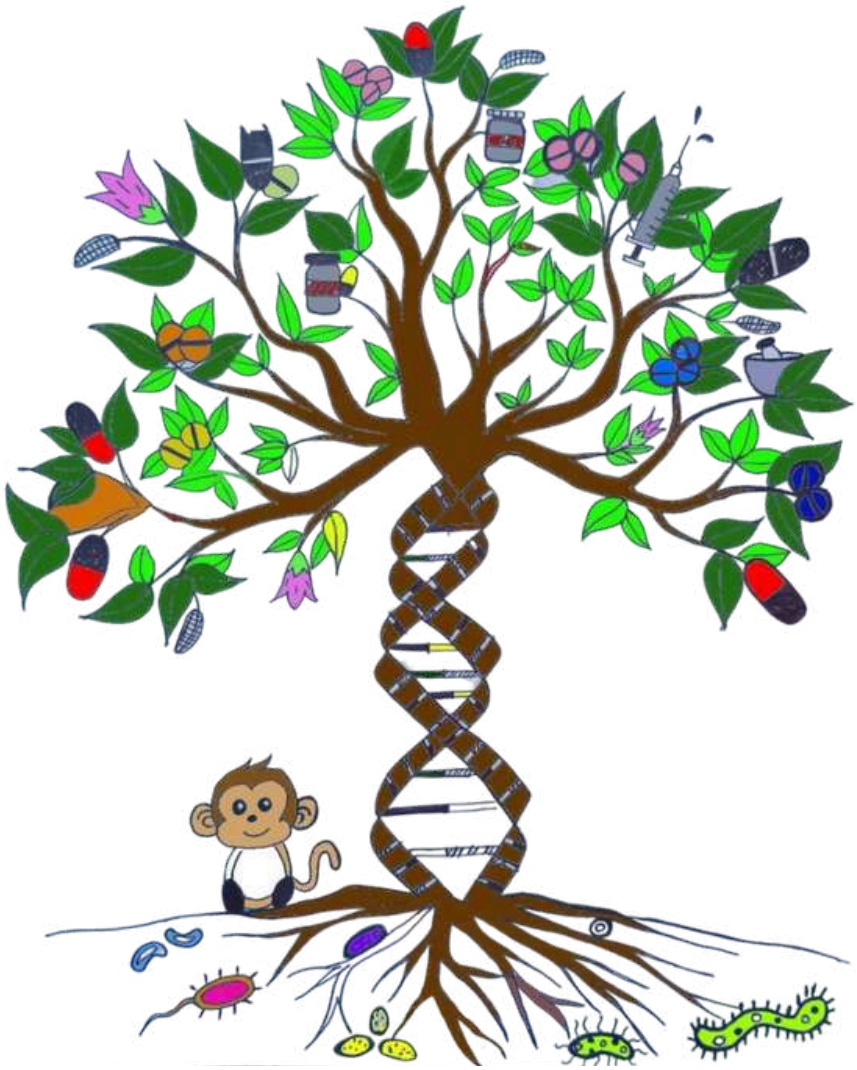
NEXGEN PHARMA

Department monthly e-magazine



PHARMACEUTICAL TECHNOLOGY

PAAVAI ENGINEERING COLLEGE

(AUTONOMOUS)

NH-44, PAAVAI NAGAR, PACHAL, NAMAKKAL - 637 018.

TAMIL NADU, INDIA.

Jan-Feb 2025

Editorial Message

Welcome to NexGen Pharma Magazine 2025!

It is a proud moment for us to launch the monthly e-magazine of the Department of Pharmaceutical Technology. Our editorial team sincerely thanks the Chairman, Correspondent, Director-Admin, and Principal for granting us the freedom to publish this magazine.

Moving forward, we strive to elevate our department to new heights through the collective efforts of our students and staff. Two years ago, we had a department magazine, and after a brief hiatus, we are now revitalizing it to provide a platform for the Pharmaceutical Technology community to showcase their knowledge and expertise. This includes contributions in the form of artwork, puzzles, poems, essays, one-page research articles, a staff forum, an alumni spotlight, and more.

Additionally, we have featured past department activities as well as upcoming events and celebrations, encouraging everyone to actively participate. Beyond academics, our department boasts more than 15 student clubs, including the Library Club, Higher Studies & GATE Coaching Club, Seminar Club, Medicinal Plants Cultivation Club, Publication Club, Technical Events Organizing Club, and many more.

We extend Our sincere appreciation to the students and staff for their valuable contributions. Your efforts are truly commendable, and I encourage you to continue contributing in the months ahead, ensuring that learning and development go hand in hand.

Dr.M.Masilamani Selvam, M.Tech., Ph.D.,
Dr. H. Harikrishnan, M.Tech., Ph.D.,
Mr.M.G.Karthih, M.Tech., (Ph.D.)

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JEEVA S
IV B.Tech (PT)

DHANUSH KUMAR R
III B.Tech (PT)

KANAGA R
II B.Tech (PT)

SOBIKA P
II B.Tech (PT)

Message from the Principal

PAAVAI ENGINEERING COLLEGE

Dr M PREMKUMAR
Principal

Warm Greetings!

It is with immense pride that I acknowledge the outstanding achievement of the Department of Pharmaceutical Technology in releasing the magazine NexgenPharma. This milestone stands as a shining testament to the department's unwavering commitment to academic excellence, innovation, and student empowerment.

The magazine's content, which highlights the latest trends, research, and advancements in pharmaceutical technology, reflects the department’s dedication to fostering a culture of knowledge sharing, critical thinking, and creativity.

I extend my heartfelt appreciation to the faculty and students involved in this remarkable endeavor. Your tireless efforts, teamwork, and passion for pharmaceutical technology have culminated in a publication that truly represents the department's excellence.

Best wishes to the magazine team, and I look forward to the magazine’s impactful contributions in shaping the future of pharmaceutical technology.

Message from the HoD

PAAVAI ENGINEERING COLLEGE

Dr R PRAVEEN CUMAR
Department of Pharmaceutical Technology

Warm Greetings !

I am overwhelmed with joy and pride as we release the magazine "NexgenPharma". a brainchild of our department.This milestone is a testament to the dedication, teamwork, and persistence of our students. faculty, and staff.

The magazine is a culmination of our department's efforts to foster a culture of innovation, research, and knowledge sharing. It showcases the latest trends, research, and advancements in pharmaceutical technology, highlighting our department's commitment to academic excellence.

I extend my sincere appreciation to each and every one of you who has contributed to this achievement. Your efforts have not only brought laurels to our department but have also created a platform for our students to showcase their talents.

Congratulations to the entire team!

Department Vision and Mission PEOs/PSOs

Vision

To provide quality technical education and prepare the students to become well qualified Pharmaceutical Technologists competent to face global challenges and to serve the society by acquiring adequate professional knowledge and skills by training.

Mission

M1. Quality Education: To produce innovative, competent and goal-oriented Pharmaceutical Technologists through latest technology and educational experience.

M2. Technology Updation: To enrich the knowledge of students by imparting state of the art technology, so that they will satisfactorily serve the society.

M3. Employability: To improve employability of students through Industry-Institution relationship and make them industry ready.

M4. Research & Development: To widen the knowledge of the faculty members continuously through research and development initiatives.

Programme Educational Objectives (PEOs)

PEO I Global reputation

To provide profound knowledge in various fields of Pharmaceutical Technology for a successful career in their related Industries that makes them globally reputed.

PEO II Fundamental knowledge

To develop the students with a sound foundation in mathematical, scientific and engineering fundamentals necessary to synthesize the technical core concepts focusing on skill development and knowledge up gradation which will lead to technical innovations.

PEO III Continuous learning

To demonstrate professional success via learning in the broadest context of technological changes, continue to learn and advance in their careers by participation in professional organization & attainment of professional certification in the field of pharmaceutical technology.

Programme Specific Outcomes (PSOs)

PSO I Design & Development

Design and develop new drug dosage forms which will provide solution to current difficulties faced by the industry of drug delivery and drug safety.

PSO II Core Competencies

Understanding and applying the fundamental concepts of drug synthesis, drug development, drug design and evaluation of the efficacy and safety of specific dosage forms.

TABLE OF CONTENT

EVOLUTIONIZING PHARMACEUTICALS WITH ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI) is transforming the pharmaceutical sector, reshaping drug discovery, clinical trials, and manufacturing. By leveraging vast amounts of data, AI accelerates processes, reduces costs, and ultimately enhances patient care.

Traditionally, developing new drugs is a lengthy and costly endeavor, often requiring over a decade and billions of dollars. AI is revolutionizing this process by rapidly analyzing complex biological data to identify potential drug candidates. Innovations like DeepMind's AlphaFold allow scientists to predict protein structures in mere days rather than years, expediting the development of groundbreaking treatments.

Clinical trials, a crucial phase in drug development, are also benefiting from AI. Machine learning algorithms streamline patient recruitment, assess trial success probabilities, and monitor participants more efficiently. These results in significant time and cost savings while ensuring life-saving medications reach patients sooner.

In pharmaceutical manufacturing, AI enhances quality control and operational efficiency. Predictive maintenance minimizes equipment failures, while AI-driven automation optimizes production lines, reducing waste and maintaining stringent safety and efficacy standards.

Another groundbreaking application is personalized medicine. By analyzing genetic data, AI can forecast how individuals will respond to specific treatments, enabling doctors to customize therapies for better outcomes with fewer side effects. This tailored approach is transforming patient care, making treatments more precise and effective.

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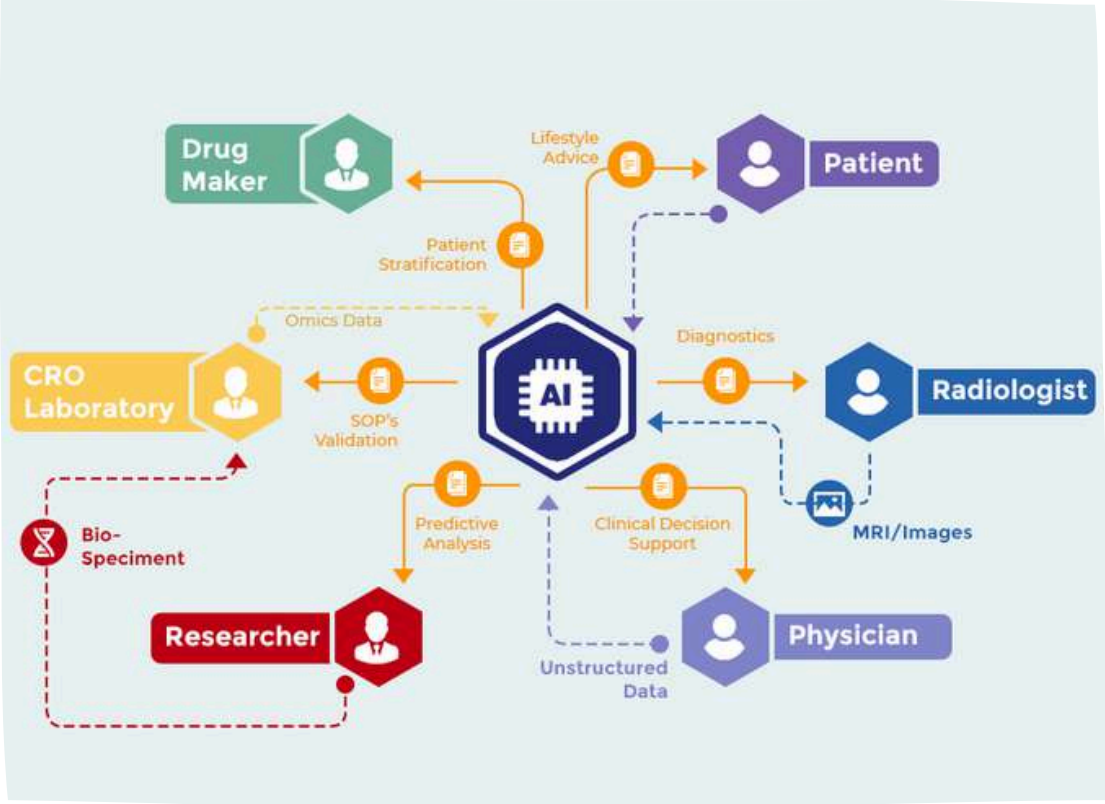
However, integrating AI into the pharmaceutical industry presents challenges. Data privacy, regulatory compliance, and bias in AI algorithms require careful consideration. Additionally, the initial investment in AI technology can be substantial, demanding strategic planning and resource allocation.

