses based on patient tolerance and therapeutic response, ensuring optimal outcomes.

Inventory Management for Drug Products: Effective inventory management is vital in a hospital setting. I was involved in tracking and managing the stock of drug products stored in the in-patient pharmacy. This included regular inventory checks, ensuring that medications were within their expiry dates, and that high-demand drugs were always available. Efficient inventory management helps in preventing drug shortages and reducing waste, which is essential for maintaining continuous patient care.

Certain medications require refrigeration to maintain their efficacy. As part of my internship, I learned about the specific requirements for storing fridge items, which include vaccines, insulin, and certain biologics. Proper storage conditions are crucial to preserving the effectiveness of these medications. I was trained on monitoring fridge temperatures, logging entries, and managing stock rotation to ensure the freshest supplies are used first.

Case Presentation on IV Medication Administration: One of the highlights of my internship was presenting a case study on the administration of intravenous (IV) medications. This involved a comprehensive review of a patient's treatment plan and the protocols for safe administration. My presentation emphasized the importance of precision in dosing, the potential complications of IV therapy, and the role of doctors, pharmacists and nurses in monitoring and managing these treatments to avoid adverse effects.



In picture Mr. Nurveen Sunnassee, Chief Pharmacist of C-Care Wellkin, Moka, along with fellow pharmacy students, Mrs. Milan Sharma and Mr. Pravir Henrage

To conclude, my six-week internship at C-Care Wellkin, Moka was a transformative experience that deepened my understanding of hospital pharmacy practice. From dispensing critical medications and managing inventory to collaborating with healthcare teams and ensuring patient safety, I gained a holistic view of the responsibilities and impact of a clinical pharmacist. This experience has not only enhanced my skills but also solidified my commitment to pursuing a career in pharmacy, where I can contribute to improving patient care and outcomes.

Internship of Ms. Gitikha Bheenick at C-Care Wellkin

Following the completion of my second year BPharm also meant delving into the professional world, so as to get an idea of what is required of us, pharmacist to be, in the working field. At JSSAHERM you're given the opportunity of doing your internship at either a retail pharmacy or in a clinic. Well as for me, I had opted for working in a retail pharmacy, and thus I joined the MedActiv team of Caudan, Port-Louis. There I was the mentee of the pharmacist Mrs. Jaya Ramchurn and the pre-reg pharmacist Mr. Yousouf Kathrada.

The course of the internship started on the 1st of July till the 10th of August. During the first few days, the aim for me was to observe and learn the functioning of the pharmacy i.e the layout of the products, both pharmaceutical and Para-pharmaceutical (first in-first out method, merchandising or based on stock demands) as well as the different responsibilities of the staffs and soon after it was time for me to take on my share of duties.

The various tasks during the period of my internship comprised of:

1. Checking of purchases (quantity, expiration date)
2. Handling of purchase receipts and the processing of invoices
3. Dispensing patients including counselling.
4. Reading and understanding prescriptions
5. Assisting banking procedures each week.
6. Checking of goods-in list for finance purposes.
7. Doing perpetual inventory system and cross checking with physical stock.

Looking back to my first internship, I can say it was a very gainful experience and gave me a glimpse of what it means to be a pharmacist and taught me about the different responsibilities and ethics I must possess. I sincerely thank School of Pharmacy, JSSAHERM for providing me with this opportunity.

Memorandum of Understanding/Agreements

The JSSAHER Mauritius signed MoUs with the following;

1. Pharmacy Council of Mauritius
2. Royal Green Hospital

The MoU with Pharmacy Council of Mauritius aims;

- To promote professional development and the advancement of the pharmacist profession.
- To jointly organize and conduct various educational programs and courses for pharmacists to facilitate continuous learning

This MoU further enlightens the need to engage in Hospital Pharmacy such as:

- Participating in ward rounds, reviewing patient treatment charts, allowing patient reviews and monitoring ADRs
- Assessing possible drug interactions and performing dose divisions
- Inventory management and performing medication audits
- Use of Hospital Information System (HIS) to indent, issue, and print labels, prior to dispensing of medications

Publications, Workshops and Conferences Attended (May-August 2024)