Despite these hurdles, AI's potential in pharmaceuticals is immense. As the technology advances, it promises to revolutionize healthcare, making treatments more efficient, accessible, and personalized. In an industry where time is critical, AI is driving faster, smarter, and more effective medical innovations



ADAIKALA SELVAN G
Assistant Professor (PT)

THE PILL OF HOPE

Dr. Rachel Kim stared at the small, white pill in her hand, her heart racing with excitement. Years of research, countless setbacks, and unwavering dedication had led to this moment.

The pill, code-named "Reviva," was a revolutionary new treatment for a rare and debilitating genetic disorder. Rachel's team had worked tirelessly to develop the medication, pouring over research, conducting clinical trials, and fine-tuning the formula.

As she looked at the pill, Rachel thought of Emma, a young girl who had been diagnosed with the disorder. Emma's parents had been told she wouldn't live past her tenth birthday. But Rachel was determined to change that.

With Reviva, Rachel believed Emma had a chance at a normal life. The pill had shown remarkable promise in clinical trials, halting the progression of the disorder and even reversing some of its effects.

Rachel's eyes welled up with tears as she thought of the countless families who would be impacted by Reviva. She envisioned the pill bringing hope to those who had lost it, and healing to those who had suffered for so long.

With a deep breath, Rachel stood up, the pill still clutched in her hand. She knew the journey ahead wouldn't be easy, but she was ready. For Rachel, Reviva was more than just a pill – it was a beacon of hope.

KANAGA R
II B.Tech (PT)

HEALING FROM THE HEART

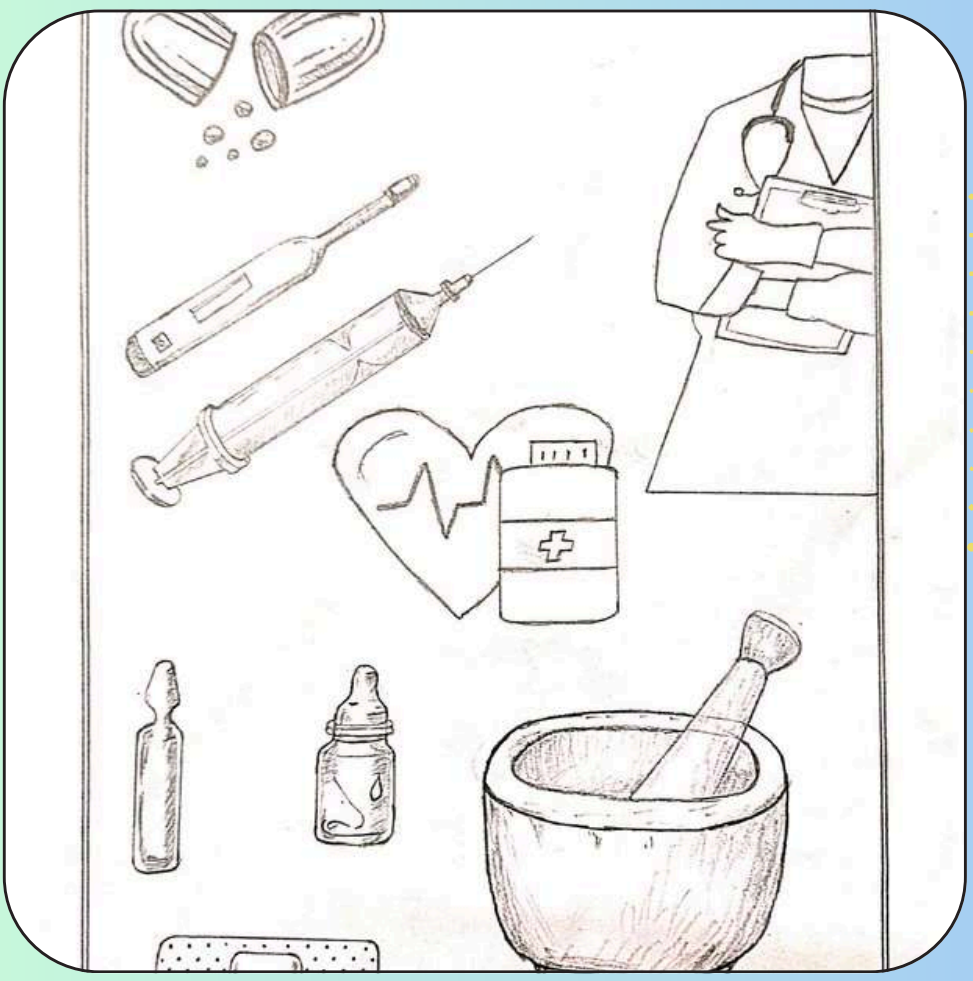
The busy lanes of Dharavi, located in bustling Mumbai, were home to a humble clinic run by Dr. Naina Patel. Her unwavering dedication to her patients had earned her the title of 'unsung hero,' as she provided essential medicines and treatments to those in neglected areas at reasonable prices. The clinic had seen countless faces over the years, each with their own stories of hardship and resilience, and Dr. Patel's compassion made a lasting impact on the community. One particularly hot and humid afternoon, a mother rushed toward the clinic's entrance, her face a mask of anxiety as she carried her young child, Rishi, who was doubled over in pain. After examining him with the utmost care, Dr Patel quickly realized that the poor boy was gravely ill and required a treatment that was quite expensive—far beyond the means of many families in the area. Determined to help, she made it her mission to find a way to provide the care Rishi needed. That midnight, under the warm glow of a reading lamp in her small office, she opened her journal and meticulously noted her thoughts. Inspired by ancient herbal remedies and modern medical knowledge, Dr. Patel began conceptualizing a unique formula that combined herbal extracts with contemporary treatments. With her heart set on helping Rishi, she sought out the rare herbs she needed, determined to find a solution. As word of Rishi's illness spread through the community, residents of Dharavi rallied together in a remarkable show of support. Inspired by Dr. Patel’s commitment, mothers, expectant mothers, grocers, and vendors all participated in sourcing the necessary herbs. They embarked on a treasure hunt throughout the bustling markets, asking vendors for leads and searching high and low to find each ingredient. It was a heartwarming sight—an unexpected display of kindness and collective spirit in Dharavi. Weeks passed as the community came together, sharing labour and resources.

Neighbours exchanged expertise and stories about herbal remedies, turning the effort into a bonding experience. They created a network of support, communicating the progress of Rishi's condition and uplifting each other's spirits. Eventually, everyone contributed their time and skills to prepare the healing concoction, and it became a symbol of their solidarity. Finally, the day arrived when the remedy was ready. Rishi began to show signs of improvement, and his pain gradually subsided. His strength increased with each passing day, and the community watched in awe as he slowly began to walk again. It was a true testament to their collective efforts. Grateful families who had once walked past theDr. Patel became a pillar of the community, not just a doctor but a guiding light for families navigating their hardships. Her actions inspired a new narrative in Dharavi, one where hope, resilience, and collective strength flourished. The clinic itself evolved into a hub of knowledge, where mothers shared their own experiences, and workshops were held to educate families about healthcare and nutrition. In time, the community began to treasure not only the healing of Rishi but also the bonds they formed throughout the journey. Together, they learned that while illness could bring sorrow, the strength of their unity and support could bring about miraculous change. Dr Patel was not just a healer; she was a catalyst for transformation in her community, a living testament to the fact that when people come together with love and purpose, they can overcome even the greatest of challenges.

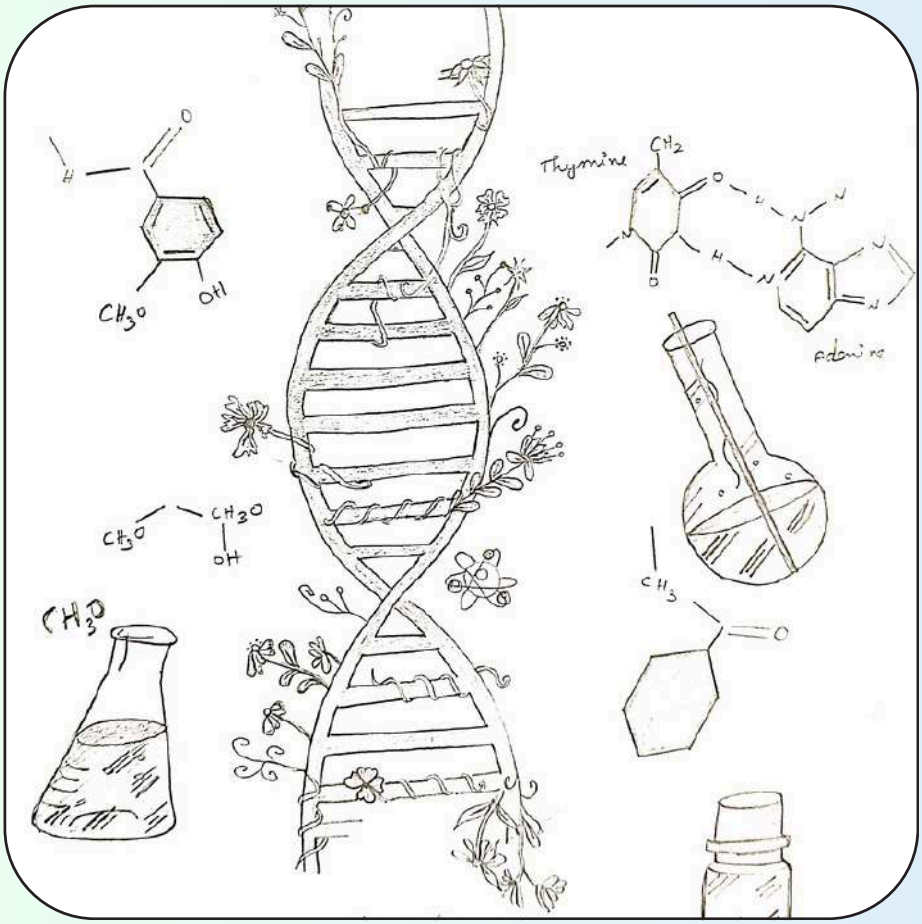
clinic now gathered around, sharing stories of hope and celebrating Rishi's recovery. Dr. Patel's clinic transformed into a beacon of hope and resilience in Dharavi. It was a reminder that sometimes the most powerful medicine doesn't come from laboratories but from the heart. Rishi's healing represented more than just effective medication; it was a testament to the love and moral support of the entire community. As Dr. Patel continued her work, she realized that her mission extended beyond offering medical care; it was also about fostering community ties and uplifting the spirits of those around her. Word of her success spread, and more families began to seek her out—not only for her medical expertise but for the compassion and empathy she embodied.

VISHVA V
IV B.Tech (PT)

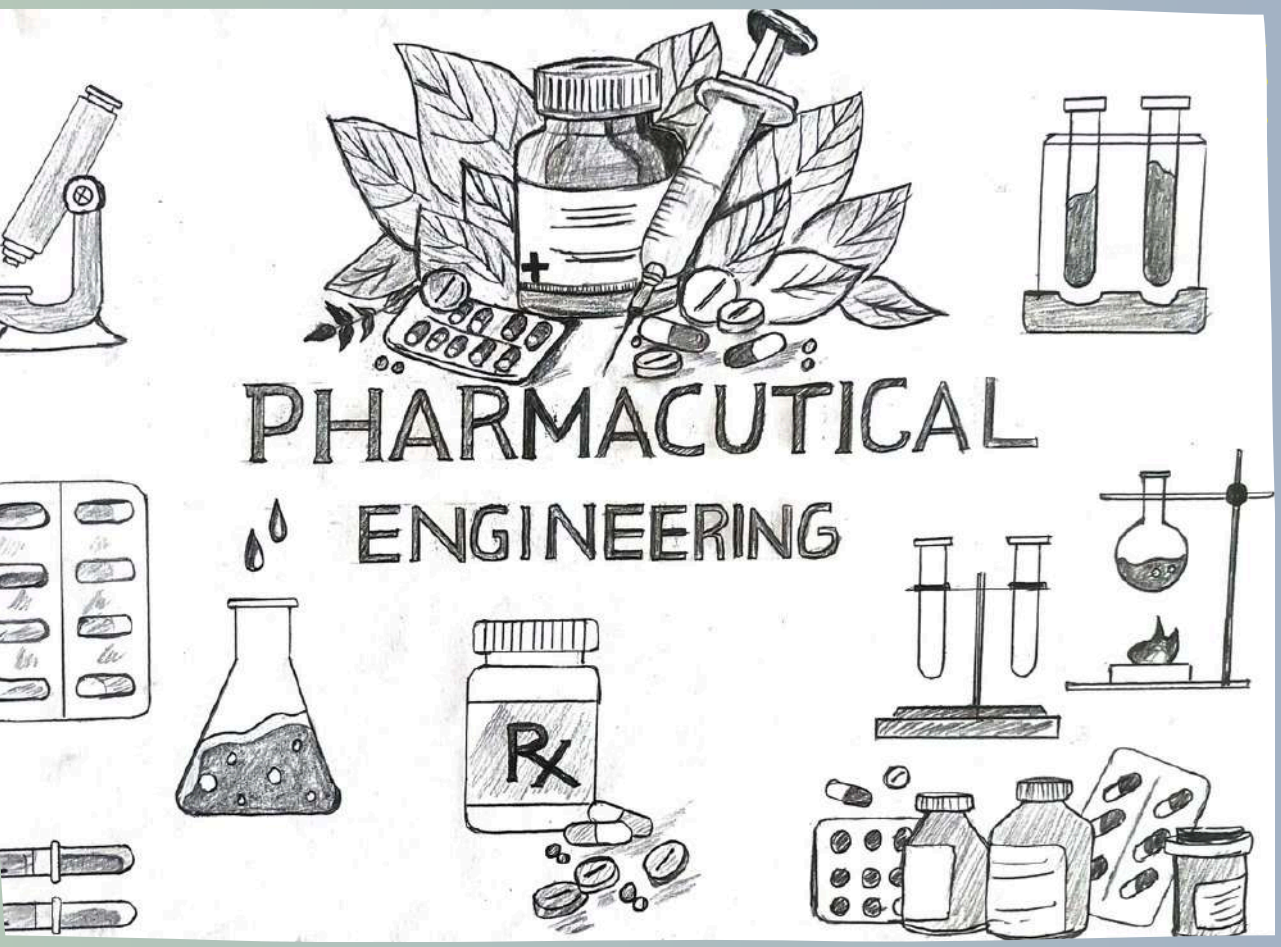
BRUSHSTROKE OF HEALTH



SUGANKUMAR S
II B.Tech (PT)



KRISHNA KUMAR R
II B.Tech (PT)



SANDHIYA V
III B.Tech (PT)

NAREN A
III B.Tech (PT)

GOWRI K
II B.Tech (PT)

MIND BENDERS

L	R	R	O	T	C	A	R	M	R	X	A	L	A	A
I	C	O	P	R	O	Z	A	C	A	A	C	I	B	O
R	F	L	T	T	A	P	M	L	L	N	I	I	C	R
E	N	L	H	S	P	A	A	C	F	A	R	M	E	P
G	E	R	O	C	E	T	Z	M	P	I	Y	O	A	N
L	V	S	A	N	A	R	Y	O	A	A	L	M	A	E
A	R	E	L	N	A	N	C	Y	C	X	O	C	R	T
M	O	R	A	Z	T	S	A	N	Z	X	U	O	R	O
I	N	O	I	Y	C	A	E	A	I	L	S	N	E	K
S	T	Q	R	L	R	I	T	L	F	S	L	M	X	A
I	I	U	L	O	N	T	P	I	E	C	O	K	Y	P
L	N	E	R	P	R	E	D	R	D	T	I	L	P	E
D	E	L	K	R	S	Z	P	Z	O	L	O	F	T	D
A	T	P	A	I	I	O	X	E	R	T	L	A	V	P
N	O	I	G	M	L	I	R	T	S	E	Z	C	K	T

ARIVUKARASAN R
III B.Tech (PT)

1.It is used to treat nerve pain ?
2. It is used to treat high blood pressure (Hyper tension)?
3. It is used to prevent (or) Lower excess Uric acid Levels caused by patients with kidney stones?
4. It is used to treat stomach ulcers (Bacterial Infections)?
5. It is used to treat fingernails & feet (fungas Infections)?
6. It is used to treat bipolar (Depressive) disorder?
7. It is used to treat Epilepsy (Ib's also treab for Nerve Pain)?

DOSE OF HUMOR

RAGHAVI R
IV B.Tech (PT)

HEALTH & HYGIENE

ആരോഗ്യവും ശുചിത്വവും: ആരോഗ്യം ഒരു സമ്പത്ത് ആണ്, അതിനാൽ അതിനെ സംരക്ഷിക്കാൻ ശുചിത്വം അനിവാര്യമാണ്. ശരീര ശുചിത്വം, ഭക്ഷണ ശുചിത്വം, പരിസര ശുചിത്വം എന്നിവ പാലിക്കുമ്പോൾ മാത്രം നല്ല ആരോഗ്യ അവസ്ഥ നിലനിര്ത്താനാകും. ശുദ്ധജലം കുടിക്കുകയോ, പോഷകാഹാരം കഴിക്കുകയോ, ശരീര ശുചിത്വം പാലിക്കുകയോ ചെയ്യാതെ ആരും ആരോഗ്യകരമായ ജീവിതം നയിക്കാൻ കഴിയില്ല.

ശരീര ശുചിത്വം: നിത്യവും കുളിക്കേണ്ടത്, കൈകളും കാലുകളും ശുചിയായി നിലനിർത്തേണ്ടത് പ്രധാനമാണ്. ഭക്ഷണത്തിന് മുമ്പും ഉപയോഗശേഷം കൈ കഴുകുന്നത് പകർച്ചരോഗങ്ങൾ തടയാൻ സഹായിക്കും. സ്വച്ഛവസ്ത്രങ്ങൾ ധരിക്കുക, നഖങ്ങൾ ചെറുതാക്കി വൃത്തിയായി സൂക്ഷിക്കുക എന്നിവ ആരോഗ്യത്തിനാവശ്യമാണ്. ശരീര ശുചിത്വം പാലിക്കാത്തവർക്ക് അസുഖങ്ങൾ, അണുബാധ, മറ്റ് രോഗങ്ങൾ ഉണ്ടാകാൻ സാധ്യതയുണ്ട്.

ഭക്ഷണ ശുചിത്വം: ശുദ്ധജലം മാത്രമേ കുടിക്കാവൂ. അശുദ്ധമായ ഭക്ഷണം ഒരുപാട് രോഗങ്ങൾക്കും കാരണമാവാം. പഴകിയ ഭക്ഷണം കഴിക്കാതെ, അലോസരമില്ലാതെ പാചകം ചെയ്ത, ശുദ്ധമായ ഭക്ഷ്യവസ്തുക്കൾ മാത്രം കഴിക്കേണ്ടത് അനിവാര്യമാണ്. പഴങ്ങൾക്കും പച്ചക്കറികൾക്കും ഉപയോഗത്തിന് മുമ്പ് നല്ലതുപോലെ കഴുകേണ്ടതും പ്രധാനമാണ്.

പരിസര ശുചിത്വം: വീടും പരിസരവും വൃത്തിയായി സൂക്ഷിക്കണം. മാലിന്യങ്ങൾ തള്ളേണ്ടിടത്ത് മാത്രമേ കളയാവൂ. പൊതുസ്ഥലങ്ങളിൽ പുകയില ഉൽപ്പന്നങ്ങൾ ഉപയോഗിക്കാതിരിക്കുക, സാമൂഹിക ശുചിത്വത്തിനാവശ്യമാണ്. ശുചിത്വം പാലിക്കുമ്പോൾ ആരോഗ്യപരമായ ജീവിതശൈലി സ്വകാര്യമാകുകയും സമൂഹത്തിന്റെ ക്ഷേമത്തിനും സഹായകമാവുകയും ചെയ്യും. ഓരോരുത്തരും ശുചിത്വം ജീവിതത്തിന്റെ ഭാഗമാക്കണം, അപ്പോൾ മാത്രമേ ആരോഗ്യകരമായ ഭാവി സാധ്യമാകൂ.

Health and Hygiene: Health is a valuable asset, and maintaining hygiene is essential to preserving it. Personal
hygiene, food hygiene, and environmental cleanliness are crucial for a healthy lifestyle. Without drinking clean
water, consuming nutritious food, and maintaining cleanliness, one cannot lead a healthy life.

Personal Hygiene: Taking a bath daily, keeping hands and feet clean, and maintaining personal cleanliness are
essential. Washing hands before and after eating helps prevent infectious diseases. Wearing clean clothes,
trimming nails, and keeping them tidy are also necessary for good health. Lack of personal hygiene can lead to
skin infections, bacterial infections, and other diseases.

Food Hygiene: It is crucial to drink only clean water. Contaminated food can cause many diseases. Avoid
consuming stale food and prefer fresh, well-cooked, and hygienic meals. Fruits and vegetables should be
thoroughly washed before consumption.

Environmental Hygiene: Keeping homes and surroundings clean is important. Waste should be disposed of
properly. Avoid using tobacco products in public places and refrain from spitting or littering to ensure social
cleanliness. Maintaining hygiene promotes a healthy lifestyle and benefits society as a whole. Everyone should
make hygiene a part of their daily routine, as it is essential for a healthier future.

Dr H HARIKRISHNAN
Associate Professor (PT)

जुड़ी और चिकित्सा

राजीव नामक की एक हर्बल कंपनी थी, जो प्राचीन और प्राकृतिक चिकित्सओं की नयी खोज खोलती थी। वहां कार्य करने वाले वैज्ञानिक बहुत कुशल थे जो यह मानते थे कि हर्बल चिकित्सां सिर्फ की नहीं, बल्कि सबके लिए उपलब्धित हो।

कंपनी में एक नया औषधी टी तैयार किया गया जो बहुत प्रभावी था। लेकिन यह कारगारी नियमित की योग्यता कर देखते ही कुशल को लगा कि कुछ नया करना चाहिए। उसने किसी को बन्द कर दिया और लगतार एक कोषियात्मक तैयार किया।

यह टी बाजार में आई और लोगों को दुख का रिवाज हुआ। लेकिन कुछ समया के कारण उसके को बाजार में बनाने में कमपनी को बहुत परेशानी हुई। अमीरिकी के बड़े टी में शामिल होने वाली यह टी दुनिया की नई मीराक बनगी। बाजार के प्रवासियों ने कंपनी को सही मदद दिया और उसके नियमित की जांच के लिए एक नई योजना लागू कर दिया।

यह कहानी हर्बल के जीवन में एक मिल की तरह दुनिया में आत्मनिर्भर करने की प्रेरणा देता है।

HERBS AND HEALING

Rajiv owned an herbal company that focused on discovering ancient and natural remedies. The scientists working there were highly skilled and believed that herbal treatments should not be limited to a few but should be accessible to all.

The company developed a new herbal tea that was highly effective. However, while assessing its efficiency, one of the experts felt the need for innovation. He discontinued a certain process and continuously worked on a strategic formulation.

When this tea was introduced to the market, it brought relief to many. However, due to some circumstances, the company faced significant challenges in mass production. Eventually, this tea became one of the most renowned herbal products in America, regarded as a new miracle in the world. Market leaders supported the company and implemented a new plan to systematically evaluate its effectiveness.

This story serves as a milestone in the world of herbal medicine, inspiring self-reliance globally.

M G KARTHIH
Assistant Professor (PT)

மருத்துவத்தின் தன்னம்பிக்கை

ஒரு சிறிய கிராமத்தில் கதிர் என்ற ஒரு மருத்துவர் வாழ்ந்தார். அவர் மிகவும் உயர்ந்த மனப்பாண்மையுடைய மருந்துகளுக்கு மிகுந்த கவனத்தை கொடுக்கும் ஒருவராக இருந்தார். அவர் சிகிச்சை செய்வதில் எப்போதும் புதிய புதுமைகளை தேடும் தன்மை கொண்டவர்.

ஒரு நாள், ஒரு பரிதாபகரமான நிலையில் கடுமையாக பாதிக்கப்பட்ட ராதா என்ற பெண்மணி அவரிடம் வந்தாள். அவளுக்கு பல நாட்களாக காயம் சரியாகவில்லை, அவள் உணவுக்கு கூட நேரம் ஒதுக்காமல் இருந்தாள். அவளின் சோம்பல் துக்கத்தில் மிதந்து போய், கதிரிடம் வந்தது.

கதிர், ராதாவின் நிலையை கவனித்து, அவளுக்கான சிகிச்சையைத் தொடங்கினார். ராதாவின் பரிசோதனை முடிந்து, அவளுக்கு குறிப்பிட்ட மருந்துகள் கொடுக்கப்பட்டன. ஒரு சில நாட்களில் அவளுக்கு பலர் ஆச்சர்யமான

மாற்றங்களைப் பார்த்தனர். அவளின் உடல் வலிமை பெற்றது, பரிதாபம் குறைந்தது, காயம் ஆறிவிட்டது.