1. A visit to National Science Week 2024: Celebrating innovation and learning

The Rajiv Gandhi Science Centre in collaboration with the Ministry of Education, Tertiary Education, Science and Technology organized the National Science Week (NSW) 2024 from 25 to 29 March 2024 on the theme "Innovating for a Sustainable Future: STEM and Mauritius 2030" at the Cote D'or National Sports Complex. The Vice-Prime Minister and Minister of Education, Tertiary Education, Science and Technology, Mrs Leela Devi Dookun-Luchoomun; the High Commissioner of India, Mrs K.Nandini Singla; the High Commissioner of South Africa, Dr Hlamalani Nelly Manzini; the Director of Tertiary Education and Scientific Research Division of the Ministry of Education, Tertiary Education, Science and Technology, Dr Kiran Bhujun; the Chairperson of the Rajiv Gandhi Science Centre Trust Fund, Dr Ellora Mishra Dhunnoo; Director of the Rajiv Gandhi Science Centre, Dr Aman Kumar Maulloo; rectors and students, amongst others, were present, this morning, for the opening ceremony.

The National Science Week aimed at communicating science and technology to the public, encouraging discussions among different stakeholders involved in science education and enabling students to interact with local and international scientists. Dr Jaishree Vaijanathappa, Dr Khayati Moudgil and Dr Goutham Yerrakula were the invited guest from JSSAHERM.

2. Visit to the Regulatory Department of the Pharmacy Board and to the Central Supplies Division

On 28 March 2024, the final year BPharm students, accompanied by Dr Khayati Moudgil, visited the Regulatory Department of the Pharmacy Board to gain insights into the regulatory framework governing pharmaceuticals in the country. The Pharmacy Board of Mauritius is responsible for regulating the pharmacy profession and the pharmaceutical industry in Mauritius, ensuring the safety, quality, and efficacy of pharmaceutical products. The primary purpose of the visit was to understand the regulatory processes and requirements for pharmaceutical products in Mauritius.

Ms. A. Mangatha, Registrar of the Pharmacy Board, explained the registration and licensing procedures for pharmacies and pharmaceutical products. The Pharmacy Board conducts regular inspections of pharmacies, pharmaceutical manufacturers, and distributors to ensure compliance with regulations of the Pharmacy Council Act (2015) and the Dangerous Drugs Act (2000). Non-compliance with regulatory requirements can result in penalties, suspension, or revocation of licenses. The department is also involved in the registration and licensing of upcoming pharmacies. Pharmacies need to meet specific standards regarding premises, storage facilities, and personnel qualifications to obtain a license. Central Supplies Division, Cassis were being visited and provided with detailed explanations by Mr F. Elyhee, Principal Pharmacist, who explained the various operations of the Central Supplies Division. The warehouse is responsible for storing and distributing central supplies of pharmaceuticals to various healthcare facilities across Mauritius. These healthcare facilities include public and private hospitals, and community health centers. The warehouse stores multiple pharmaceuticals such as tablets, eye drops, creams, ointments, inhalers, syrups amongst many others.

3. Pathologists and Forensics Association Conference

Dr. Khayati Moudgil, Ms. Salvi Wahidna and Ms. Zeenaat Bhatoo participated in the Pathologists and Forensics Association, Mauritius organized at Pearle Beach Hotel, Flic en Flac on 18 and 19 May 2024.

Day 1 of the conference started with an engrossing talk by Prof. Sumeet Gujral, Professor of Pathology at Tata Memorial Hospital, Mumbai on flow cytometry and its use in the diagnosis of hematological malignancies. He was followed by Dr. Vernon Louw, Chair and Head of Clinical Hematology division at University of Cape Town, who gave an elaborate talk of patient blood management in surgeries.

Dr. Ashish Gulia, Director at Homi Bhabha Cancer Hospital and Research Centre, Chandigarh, took over with the current trends in the management of orthopedic/soft tissue malignancies

while Dr. Clement Grondar chose to discuss on the possibilities of bloodless surgery. Finally, the day came to an end with Dr. Maxwell Monvoisin's discussion on carbon monoxide poisoning being a threat in Mauritius, to which he concluded the answer to be in the negative.