இந்த நிகழ்வும் கதிருக்குத் தான் மருத்துவம் என்பதன் உண்மையான சக்தி என்ன என்பதை நினைவூட்டியது. அது ஒரு திறம்பட்ட மருந்து அல்லது ஒரு கருவி இல்லாமல், மருத்துவ மனப்பான்மை, அக்கறை, மனிதரின் வாழ்க்கைக்கு அர்த்தம் கொடுக்குமாறு நோக்கம் கொண்டது என்பது அவருக்கு தெளிவாக வந்தது.

அந்த நாள் முதல், கதிர் தனது மருத்துவப் பயணத்தை அப்படியே தொடர்ந்தார். அவர் கையாளும் நோய்களை, மருந்துகளை மற்றும் சிகிச்சைகளை, அவர் நோயாளிகளின் வாழ்க்கையில் சிறந்த மாற்றத்தை ஏற்படுத்துவதற்கான ஒரு பணியாகப் பார்த்தார்.

" இந்த கதையின் நீதி நாம் அறிவது மருத்துவம் என்பது வெறும் மருந்துகளை அளிப்பதோ அறிகுறிகளை சரிசெய்வதோ அல்ல. அது உண்மையில் மனிதர்களின் வாழ்க்கையை மாற்றுவது, எதிர்காலத்தை பாதுகாப்பது".

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फार्मेसी की कहानी

दुनिया के सबसे पुराने ज्ञात नुस्खे मेसोपोटामिया में मिट्टी की पट्टिका पर वर्णित किए गए थे, लगभग 2400 ई.पू. इस सुमेरियन क्यूनिफॉर्म दस्तावेज में पुल्टिस, मलहम और धोने के तरीके बताए गए हैं। सरसों, अंजीर, लोहबान, चमगादड़ की बीट, कछुआ के खोल का पाउडर, नदी की गाद, साँप की खाल और "गाय के पेट से बाल" सहित सामग्री को शराब, बीयर या दूध में घोल दिया जाता था।

मिश्रित दवा का सबसे पहला ज्ञात रिकॉर्ड सुश्रुत में पाया जाता है, जो शल्य चिकित्सा पर एक शास्त्रीय संस्कृत ग्रंथ और आयुर्वेद - या भारतीय पारंपरिक चिकित्सा के तीन मूलभूत ग्रंथों में से एक है - जो 6 वीं शताब्दी ईसा पूर्व का है।

"स्वास्थ्य को सशक्त बनाना,
एक समय में एक नुस्खा।"

THE STORY OF PHARMACY

The world's oldest known prescriptions were recorded on a clay tablet in Mesopotamia (modern-day Iraq), ca. 2400 BC. This Sumerian cuneiform document describes methods for making poultices, salves and washes. The ingredients, including mustard, fig, myrrh, bat droppings, turtle shell powder, river silt, snakeskins and "hair from the stomach of a cow," were dissolved into wine, beer or milk.

The earliest known record of a compounded medicine is found in the Sushrata Samhita, a classical Sanskrit text on surgery and one of three foundational texts of Ayurveda or Indian traditional medicine that dates as early as the 6th century BC.

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மலேரியா

"கொசுவால் பரவும் நோய்"

மலேரியா என்பது நோய் பரப்பி அல்லது நோய்க்காவி வாயிலாக பரவும் தொற்றுப்பண்புடைய ஒரு தொற்றுநோயாகும். இது முதற்கலவுற ஒட்டுண்ணியின் மூலம் ஏற்படுகிறது. அமெரிக்கா, ஆசியா, மற்றும் ஆப்பிரிக்கா ஆகிய பகுதிகளையும் சேர்ந்த வெப்ப வலயம் சார்ந்த மற்றும் ஆப்பிரிக்கா ஆகிய பகுதிகளையும் சேர்ந்த மித வெப்ப மண்டல பிரதேசங்களிலும் இது பரவலாக காணப்படுகிறது. ஒவ்வொரு ஆண்டும் தோராயமாக 350 முதல் 500 மில்லியன் வரையிலான மக்கள் மலேரியா நோயினால் பாதிக்கப்படுகிறார்கள். அவற்றில் ஒன்றிலிருந்து மூன்று மில்லியன் மக்கள் இந்த நோயினால் இறக்கிறார்கள். இந்த நோயின் காரணமாக இறப்பவர்களின் அதிகமானவர் சப்- சஹாரா ஆப்பிரிக்காவில் இருக்கும் இளம் குழந்தைகளாவர். மலேரியா தொடர்பாக ஏற்படும் இறப்புகளில் 90 சதவீத இறப்பு சப் -சஹாரா ஆப்பிரிக்காவில் நிகழ்கிறது. மலேரியா பொதுவாக வறுமையுடன் தொடர்புள்ளதாக இருக்கிறது. ஆனால் இது வறுமைக்கு காரணமாகவும், பொருளாதார முன்னேற்றத்திற்கு மிகப்பெரிய தடையாகவும் இருக்கிறது.

வழக்கமாக நோய்க்காரியான பெண் அனாஃபிலிஸ்
கொச அல்லது நுளம்பு மனிதனைக் கடிப்பதன்
மூலம் மலேரியா நோய் ஏற்படுகிறது. அனாஃபிலஸ்
கொசுக்களினால் மட்டுமே மலேரியா நோய்
மற்றவர்களுக்கு பரவுகிறது. நோய்த்தொற்றுக்கு
ஏற்பட்ட ஒரு நபரிடமிருந்து இரத்த உணவை
உறிஞ்சுகின்றபோது அவை அவர்களிடமிருந்து
நோய்க்காரணியாக பிளாஸ்மோடியம் ஒட்டுண்ணியை
பெற்று வேறொரு நபரில் இரத்த உணவை உண்ணும்
போது அவருக்கு அந்நோயை கடத்துகிறது.
நோய்த் தொற்றுடைய கொச ஒரு நபரைக் கடிக்கும்
போது சிறிய அளவு இரத்தத்தை எடுத்துக்
கொள்கிறது. இந்த இரத்தத்தில் நுண்ணிய மலேரியா
ஒட்டுண்ணிகள் இருக்கின்றன. சுமார் ஒரு
வாரத்திற்கு பிறகு அந்தக் கொச அதனுடைய
அடுத்த இரத்த உணவை எடுத்துக்கொள்வதற்கு
மற்றொரு நபரைக் கடிக்கும் போது இந்த
ஒட்டுண்ணிகள் கொசுவின் உமிழ் நீரில்
கலந்து அந்த நபருக்கு செலுத்தப்படுகிறது.
இந்த ஒட்டுண்ணிகள் இந்த சிவப்பணுக்களில்
பெருக்கமடைந்து ஏற்படுத்தும் அதிகநிகளவான
இரத்த சோகை (தலை லேசாக இருப்பது)

மிகவும் பொதுவான தொற்று நோய்களில் மலேரியாவும் ஒன்றாகும். இது பொதுச்சுகாதாரத்திற்கு மிக பெரிய பிரச்சனையாக இருக்கிறது. பேரினம் பிளாஸ்மோடியம் (மலேரியா நோய்க்காரணி எனும் முதற்கலவுரு ஒட்டுண்ணிகளினால் இந்த நோய் ஏற்படுகிறது. பிளாஸ்மோடியம் ஒட்டுண்ணி ஐந்து வகை இனங்கள் மனிதர்களுக்கு நோய்த்தொற்றை ஏற்படுத்தலாம். நோயின் மிகவும் கடுமையான தன்மை பிளாஸ்மோடியம் ஃபால்சிபாரத்தினால் ஏற்படுத்தப் படுகிறது. பிளாஸ்மோடியம் விவாக்ஸ், பிளாஸ்மோடியம் ஓவலே, மற்றும் பிளாஸ்மோடியம் மலேரியா ஆகியவற்றின் காரணத்தினால் ஏற்படும் மலேரியா மனிதர்களுக்கு மிகவும் லேசான நோய்த் தாக்கத்தையே ஏற்படுத்துகிறது. இதற்கு பொதுவாக கொல்லும் தன்மை இல்லை. ஐந்தாவது இனமான பிளாஸ்மோடியம் நோலெசி, குட்டை வால் குரங்குகளுக்கு மலேரியா நோய் தாக்கத்தை ஏற்படுத்துகிறது. இது மனிதர்களுக்கு நோய்த் தொற்றை ஏற்படுத்தலாம். மனிதர்களுக்கு நோய் விளைவிக்கும் தன்மையைக் கொண்ட இந்த வகை பிளாஸ்மோடியம் இனங்கள் வழக்கமாக மலேரியா ஒட்டுண்ணிகள் எனக் கருதப்படுகின்றன.

போல் உணருதல், சுவாசித்தலின் சிரமம். ஏற்படுதல், இதயத் துடிப்பு மிகைப்பு, இன்னும் பல மற்ற பொது அறிகுறிகளாவன: காய்ச்சல், கடுங்குளிர், குமட்டல், ஃப்ளூ போன்ற உடல் நலக் குறைவு மற்றும் சில நோயாளிகளுக்கு நோய் தீவிரம் அடைவதன் காரணத்தினால் ஆழ்மயக்கம் (கோமா) மற்றும் மரணம் நேரிடலாம். கொசு வலைகள் மற்றும் பூச்சி விலக்கிகள் ஆகியவற்றின் மூலம் கொசு கடிக்காமல் தடுக்கலாம் அல்லது வீடுகளுக்கு உள்ளே பூச்சிக்கொல்லி மருந்துகளை தெளித்தல் மற்றும் கொசுக்கள் முட்டையிடும் தேங்கிய தண்ணீரை வடித்து அகற்றுதல் போன்ற கொசுக் கட்டுப்பாடு நடவடிக்கைகள் மூலம் மலேரியா நோய்தொற்று பரவுதலை குறைக்கலாம். பல வித்தியாசமான முறைகளின் மூலம் மலேரியா தடுப்புமருந்து கண்டுபிடிப்பதற்கு முயற்சிகள் மேற்கொள்ளப்பட்டன. அவை சிறிது வெற்றியும் கொடுத்தது. கொசுக்களுக்கு ஒட்டுண்ணியை எதிர்க்கும் சக்தியை உருவாக்குவதற்காக கொசுக்களுக்கு மரபியல் ரீதியாக சில மாற்றங்கள் செய்யப்படுவதும் கருத்தில் கொள்ளப்பட்டன.