Day 2 carried on with the same fervor as the previous day with detailed and intricate topics like iron deficiency anemia by Dr. Vernon Louw, and the expectations of a surgeon in a pathology report for orthopedic/soft tissue malignancies by Dr. Ashish Gulia. Participants were also subjected to a small speech by Dr. The Honourable Kailesh Jagutpal, Minister of Health and Wellness of Mauritius, whose presence was highly appreciated on that day. The conference came to a close with the final talks from Dr. Sumeet Gujral on interesting hematology cases and Dr. S. K. Gungadin, Chief Police Medical Officer, Mauritius Police Force on medicolegal cases, but not without a networking session of the attendees during lunch. Moreover they met and discussed about the health parameters with the Honorable Health minister Dr Kailash Jagutpal.

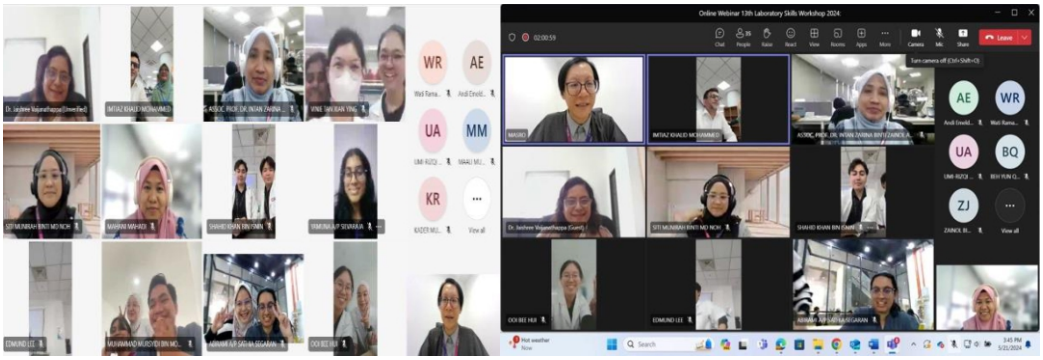
4. Exploring Tropical Herbs: Bridging Ethnopharmacology and Molecular Docking

On May 21, 2024, Faculty of Pharmacy, University of Cyberjaya hosted an online webinar "Exploring Tropical Herbs: Bridging Ethnopharmacology and Molecular Docking" which was a successful webinar. Assoc. Prof. Imtiaz Khaled Mohamed Head of Unit of Pharmaceutical Chemistry, welcomed and introduced Prof. (Dr.) Jaishree Vaijanathappa to start the online webinar. She emphasized Exploring Tropical Herbs of various countries and the contribution that educational institutions are encouraging, the bridging between modern medicine and ethnopharmacology stewardship in a new medicine era. The online webinar was hosted in various countries including Malaysia, India, Indonesia, Thailand and Mauritius at different time.

Prof. (Dr.) Jaishree Vaijanathappa, Head of Life Sciences JSSAHER, Mauritius, provided an insight on Bridging Ethnopharmacology and Molecular Docking and emphasized the value of collaboration in problem-solving. She highlighted the university's commitment to preserving tropical herbs as well as the necessity of implementing sustainable methods.

Ethnopharmacology: The study of medications made from naturally occurring materials, such as plants and fungus, that have been historically utilized for medical purposes by certain populations is known as ethnopharmacology. Research in ethnopharmacology is still in its infancy but is progressing quickly. In 1967, the phrase was coined for the first time in relation to the study of hallucinogenic plants. The Society was founded during the first ethnopharmacology congress in Strasbourg, France, in 1990, and is currently recognized by Michigan law as a charitable organization.

Molecular Docking: Essentially, the purpose of molecular docking is to use computational techniques to anticipate the structure of the ligand-receptor complex. Two related procedures can be used to accomplish docking: first, sample ligand conformations in the protein's active site; second, rank these conformations using a scoring system. By simulating the atomic-level interaction between a small molecule and a protein using the molecular docking technique, we may clarify basic biochemical processes and describe the behaviour of small molecules in target proteins' binding sites. The webinar concluded with question, answers and feedbacks. This symbolic act underscored the importance of preserving biodiversity and promoting the use of natural remedies. Participants from varied countries enthusiastically participated in the webinar, marking a fitting end to the day's online webinar. The online webinar on Exploring Tropical Herbs: Bridging Ethnopharmacology and Molecular Docking emphasized the relevance of tropical herbs. The talks, knowledge exchange, and participation all underlined the importance of sustainable practices and the role of education in creating a greener future.



Publication:

1. Magham Sai Varshini, Ramakkamma Aishwarya Reddy, Praveen Thaggikuppe Krishnamurthy, **Ashish Wadhwani.** Harmony of Wnt Pathway in Alzheimer's: Navigating the Multidimensional progression from preclinical to clinical stages" Neuroscience & Biobehavioral Review 165 Oct 2024 **(Q1 - Impact Factor: 7.4**)

2. Dhivya Kothandan, Daniel S. Singh, **Goutham Yerrakula**, Backkiyashree D, Pratibha N, Vincy Santhana Sophia B, Ramya A, Sapthami Ramya VG, Keshavini S, Jagadheeshwari , Advanced Glycation End Products-Induced Alzheimer's Disease and Its Novel Therapeutic Approaches: A Comprehensive Review, Cureus; 2024: 16(5): e61373 **(Impact Factor: 1.2).**

3. K Rohith Chandra, B Jeevan Kumar, D Mubeen Taj, Pavani M, Kondaveeti Devaki, Nunavath Raja Shekhar, Sirisha Kommireddy, Ajay Kumar Chittipolu, **Goutham Yerrakula** Effect of Coping Strategies on Pain Intensity in Patients with Rheumatoid Arthritis. Journal of Pharmacology and Pharmacotherapeutics 1–7 **(Q4, Impact Factor 0.5)**

4. Jemi Rachel Shaji, Bhagya Premnath, Elaheebucus Bibi Madina Zina, Simran Trehan, Piyush Kumar, **Khayati Moudgil**. An educational review on Breast Feeding versus Formula Feeding. International Journal of Pharmaceutical Research | Jul - Sep 2024 | Vol 16 | Issue 3 **(WoS)**

Neuroscience and Biobehavioral Reviews 165 (2024) 105863

Contents lists available at ScienceDirect

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Harmony of Wnt pathway in Alzheimer's: Navigating the multidimensional progression from preclinical to clinical stages

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ARTICLE INFO

Keywords:
Tau hyperphosphorylation
Aβ plaques
Wnt pathway
GSK-3 inhibitors
DKK1 inhibitors

ABSTRACT

The Wnt pathway stands out as a pivotal signal transduction pathway, operating through two distinct modes of signaling: the canonical/β-catenin pathway and the non-canonical pathway. Among these, the canonical pathway assumes a paramount role in various physiological and pathological processes within the human body. Particularly in the brain, Wnt exhibits involvement in fundamental physiological events including neuronal differentiation/survival, axonogenesis, neural stem cell regulation, synaptic plasticity, and cell cycle modulation. Notably, scientific evidence underscores the critical role of the Wnt pathway in the pathogenesis of Alzheimer's disease (AD), correlating with its involvement in key pathological features such as tau tangles, Amyloid-β plaques, synaptic dysfunction, oxidative stress, mitochondrial dysfunction, cognitive impairments, and disruption of the blood-brain barrier integrity. This review aims to comprehensively explore the involvement and significance of Wnt signaling in Alzheimer's. Furthermore, it delves into recent advancements in research on Wnt signaling, spanning from preclinical investigations to clinical trials.

Cureus
Part of SPRINGER NATURE

Open Access Review Article

DOI: 10.7759/cureus.61373

Advanced Glycation End Products-Induced Alzheimer's Disease and Its Novel Therapeutic Approaches: A Comprehensive Review