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II B.Tech (PT)

கோவிட்-19

கோவிட்-19 பெருந்தொற்று எனப்படுவது கடுமையான கொரோனா வைரஸ் 2 (SARS-CoV-2) என்ற தீநுண்மி காரணமாக ஏற்படும் கொரோனா வைரஸ் நோயின் பெருந்தொற்றாகும். இந்த தொற்று முதன்முதலில் சீனாவின் வுகானில் 2019 டிசம்பரில் அடையாளம் காணப்பட்டது. ஜனவரி 30 அன்று கோவிட்-19 தொற்றை உலக அளவில் பொது சுகாதார அவசர நிலையாகவும் மார்ச் 11 அன்று ஒரு பெருந்தொற்றாகவும் உலக சுகாதார அமைப்பு அறிவித்தது. பிப்ரவரி 2022 அன்று நிலவரப்படி, 188 நாடுகளில், 24,77,40,899 பேர் பாதிக்கப்பட்டனர் 50,17,139 பேர் உயிரிழந்துள்ளனர். இதில் 30,18,149 பேர் மீண்டும் வந்துள்ளனர். இந்த வைரஸ் பெரும்பாலும் நபர்களிடையே நெருங்கிய தொடர்பின் போது இருமல், தும்மல், மற்றும் பேசுவது ஆகியவற்றின் மூலம் உமிழ்நீர் சிறிய நீர்த்துளிகள் வழியாகப் பரவுகிறது. இந்த நீர்த்துளிகள் அடிக்கடி பயணிப்பதை விட தரையில் அல்லது மேற்பரப்பில் விழுகின்றன. சில நேரங்களில் தொற்றுள்ள பரப்பை தொட்டு, பின்னர் தங்களின் முகத்தை தொடுவதன் மூலமாகவும் நபர்களுக்கிடை தொற்று ஏற்படக் கூடும். அறிகுறிகள் தொற்றி முதல் நாட்களில் தொற்றுபரவல் மிகமாக இருக்கும். சிலரும் அறிகுறிகள் தோன்றுவதற்கு முன்பும். அறிகுறிகளைக்

காட்டாத மக்களிடமிருந்தும் தொற்று பரவ சாத்தியமுள்ளது. பொதுவான அறிகுறிகளில் காய்ச்சல், இருமல், சோர்வு, மூச்சு திணறல் மற்றும் வாசனை உணர்வு இழப்பு ஆகியவை அடங்கும். நோய் தீவிரமடையும் போது நிமோனியா மற்றும் கடுமையான மூச்சுத்திணறல் ஆகியவை ஏற்படும். அறிகுறிகள் வெளிப்படும் கால இடைவெளியானது முதல் ஐந்து நாட்கள் வரை இருக்கும். சில நேரங்களில் இரண்டு முதல் பதினான்கு நாட்கள் வரைகூட இருக்கலாம். இத்தொற்று நோய்க்கு அறியப்பட்ட தடுப்பூசி அல்லது குறிப்பிட்ட வைரஸ் தடுப்பு சிகிச்சை எதுவும் இல்லை. அறிகுறி குறைப்பு சிகிச்சை எதுவும் இல்லை. அறிகுறி சிகிச்சை மற்றும் ஆதரவு சிகிச்சை ஆகியவையே முதன்மை சிகிச்சைகளாக உள்ளன. பரிந்துரைக்கப்பட்ட தடுப்பு நடவடிக்கைகளில் கைகழுவுதல், இருமும் போது ஒருவர் தம் வாயை மூடுவது, மற்றவர்களிடமிருந்து தூரத்தை பராமரித்தல், பொது இடங்களில் முகக்கவசம் அணிவது, சுய தனிமைப்படுத்தல் ஆகியவை அடங்கும். ஊரடங்கால் மாசுபடுத்திகள் மற்றும் பசுமைக்குடில் வாயுக்கள் ஆகியவற்றின் வெளிப்பாடு குறைந்தது. 177 நாடுகளில் பள்ளிகள், பல்கலைக் கழகங்கள் மற்றும் கல்லூரிகள் நாடு முழுவதும் அல்லது உள்ளூர் அடிப்படையில் மூடப்பட்டுள்ளன, இது உலக மாணவர் தொகையில் சுமார் 98.6 விழுக்காட்டினரை பாதித்துள்ளது. சமூக ஊடகங்கள் ஆகியவற்றின் மூலம் வைரஸ் பற்றிய தவறான தகவல்கள் பரப்பப்பட்டுள்ளன. சீன மக்களுக்கு எதிராகவும் சீனர்கள் அல்லது அதிக நோய்த்தொற்று விகிதங்கள் உள்ள பகுதியிலிருந்து வந்தவர்களாகக் கருதப்படுவோர்களுக்கும் எதிராக இனவெறி மற்றும் பாகுபாடு காட்டப்படும் சம்பவங்கள் நடந்துள்ளன.

GOWRI K
II B.Tech (PT)

TIMELESS REMEDIES

மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உணின்.(942)

No need of medicine to heal your body's pain,
If, what you ate before digested well, you eat again.

Explanation:

No medicine is necessary for him who eats after assuring (himself) that what he has (already) eaten has been digested.

A short story:

THE UNWANTED MEDICINE

Alisha had been bedridden for weeks, suffering from a chronic illness. His family had tried every possible treatment, but nothing seemed to work. One day, a wise old man visited Alisha and offered him a mysterious medicine. "This will cure you," the old man said, "but you must take it willingly." Alisha was skeptical, but desperate for a cure. He drank the medicine, and to his surprise, he began to feel better. However, as he recovered, Alisha realized that the medicine had an unexpected side effect: it made him see the world in a new light. He no longer took things for granted and appreciated the small joys in life. Alisha's family was overjoyed to see him recover, but they were also puzzled by the change in his behavior. Alisha had become more humble and kind, and he credited the medicine for this transformation. As Alisha looked back on his experience, he realized that the medicine had been more than just a cure for his physical ailment. It had also healed his soul, teaching him valuable lessons about gratitude and compassion. The unwanted medicine had become a blessing in disguise, and Alisha was forever grateful for its unexpected gift.

SURENDHAR M
II B.Tech (PT)

PHARMA RELATED THIRUKURAL

மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா எண்ணிய மூன்று

Meaning

"Marundhen vendedaam" suggests that something unnecessary, like medicine, should not be sought unless required. "Yaakkai arundhiyathu" implies that the body doesn't need something unnatural or excessive

மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உணின்.

Meaning

Together, it conveys that both excess and deficiency in certain aspects (possibly related to food, actions, or thoughts) can lead to harm, while balance is key. The "three things considered as the foundation of growth" likely point to vital principles or elements that should be managed wisely to ensure health and wellbeing.

DEEPAK G
II B.Tech (PT)

PHARMA RELATED THIRUKURAL

அற்றால் அறவறிந்து உண்க அஃதுடம்பு
பெற்றான் நெடிதுய்க்கும் ஆறு.

Meaning

When a person gains knowledge (A), they should act according to it, as that leads to long-term benefits and satisfaction.The phrase implies that the body is a temporary vessel, but knowledge and virtuous living ensure lasting value.

அற்றது அறிந்து கடைப்பிடித்து
மாறல்ல துய்க்க துவரப் பசித்து

Meaning

This line speaks about the importance of adhering to the path of knowledge and virtue. It advises against abandoning the learned way for temporary pleasures or distractions. The line can be interpreted as a caution against being misled by fleeting, indulgent desires that do not contribute to long-lasting happiness or well-being.

LOGESH T
II B.Tech (PT)

மாறுபாடு இல்லாத உண்டி மறுத்துண்ணின்
ஊறுபாடு இல்லை உயிர்க்கு.

Meaning:
No harm to life if what is eaten Does not include disagreeable food

இழிவறிந்து உண்பான்கண் இன்பம்போல் நிற்கும்
கழிபேர் இரையான்கண் நோய்.

Meaning:
As pleasure dwells with a moderate eater, So is disease with a voracious glutton.

தீயள வன்றித் தெரியான் பெரிதுண்ணின்
நோயள வின்றிப் படும்.

Meaning:
Unlimited eating beyond one's measure Leads to unlimited number of ills.

உற்றான் அளவும் பிணியளவும் காலமும்
கற்றான் கருதிச் செயல்.

Meaning:
A doctor should have the measure of the patient, Disease and its stage, and treat.

உற்றவன் தீர்ப்பான் மருந்துழைச் செல்வானென்று
அப்பால் நாற்கூற்றே மருந்து.

Meaning:
Any treatment involves these four orders: The patient, doctor,Medicine and nurse.

ABIKOIL V
IV B.Tech (PT)

ADVANCEMENT IN PHARMA

Advancements in pharmaceutical medicine include new technologies, therapies, and manufacturing methods. These advancements are improving the speed, cost, and efficiency of drug development and administration

Personalized medicine

Doctors use a patient's genetic information, lifestyle, and medical history to create a customized treatment plan.

Additive manufacturing

Three-dimensional printing allows for the creation of drug products with specific characteristics, such as geometry, porosity, and API composition.

Continuous manufacturing

The pharmaceutical industry is adapting to produce smaller batches for precision medicine.

Real-time monitoring and reporting

The use of real-world data and AI technologies is improving drug development, clinical research, and drug safety.

Artificial intelligence

AI is being used to improve medicinal chemistry, drug discovery, and synthesis planning.

Patient involvement

Pharmaceutical companies are creating patient advisory boards to involve patients in the development and distribution of products.

Data integrity

Pharmaceutical companies are taking steps to protect sensitive information related to drug formulations, research, and development.

Regenerative Medicine

Innovations in stem cell therapies and tissue engineering are offering new treatments for previously untreatable conditions.

UDHAYAVANAN K
IV B.Tech (PT)

ADVANCEMENTS IN MEDICINE

The Journey of a Lifetime: Saving Lives through Innovation

In the early 2000s, Sarah's mother was diagnosed with breast cancer. The treatment options available at the time were limited, and the prognosis was grim. Sarah's mother underwent chemotherapy, but the side effects were severe, and the cancer eventually relapsed. This experience sparked a fire within Sarah, driving her to pursue a career in pharmaceutical research. She wanted to contribute to the development of innovative treatments that could save lives and improve patient outcomes.

The Rise of Immunotherapy

Sarah joined a team of researchers at a leading pharmaceutical company, where they were working on a novel immunotherapy approach. This new treatment aimed to harness the power of the immune system to fight cancer. The team faced numerous challenges, but their dedication and perseverance paid off. After years of research and clinical trials, their immunotherapy treatment received FDA approval.

A New Era in Cancer Treatment

The approval of this immunotherapy treatment marked the beginning of a new era in cancer treatment. Patients who had exhausted all other options now had a new beacon of hope. Sarah's mother, who had relapsed multiple times, was among the first patients to receive this treatment. To everyone's surprise, her cancer went into remission, and she was able to spend precious time with her loved ones.

Expanding Frontiers

The success of this immunotherapy treatment paved the way for further innovation. Researchers began exploring its potential in treating other types of cancer, as well as autoimmune diseases. Sarah's team continued to push the boundaries of pharma research, developing new treatments that targeted specific genetic mutations. Their work led to the discovery of novel biomarkers, enabling earlier diagnosis and more effective treatment.

The Future of Medicine

As Sarah looked back on her journey, she realized that the advancements in pharma medicine had transformed the landscape of healthcare. Patients who had once been given little hope now had access to life-saving treatments.

The pharma frontiers continued to expand, driven by the tireless efforts of researchers, scientists, and healthcare professionals. As they pushed the boundaries of innovation, they brought new hope to patients and families around the world. Sarah's story serves as a testament to the power of human ingenuity and the impact of pharma research on people's lives. As we continue to explore the frontiers of medicine, we may uncover even more groundbreaking treatments, improving patient outcomes and saving countless lives.

JOYAL MATHEW J
II B.Tech (PT)

DEPARTMENT DIARY

NPTEL

swayam

CERTIFICATE

OF APPRECIATION

is awarded to

TOP PERFORMING MENTOR

ADAIKALA SELVAN

PAAVAI ENGINEERING COLLEGE

NAMAKKAL, TAMIL NADU

in recognition of his/her role as mentor for the NPTEL Online Certification course

WILD LIFE ECOLOGY

JUL - DEC 2024

Mentees Enrolled	Mentees Present	Score (in %)	Certified (Score in %)				
		<40	40-59	60-74	75-89	>=90	Toppers
13	9	1	3	2	1	2	0

PROF. ANDREW THANGARAJ
NPTEL Coordinator
IIT Madras

Adaikala Selvan, Paavai Engineering College, Namakkal, Tamil Nadu. The certificate recognizes his role as a Top Performing Mentor for the NPTEL Online Certification Course titled "Wild Life Ecology" for the period July - December 2024.

Mentees Enrolled	Mentees Present	Score (in %)	Certified (Score in %)				
		<40	40-59	60-74	75-89	>=90	Toppers
24	21	2	5	4	3	7	0

Certificate of Appreciation awarded to Karthih M G from Paavai Engineering College, Namakkal, Tamil Nadu. The certificate recognizes his role as a Top Performing Mentor for the NPTEL Online Certification Course titled "Wild Life Ecology" for the period July - December 2024.

ARUNAI
Engineering College
TIRUVANNAMALAI

7th International Conference on
BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES
29 - 31 January 2025

In association with

BEST 2025

CERTIFICATE OF APPRECIATION

We express our sincere gratitude to

Mr. G. Adaikala Selvan

Assistant Professor, Department Of Pharmaceutical Technology
Paavai Engineering College, Namakkal

for his valuable support as Session chair in the 7th International Conference on Bioenergy, Environment and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Tiruvannamalai, Tamilnadu, India.

Er.E.V.Kumaran, Vice Chairman
Dr.R. Sathiyaseelan, Registrar
Dr.C. Elanchezhian, Principal
Prof. R. Praveen Kumar, Head - BT

Mr. G. Adaikala Selvan (Assistant Professor, Department of Pharmaceutical Technology, Paavai Engineering College, Namakkal) Certificate of Appreciation from Arunai Engineering College, Tiruvannamalai, for the 7th International Conference on Bioenergy, Environment, and Sustainable Technologies (BEST 2025), held from 29–31 January 2025. To express gratitude for his valuable support as a Session Chair during the conference.