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Abstract

Advanced glycation end products (AGEs) accumulate in the brain, leading to neurodegenerative conditions such as Alzheimer's disease (AD). The pathophysiology of AD is influenced by receptors for AGEs and toll-like receptor 4 (TLR4). Protein glycation results in irreversible AGEs through a complicated series of reactions involving the formation of Schiff's base, the Amadori reaction, followed by the Maillard reaction, which causes abnormal brain glucose metabolism, oxidative stress, malfunctioning mitochondria, plaque deposition, and neuronal death. Amyloid plaque and other stimuli activate macrophages, which are crucial immune cells in AD development, triggering the production of inflammatory molecules and contributing to the disease's pathogenesis. The risk of AD is doubled by risk factors for atherosclerosis, dementia, advanced age, and type 2 diabetic mellitus (DM). As individuals age, the prevalence of neurological illnesses such as AD increases due to a decrease in glyoxalase levels and an increase in AGE accumulation. Insulin's role in proteostasis influences hallmarks of AD-like tau phosphorylation and amyloid β peptide clearance, affecting lipid metabolism, inflammation, vasoreactivity, and vascular function. The high-mobility group box 1 (HMGB1) protein, a key initiator and activator of a neuroinflammatory response, has been linked to the development of neurodegenerative diseases such as AD. The TLR4 inhibitor was found to improve memory and learning impairment and decrease Aβ build-up. Therapeutic research into anti-glycation agents, receptor for advanced glycation end products (RAGE) inhibitors, and AGE breakers offers hope for intervention strategies. Dietary and lifestyle modifications can also slow AD progression. Newer therapeutic approaches targeting AGE-related pathways are needed.

Categories: Endocrinology/Diabetes/Metabolism, Neurology, Therapeutics
Keywords: rage, oxidative stress, ages, alzheimer's disease, dementia

Introduction And Background

Alzheimer's disease (AD), a complex neurodegenerative condition, has been closely linked to the accumulation of advanced glycation end products (AGEs) in the brain. This association has sparked a review of novel therapeutic approaches aimed at mitigating AGE-induced neurodegeneration. Creating effective therapeutic strategies to combat this debilitating disease requires a comprehensive understanding of the complex interactions between AGEs and AD's pathology. AD accounts for 50–60% of the 55 million dementia cases reported around the world [1,2]. It is estimated in the study that 152 million individuals worldwide will have AD and other dementias by 2050. According to reports, Asian nations have reduced prevalence rates of AD [3]. The incidence rates are higher in females when compared to males; this is because of a decrease in antioxidant enzymes and post-menopausal hormonal changes [4,5].

How to cite this article
Kothandan D, Singh D S, Yerrakula G, et al. (May 30, 2024) Advanced Glycation End Products-Induced Alzheimer's Disease and Its Novel Therapeutic Approaches: A Comprehensive Review. Cureus 16(5): e61373. DOI 10.7759/cureus.61373

Research Article

Effect of Coping Strategies on Pain Intensity in Patients with Rheumatoid Arthritis

Sage

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Abstract

Background: Rheumatoid arthritis (RA) is a systemic autoimmune disease that imposes significant challenges globally. This research seeks to contribute valuable insights that can inform the development of targeted interventions, enhancing the quality of care for RA patients and potentially mitigating the broader societal burden associated with this chronic autoimmune condition.

Conclusion: The study provides nuanced insights into RA, emphasizing the importance of personalized coping and pain management strategies. The prevalence of mental health challenges and the spectrum of pain experiences underscore the multidimensional nature of RA, informing holistic approaches to care for enhanced patient outcomes.

Keywords

Rheumatoid arthritis, autoimmune disease, mental health, diagnostic markers, pain, personalized medicine

Received 07 March 2024; accepted 09 May 2024

ISSN: 0795-2388

Review Article

An educational review on Breast Feeding versus Formula Feeding

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Received: 27.05.24; Revised: 22.06.24; Accepted: 23.07.24

ABSTRACT

Breastfeeding is the gold standard in terms of new born nutrition and feeding. Given the demonstrated short- and long-term medical and neuro developmental benefits of nursing over alternate methods, baby nutrition should be handled as a public health concern rather than a personal preference. The American Academy of Paediatrics recommends breast feeding exclusively for the first six months, followed by continuous breast feeding with formula or complementary food for an additional year or as long as the mother or new born wants. Pediatricians play a key role in the community by advocating for breastfeeding, educating parents about the health concerns connected with not breast feeding, and promoting the economic benefits associated with breast feeding. To avoid misinterpretation of an infant's health category, growth should be monitored using the World Health Organization's (WHO) Growth Curve Standards.

Keywords: Breast feeding, nutrition, public health, paediatrics.