PAAVAI ENGINEERING COLLEGE

(AUTONOMOUS)

NH-44,Paavai Nagar,Pachal,Namakkal-637018

ALUMNI GUEST LECTURE SERIES

Acadamic Year : 2024 - 25 **Lecture : 11**

Ms.C.Queen Santhoshini
Medical Coder
Optum Healthcare Private Limited
Chennai

Alumni
Paavai Engineering College
Pharmaceutical Technology
Batch 2018 - 2022

" Training Requirements for a Career in Medical Coding "

Date	:	27/01/2025 - Monday
Mode	:	Online
Time	:	9:30 AM to 11:30 AM
Link	:	https://shorturl.at/XrJzc

Ms.S.Ilakya	**Mr.S.Sathish**	**Dr.R.Praveen Cumar**	**Dr.M.Premkumar**
Alumni Coordinator	AAC Coordinator	Head - Pharmaceutical	Principal

PAAVAI ENGINEERING COLLEGE

AUTONOMOUS

NH-44, PAAVAI NAGAR, PACHAL, NAMAKKAL - 637 018.

INSTITUTION'S INNOVATION COUNCIL
(Ministry of Education Initiative)

ALUMNI GUEST LECTURE SERIES

Academic Year : 2024-25 | Lecture : 12

Mr.C. Vetrivel

Sales Officer

Sun Pharma Industry Limited

ALUMNI

Paavai Engineering College

Pharma , Batch 2018 - 2022

"Present and Future of Pharmaceutical Marketing"

Date : 28.01.2025 - Tuesday

Mode : Online

Time : 10.30 a.m. to 01.00 p.m.

Link : https://rb.gy/pen1f1

Ms.S.Ilakya	Mr.S.Sathish	Dr.R. Praveen Cumar	Dr.M.Premkumar
Alumni Coordinator	AAC Coordinator	Head - Pharma	Principal

Student Contributions

Research Findings: Students could present findings from ongoing research projects, such as innovations in drug formulation, novel drug delivery systems, or early-stage studies in biotechnology.

Technology in Pharma: Students might present research on emerging technologies like artificial intelligence, machine learning in drug discovery, or advancements in pharmaceutical manufacturing, showing how these innovations could reshape the future of the industry.

Faculty Contributions

In-depth Research: Faculty members could present more detailed research on cutting-edge technologies in the pharmaceutical field, such as nanomedicine, gene therapies, or the use of big data in pharmaceutical development.

Educational Perspective: Faculty could discuss the importance of equipping the next generation of pharmaceutical scientists with the necessary knowledge and skills, highlighting evolving trends in pharmaceutical education.

Format for Short Communications

Poster Presentations: Faculty and students could showcase posters summarizing their research and technological innovations, which could be viewed both in person or virtually.

Panel Discussions or Webinars: Faculty could moderate discussions involving students and industry professionals on emerging trends in pharmaceutical technology, allowing for an exchange of ideas and knowledge.

Themes and Topics for Short Communications

Personalized Medicine: Advances in pharmacogenomics and tailored treatments.

Sustainable Pharma: Innovations in reducing environmental impacts in the pharmaceutical industry.

AI & Drug Discovery: How artificial intelligence is transforming the process of drug development.

Benefits of Pharma Pulse for Students and Faculty

Skill Development: Students can hone their presentation and research communication skills, while faculty can refine their mentoring roles.

Inspiration and Collaboration: Sharing new ideas and innovations can inspire future collaborations between academia and industry, driving forward the advancement of pharmaceutical technologies.

JAMUNARANI R
IV B.Tech (PT)

STUDENTS ACHIEVERS

ARUNAI Engineering College
TIRUVANNAMALAI

7th International Conference on
BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES
29 - 31 January 2025

BEST 2025

CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms R.BHAVI. R
of PAAVAI ENGINEERING COLLEGE
has presented a paper/poster on the topic INNOVATIVE CALCIUM SUPPLEMENT SYRUP FOR TREATING HYPOCALCEMIA
in 7th International Conference on Bioenergy, Environment and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Tiruvannamalai, Tamilnadu,India.

Er.E.V.Kumaran Dr.R. Sathiyaseelan Dr.C. Elanchezhian Prof. R. Praveen Kumar

ARUNAI Engineering College
TIRUVANNAMALAI

7th International Conference on
BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES
29 - 31 January 2025

BEST 2025

CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms MOHAMED MUBAMEEL S
of PAAVAI ENGINEERING COLLEGE
has presented a paper/poster on the topic SYNERGISTIC HERBAL INCENSE CONE FOR MOSQUITO REPULSION
in 7th International Conference on Bioenergy, Environment and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Tiruvannamalai, Tamilnadu,India.

Er.E.V.Kumaran Dr.R. Sathiyaseelan Dr.C. Elanchezhian Prof. R. Praveen Kumar

ARUNAI Engineering College
TIRUVANNAMALAI

7th International Conference on
BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES
29 - 31 January 2025

BEST 2025

CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms ABILOL V
of PAAVAI ENGINEERING COLLEGE
has presented a paper/poster on the topic EXPLORING THE ANTI-UROLITHIASIS THERAPEUTICAL POTENTIAL OF BRYOPHYLLUM PINNATUM
in 7th International Conference on Bioenergy, Environment and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Tiruvannamalai, Tamilnadu,India.

Er.E.V.Kumaran Dr.R. Sathiyaseelan Dr.C. Elanchezhian Prof. R. Praveen Kumar

ARUNAI
Engineering College
TIRUVANNAMALAI

7th International Conference on
BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES
29 - 31 January 2025

BEST 2025

CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms GUGAN RAJ E
of PARVAI ENGINEERING COLLEGE
has presented a paper/poster on the topic GREEN SYNTHESIS OF Pd AND Cu NANOPARTICLES FROM POLIANTHES TUBEROSA FLOWERS
in 7th International Conference on Bioenergy, Environment and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Tiruvannamalai, Tamilnadu,India

Er.E.V.Kumaran Dr.R. Sathiyaseelan Dr.C. Elanchezhian Prof. R. Praveen Kumar

ARUNAI
Engineering College
TIRUVANNAMALAI

7th International Conference on
BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES
29 - 31 January 2025

In association with

BEST 2025

CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms D. MOHANAPRIYA
of PARVAI ENGINEERING COLLEGE
has presented a paper/poster on the topic GREEN SYNTHESIS OF Pd AND Cu NANOPARTICLES FROM POLIANTHES TUBEROSA FLOWERS
in 7th International Conference on Bioenergy, Environment and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Tiruvannamalai, Tamilnadu,India

Er.E.V.Kumaran Dr.R. Sathiyaseelan Dr.C. Elanchezhian Prof. R. Praveen Kumar

This certificate is from Arunai Engineering College, Tiruvannamalai, awarded for participation in the 7th International Conference on Bioenergy, Environment, and Sustainable Technologies (BEST 2025), held from 29–31 January 2025.

Nurture Program under the Skill Development & Entrepreneurship Training Program supported by the Technology Innovation Hub of IIT Delhi (IHFC), set up by the DST - Ministry of Science & Technology, Government of India.

Department of Pharmaceutical Technology students have been actively involved in TQI (Talent Quiz For India) to create socially responsible leaders in local communities. For which they have organised social awareness programs for holistic development.The volunteers from our department are Mr. Rahul (IV year,PT) and the following third year students,
Mr. Gokul Raj, Mr Dhanush Kumar, Mr. Ramana, Mr.Aswinth Ajay, Ms.Sathya Sri and Ms. Sivaranjani.

KNOW YOUR ALUMNI

JEGAN S
Junior Officer
Quality Control Malladi Drugs and Pharmaceutical Ltd.
NO.67 SIPCOT Industrial Complex, Ranipet - 632 403

Here's an alumni feedback:

"I'm Jegan, a proud alumnus of Paavai Engineering College. The college's rigorous curriculum and exceptional faculty prepared me well for my profession. Paavai's emphasis on practical learning helped me develop essential skills. I'm grateful for the opportunities I had here. Thank you, Paavai!"

SOWMIYA
Junior Executive, Quality Control
Intermed Laboratories
No. 4, G.K.Industrial Estate, Arcot Road, Poru,
Chennai , Tamil Nadu - 600 116

The college provided me with a fantastic learning experience, and I'm grateful for the knowledge and skills I gained during my time there. The faculty were highly supportive, and the infrastructure was top-notch. Overall, I'm proud to be an alumnus of this esteemed institution, and I'm confident that it will continue to nurture talented individuals who make a positive impact in their chosen field - Sowmiya

DISEASE TO AWARE

ROTAVIRUS

Rotavirus is a highly contagious virus that infects nearly all young children. It is one of the most common causes of severe diarrhea in the US. Before there was a rotavirus vaccine, almost all US children were infected with rotavirus before their 5th birthday. Each year in the US, rotavirus was responsible for:

More than 400,000 visits to healthcare professionals' offices

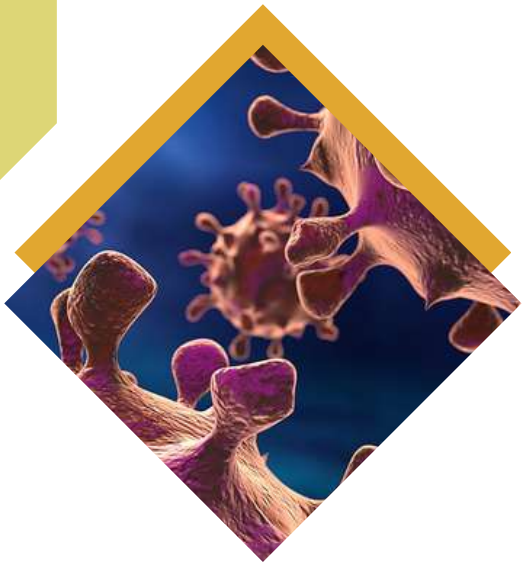
More than 200,000 emergency room visits

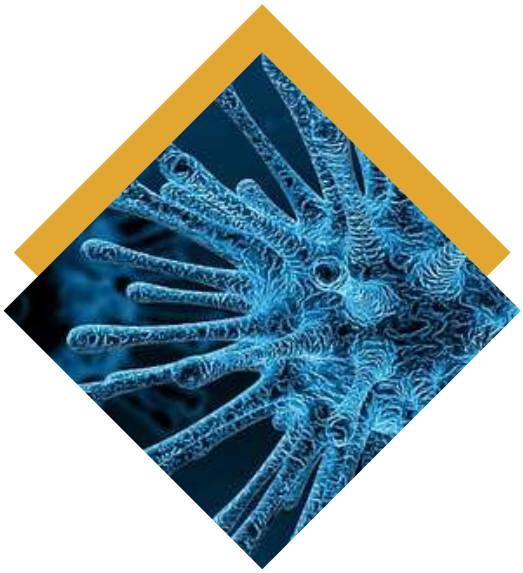
Up to 70,000 hospitalizations

20-60 deaths

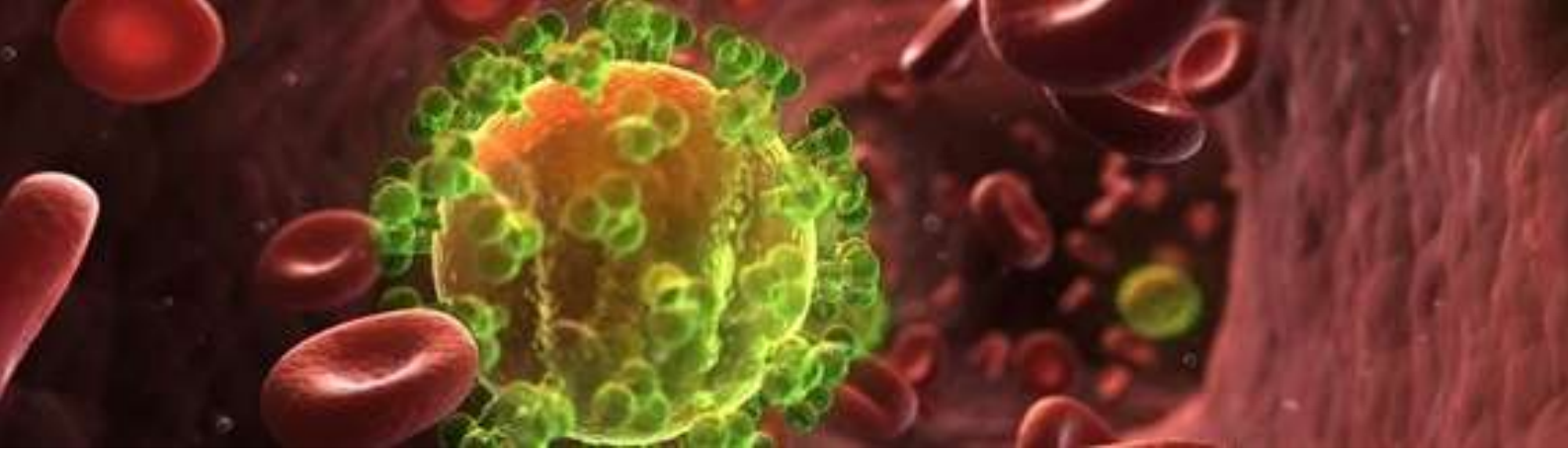
Awareness:

Getting your child vaccinated is the best way to help protect against rotavirus disease. There are 2 rotavirus vaccines currently licensed for infants in the US. Children should get their 1st dose of rotavirus vaccine before age 15 weeks and complete all doses before age 8 months. There are no specific drugs to treat rotavirus infection. To relieve symptoms and prevent dehydration, it's important to drink plenty of fluids, such as over-the-counter rehydration solutions that you can find in drug stores. Severely dehydrated patients may need to be hospitalized so they can receive fluids through their veins.