Announcements and Upcoming Event

JSSAHERM proudly announces the **graduation of first cohort** of **B Pharm and BSc (Hon) Environment Sciences** students and wish the graduates the successful professional path ahead.

Upcoming Event:

World Pharmacists Day: 25th September 2024

Accreditation Council for Pharmacy Education, USA visit to JSSAHERM

The Accreditation Council for Pharmacy Education (ACPE), USA team comprising Dr Jacob P. Gettig, Assistant Director, Accreditation Services, ACPE, Dr Paraidathathu Thomas Executive Dean Faculty of Health & Medical Sciences, Taylor's University, Malaysia and Dr Wanda Maldonado-Davila, Dean and Professor, Chair of the Department of University of Puerto Rico School of Pharmacy, USA visited JSS Academy of Higher Education and Research, Mauritius (JSSAHERM) between 26-28th Aug 2024 for assessment of the advancement of pre-accreditation to international accreditation for B Pharm programme and continuation of pre-accreditation of Pharm D programs.

The three days assessment process started as per the visit schedule and discussions were held in different sessions.

Overall, the ACPE accessors were satisfied and appreciated the progress made for both B Pharm and Pharm D program in terms of teaching and learning, curriculum, students and academic policies, and facilities & resources.

Pre-accreditation of B Pharm and Pharm D by Accreditation Council for Pharmacy Education (ACPE), USA


Accreditation Council for Pharmacy Education

Certifies that the
Bachelor of Pharmacy Degree of
JSS Academy of Higher Education and Research Mauritius
School of Pharmacy
has fulfilled the Preaccreditation requirements set forth by ACPE for the
Professional Degree Program in Pharmacy and Preaccreditation is hereby granted
through June 30, 2025.

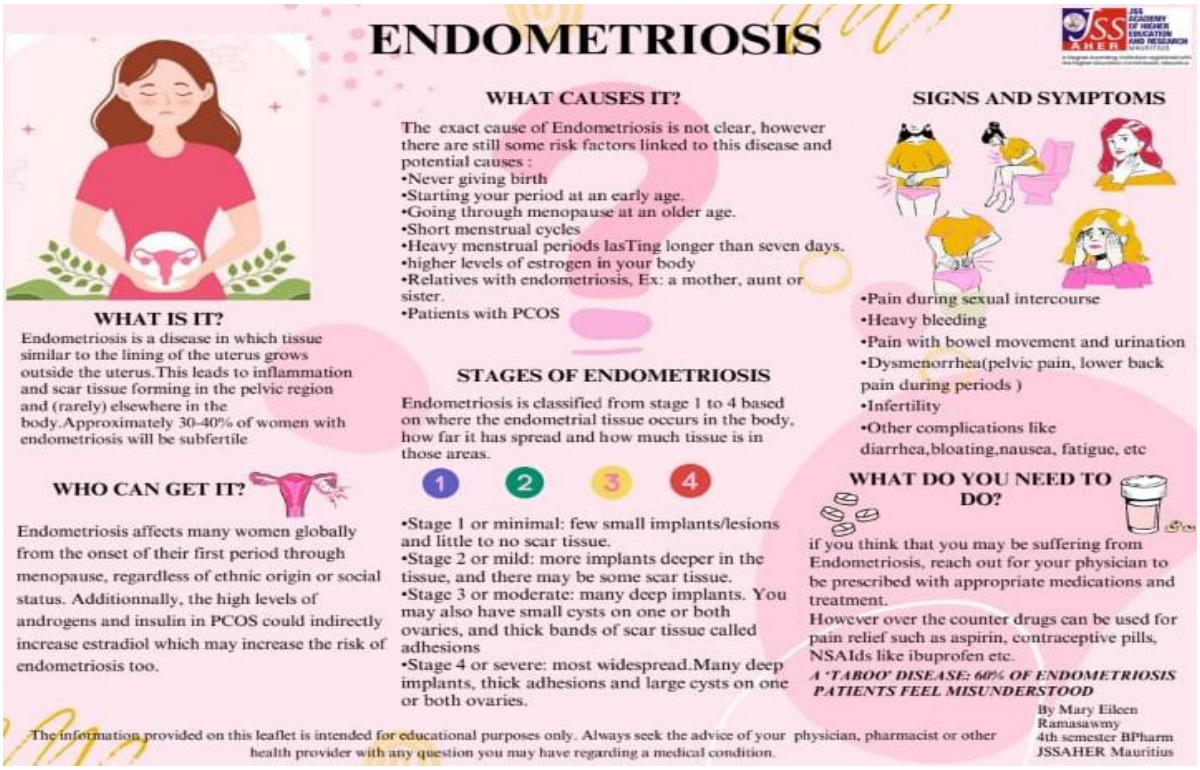
Pre-accreditation received on 7th August 2020
Affirmed on 7th February 2022
Affirmed on 20th June 2023 till 30th June 2025


Accreditation Council for Pharmacy Education

Certifies that the
Doctor of Pharmacy (Pharm.D) Degree Program of
JSS Academy of Higher Education and Research
Mauritius
School of Pharmacy
has fulfilled the International-Accreditation requirements set forth by ACPE for the
Professional Degree Program in Pharmacy and International-Preaccreditation
is hereby granted through June 30, 2031.

Pre-accreditation received on
20th June 2023 till 30th June 2031

PATIENT INFORMATION LEAFLETS



ENDOMETRIOSIS

WHAT IS IT?

Endometriosis is a disease in which tissue similar to the lining of the uterus grows outside the uterus.This leads to inflammation and scar tissue forming in the pelvic region and (rarely) elsewhere in the body.Approximately 30-40% of women with endometriosis will be subfertile

WHO CAN GET IT?

Endometriosis affects many women globally from the onset of their first period through menopause, regardless of ethnic origin or social status. Additionnally, the high levels of androgens and insulin in PCOS could indirectly increase estradiol which may increase the risk of endometriosis too.

WHAT CAUSES IT?

The exact cause of Endometriosis is not clear, however there are still some risk factors linked to this disease and potential causes :

- Never giving birth
- Starting your period at an early age.
- Going through menopause at an older age.
- Short menstrual cycles
- Heavy menstrual periods lasTing longer than seven days.
- higher levels of estrogen in your body
- Relatives with endometriosis, Ex: a mother, aunt or sister.
- Patients with PCOS

STAGES OF ENDOMETRIOSIS

Endometriosis is classified from stage 1 to 4 based on where the endometrial tissue occurs in the body, how far it has spread and how much tissue is in those areas.

1 2 3 4

- Stage 1 or minimal: few small implants/lesions and little to no scar tissue.
- Stage 2 or mild: more implants deeper in the tissue, and there may be some scar tissue.
- Stage 3 or moderate: many deep implants. You may also have small cysts on one or both ovaries, and thick bands of scar tissue called adhesions
- Stage 4 or severe: most widespread.Many deep implants, thick adhesions and large cysts on one or both ovaries.

SIGNS AND SYMPTOMS

- Pain during sexual intercourse
- Heavy bleeding
- Pain with bowel movement and urination
- Dysmenorrhea(pelvic pain, lower back pain during periods)
- Infertility
- Other complications like diarrhea,bloating,nausea, fatigue, etc

WHAT DO YOU NEED TO DO?

if you think that you may be suffering from Endometriosis, reach out for your physician to be prescribed with appropriate medications and treatment.
However over the counter drugs can be used for pain relief such as aspirin, contraceptive pills, NSAIds like ibuprofen etc.

A 'TABOO' DISEASE: 60% OF ENDOMETRIOSIS PATIENTS FEEL MISUNDERSTOOD

By Mary Eileen Ramasawmy
4th semester BPharm
JSSAHER Mauritius

CYSTIC FIBROSIS

WHAT IS IT?

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

CAUSE

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

FROM BIRTH

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

SYMPTOMS

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

COMPLICATIONS

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

TREATMENT

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

SANIYA ISSIMDAR, IV SEMESTER/ II YEAR, BPHARM

DID YOU KNOW

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

For Clarifications/Feedback, Write

To:

The Chief Editor

JSS Health & Education Newsletter

Prepared and Circulated by:

School of Pharmacy

Faculty of Health Sciences

JSS Academy of Higher Education and Research, Mauritius

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