NANDHA KUMAR V
II B.Tech (PT)



Cardiovascular Disease (Heart Disease)

Prevention: Regular exercise, healthy diet, maintaining a healthy weight, and avoiding smoking.

Minimize Progression: Monitoring cholesterol and blood pressure, managing stress, and adhering to prescribed medications if needed.

Chronic Respiratory Diseases (COPD, Asthma)

Prevention: Avoid smoking and exposure to lung irritants.

Minimize Progression: Proper medication use, avoiding triggers, and regular monitoring of lung function can help manage the disease.

Cancer (e.g., Breast, Colon, Skin)

Prevention: Healthy lifestyle choices like not smoking, avoiding excessive sun exposure, eating a nutritious diet, and regular screenings.

Minimize Progression: Early detection through screening, following treatment protocols, and lifestyle changes (like improving diet, exercise, and reducing stress).

Alzheimer's Disease and Dementia

Prevention: Engaging in cognitive exercises, maintaining physical activity, and managing vascular health (blood pressure, cholesterol, etc.).

Minimize Progression: Medication, creating a supportive environment, and social engagement can slow decline.

Hypertension (High Blood Pressure)

Prevention: A healthy diet, regular exercise, and avoiding excessive alcohol and smoking.

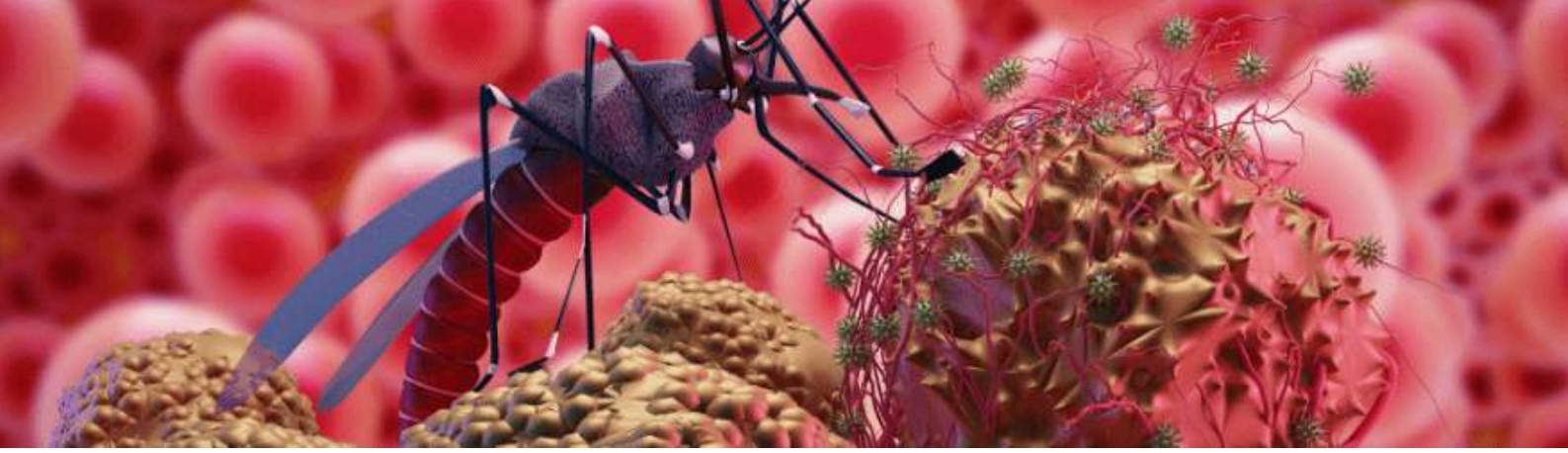
Minimize Progression: Regular monitoring, medication, and lifestyle modifications.

HIV/AIDS

Prevention: Safe practices (e.g., using protection during sexual activity), regular testing, and education.

Minimize Progression: Adherence to antiretroviral therapy (ART) can slow or prevent disease progression.

JAMUNARANI R
IV B.Tech (PT)



ZIKA VIRUS

Zika virus disease is caused by a virus transmitted primarily by Aedes mosquitoes. Zika can be transmitted by pregnant women to developing babies, and infection during pregnancy can cause microcephaly and other serious birth defects. Pregnant women who develop symptoms of Zika virus infection should be closely monitored by a healthcare professional.

Awareness:

1. **Mosquito control**: Eliminate standing water around homes to prevent mosquito breeding.
2. **Wear protective clothing**: Wear long-sleeved shirts, long pants, and socks when outdoors.
3. **Use insect repellent**: Apply insect repellents containing DEET, picaridin, or oil of lemon eucalyptus.
4. **Install window screens**: Ensure windows and doors have proper screens to keep mosquitoes out.
5. **Avoid travel**: Pregnant women should avoid traveling to areas with Zika virus transmission.

Treatment:

1. **Rest and hydration**: Stay hydrated and rest to help the body recover.
2. **Pain management**: Take over-the-counter pain medications like acetaminophen or ibuprofen.
3. **Antipyretics**: Use antipyretics to reduce fever. Supportive care: Receive supportive care, such as hospitalization, in severe cases

JOYAL MATHEW J
II B.Tech (PT)

Automatic Maintenance System Using Wireless Sensor Node for Productive Aquaculture

G. Jegan, M. Masilamani Selvam, I. Rexiline Sheeba, P. Kavipriya, R. Rishav Varma, and Praveen Selvam

Abstract Aquaculture is trending toward intense controlled environment production, which increases productivity but increases the danger of catastrophic loss from equipment or management failures. To optimize potential, intense production facility managers require reliable, real-time system status and performance information. This study designed and implemented low-cost short-range wireless sensor network modules for Productive Aquaculture to monitor and maintain environmental factors such as the toxic or harmful level of water used for aquaculture by using different types of sensors and collecting information through a wireless mess network. The results demonstrate that the proposed method optimizes the aquaculture system's capacity for monitoring, control, and recording. Aquaculture environments with a high risk of fish mortality may be made safer via constant monitoring of the most important parameters. The outcome is a reduction in labor expenses and energy consumption with an increase in consumer safety, consumer trust, and economic benefit from aquaculture.

Keywords IoT · Aquaculture · Environmental factors · Wireless sensor network · Real time monitoring and control

Jegan, G., Masilamani Selvam, M., Rexiline Sheeba, I., Kavipriya, P., Varma, R.R., Selvam, P. (2025). Automatic Maintenance System Using Wireless Sensor Node for Productive Aquaculture. In: Tripathi, A., Soni, A., Tiwari, M., Swarnkar, A., Sahariya, J. (eds) Intelligent Computing Techniques for Smart Energy Systems. ICTSES 2023. Lecture Notes in Electrical Engineering, vol 1276. Springer, Singapore.

DOI: https://doi.org/10.1007/978-981-97-8464-6_19

ALAGAPPA UNIVERSITY

SCHOOL OF MARINE SCIENCES

DEPARTMENT OF OCEANOGRAPHY AND COASTAL AREA STUDIES

Satellite Campus, Thondi

This is to certify that Mr./Ms./Dr. M. Masilamani Selvam Professor, Paavai Engineering College, Namakkal has delivered an Invited talk in the International Conference on "Blue Economy - 2025" organised by School of Marine Sciences, Department of Oceanography and Coastal Area Studies, Alagappa University, Satellite Campus, Thondi, Tamil Nadu, on 20-22 January, 2025.

Prof. S. RAVIKUMAR
Convener cum Organizing Secretary

Dr. A. SENTHILRAJAN
Registrar

January 20-22, 2025, Dr. M. Masilamani Selvam Delivered an invited talk on “Sustainable Aquaculture: A Key to Blue Economy” at the "International Conference on Blue Economy-2025" organized by the School of Marine Sciences, Department of Oceanography and Coastal Area Studies, Algappa University, Satellite campus, Thondi, Tamil Nadu.

PROF. DHANAPALAN COLLEGE OF SCIENCE & MANAGEMENT

National Conference On

"One Health Approach in Preventing Epidemics and Pandemics"

Certificate of Appreciation

This is to certify that Mr./Ms. DR. M. MASILAMANI SELVAM , PROFESSOR of PAAVAI ENGINEERING COLLEGE has participated and delivered an invited talk on LESSONS LEARNED FROM COVID-19 PANDEMIC in the National Conference on "One Health Approach in Preventing Epidemics and Pandemics" held on 29th January 2025 at Prof. Dhanapalan College of Science and Management, Chennai.

ORGANISING SECRETARY	CO-CONVENER	CONVENER
Dr. Divya Sasitharan	Prof. Dr. S. Gurusamy	Tmt. Sridevi Pugalendhi
Head(i/c), Department of Microbiology	Principal (i/c)	Director

On January 29, 2025, Dr.M.Masilamani Selvam, Delivered an invited talk on “Lessons Learned from the COVID-19 pandemic” at the National Conference on "One Health Approach in Preventing Epidemics and Pandemics" organized by the Department of Microbiology at Prof. Dhanapalan College of Science and Management, Chennai, Tamil Nadu.

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PriMera Scientific Publications

Integrating Traditional, Contemporary, and Advanced Medicine in Healthcare

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Hariharan Harikrishnan*

Department of Pharmaceutical Technology, Paavai Engineering College, Autonomous, Tamil Nadu, India

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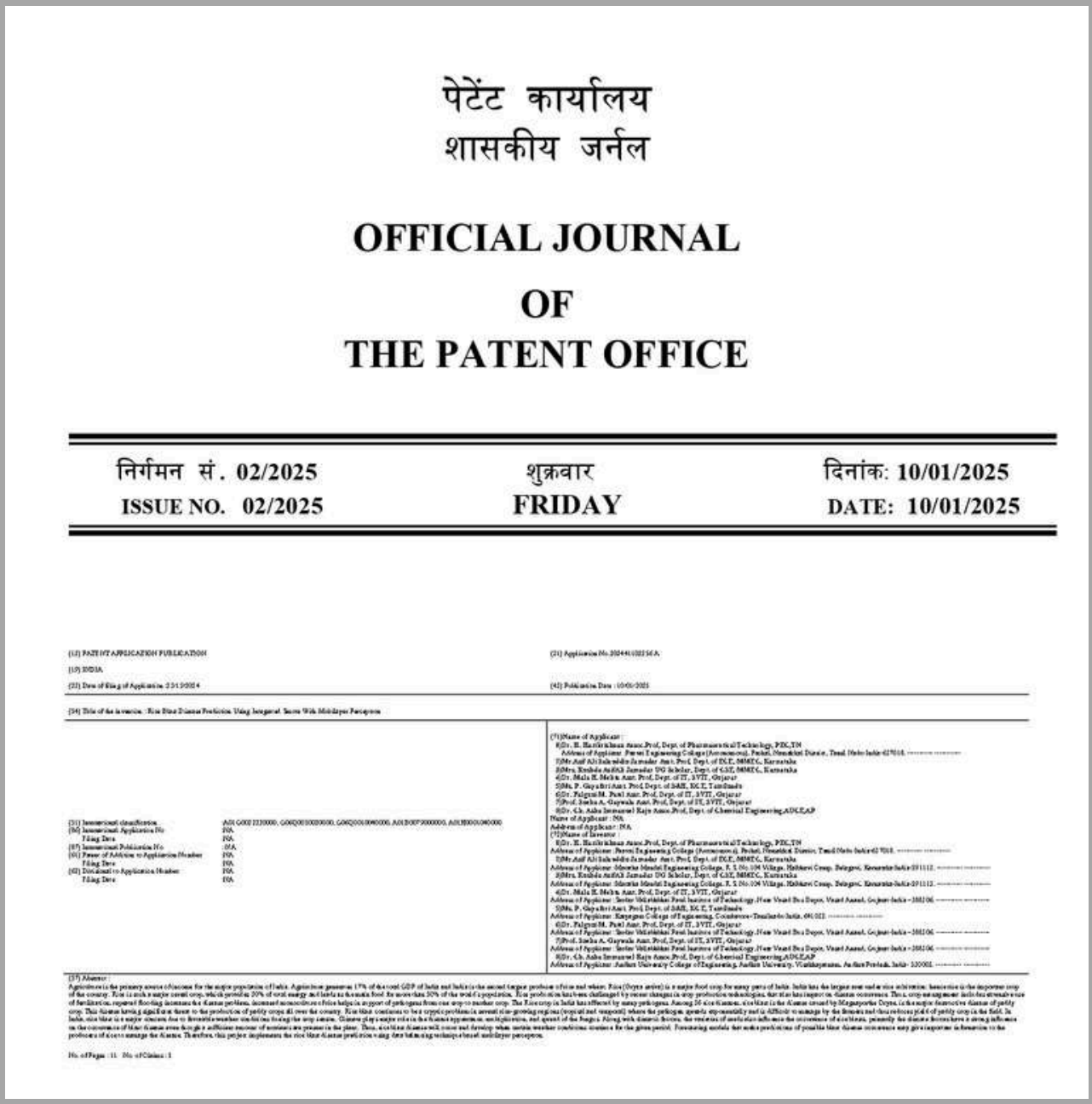
Abstract

Medicine has constantly advanced over periods, considered by cultural practices, scientific discoveries, and technological advancements. From the herbal remedies of traditional medicine to the innovative techniques of modern-day advanced medicine, healthcare approaches have dramatically transformed to address a rising range of diseases. Traditional medicine, with its roots in ancient healing practices, continues to be an essential part of global healthcare, specifically in many developing countries. Meanwhile, contemporary medicine represents the basis of modern healthcare, combining scientific research, pharmaceuticals, and surgical interventions to treat and manage diseases. In recent years, advanced medicine has emerged, driven by cutting-edge technologies such as gene therapy, regenerative medicine, enzyme replacement therapy and personalized treatments. These innovations have the potential to revolutionize healthcare by offering more precise, effective, and targeted therapies. Understanding the distinctions, advancements, and approaches within each system of medicine provides a comprehensive view of how healthcare is evolving in the modern world.

Keywords: Healthcare, contemporary medicine, traditional medicine, regenerative medicine, advanced medicine, pharmaceuticals

"Integrating Traditional, Contemporary, and Advanced Medicine in Healthcare", authored by Dr Hariharan Harikrishnan from the Department of Pharmaceutical Technology, Paavai Engineering College, Tamil Nadu, India. It was published in PriMera Scientific Medicine and Public Health, Volume 6, Issue 1, January 2025 (ISSN: 2833-5627).



पेटेंट कार्यालय
शासकीय जर्नल

OFFICIAL JOURNAL
OF
THE PATENT OFFICE

निर्गमन सं. 02/2025	शुक्रवार	दिनांक: 10/01/2025
ISSUE NO. 02/2025	FRIDAY	DATE: 10/01/2025

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(19) INDIA

(22) Date of filing of Application: 23/12/2024

(21) Application No.202441102156 A

(43) Publication Date : 10/01/2025

(54) Title of the invention : Rice Blast Disease Prediction Using Integrated Smote With Multilayer Perceptron

(51) International classification : A01G0022200000, G06Q0010000000, G06Q0010060000, A01B0079000000, A01H0001040000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

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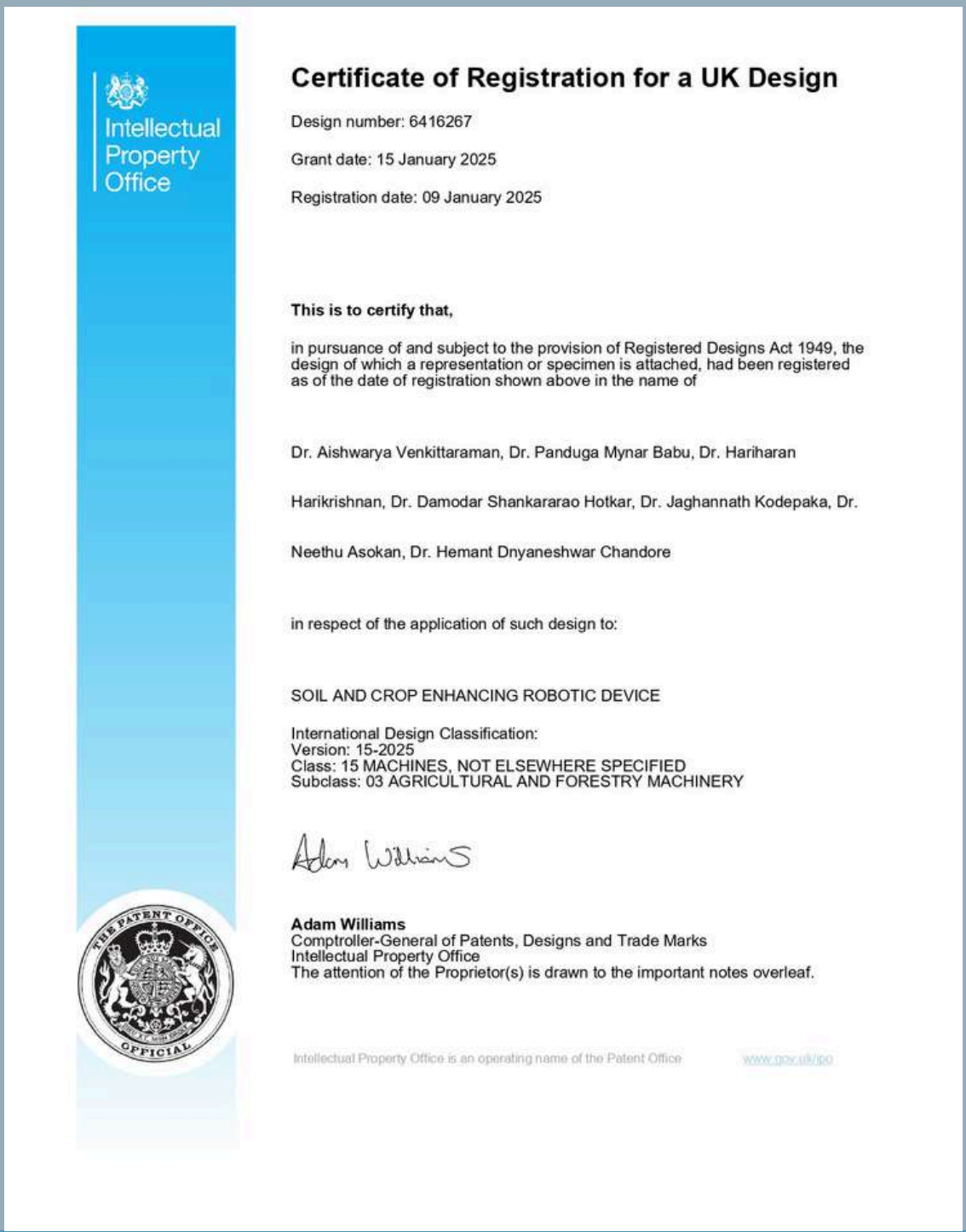
(57) Abstract :
Agriculture is the primary source of income for the major population of India. Agriculture generates 17% of the total GDP of India and India is the second largest producer of rice and wheat. Rice (Oryza sativa) is a major food crop for many parts of India. India has the largest area under rice cultivation. Innovation is the important crop of the country. Rice is such a major cereal crop, which provides 20% of total energy and fats to the main food for more than 50% of the world's population. Rice production has been challenged by various changes in crop production technologies, that also has impact on disease occurrence. Thus, crop management in India has obtainable ways of fertilization, repeated flood-ing increases the disease problems, increased nonconducive rice helps in support of pathogens from one crop-to another crop. The Rice crop in India has affected by many pathogens. Among 50 rice diseases, rice blast is the disease caused by Magnaporthe Oryzae, is the major destructive disease of paddy crop. This disease having significant threat to the production of paddy crops all over the country. Rice blast continues to be a cryptic problem in several rice-growing regions (tropical and temperate) where the pathogen spreads exponentially and is difficult to manage by the farmers and thus reduces yield of paddy crop in the field. In India, rice blast is a major concern due to favorable weather conditions for fueling the crop season. Climate play a major role in the disease appearance, contamination, and spread of the fungus. Along with climatic factors, the existence of multivariate influences the occurrence of rice blasts, presently the disease forecasters have a strong influence on the occurrence of blast disease even though sufficient amount of resistance are present in the plant. Thus, rice blast disease will cause real damage when certain weather conditions continue for the given period. Forecasting models that make predictions of possible blast disease occurrence may give important information to the producers of a way to manage the disease. Therefore, this project implements the rice blast disease prediction using data balancing technique based multilayer perceptron.

No. of Pages : 11 No. of Claims : 3

Dr. H. Harikrishnan published an Indian Utility patent titled "Rice Blast disease prediction using integrated smote with multilayer perceptron" on 10th January 2025.



Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6416267

Grant date: 15 January 2025

Registration date: 09 January 2025

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Aishwarya Venkittaraman, Dr. Panduga Mynar Babu, Dr. Hariharan

Harikrishnan, Dr. Damodar Shankararao Hotkar, Dr. Jaghannath Kodepaka, Dr.

Neethu Asokan, Dr. Hemant Dnyaneshwar Chandore

in respect of the application of such design to:

SOIL AND CROP ENHANCING ROBOTIC DEVICE

International Design Classification:
Version: 15-2025
Class: 15 MACHINES, NOT ELSEWHERE SPECIFIED
Subclass: 03 AGRICULTURAL AND FORESTRY MACHINERY

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

Intellectual Property Office is an operating name of the Patent Office www.gov.uk/ipo

Dr. H. Harikrishnan was granted a UK Design patent titled " Soil and Crop Enhancing Robotic Device" on 15th January 2025.

Ms. A.U. Lekha Shree, a third-year Pharmaceutical Technology student, served as the overall coordinator for the Republic Day parade march-past event, held on January 26, 2025, at Paavai Engineering College. Previously, she had participated in the Republic Day parade on January 26, 2024, during the 75th Republic Day celebration at Kartavya Path, New Delhi.

LEKHA SHREE A U
III B.Tech (PT)

In the Graduation day ceremony of batch 2020-2024, out of 44 students 40 students were graduated with 2 gold medalist, Vijayakumar.V (9.50 CGPA)and Suma.R (9.12 CGPA).

VIJAYKUMAR V
GOLD MEDALIST (9.50 CGPA)

SUMA R
GOLD MEDALIST (9.12 CGPA)

Orchid Pharma Ltd.
A Dhanuka Group Company

PLACEMENT SECURED STUDENTS

ABI A
IV B.Tech (PT)
Orchid Pharma Ltd.

CHANDRU V
IV B.Tech (PT)
Orchid Pharma Ltd.

DHINESH KUMAR R
IV B.Tech (PT)
Orchid Pharma Ltd.

GOWRISHANKAR V
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GOWTHAM M
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PRAVIN KUMAR S
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PRAVEEN KUMAR T
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SANTHOSH KUMAR S
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Orchid Pharma Ltd.

UPCOMING EVENTS

S. No.	Scheduled Date	Name of the Event
1	11-02-2025	Academic guest lecture
2	12-02-2025	Library Club activity
3	12-02-2025	Green House activity
4	13-02-2025	Lecture Series Talk 2
5	20-02-2025	Lecture Series Talk 3
6	21-02-2025	Farm land activity
7	22-02-2025	Technical Quiz associated with National Science Day
8	28-02-2025	National Science Day/ Rare Disease Day

PHARMA DIVERSITY

Ayurveda

Ayurveda, the ancient Indian system of medicine, is rooted in the use of natural substances such as herbs, minerals, and plant-based compounds for healing. Pharmaceutical technology in Ayurveda focuses on the development of effective and safe herbal medicines and formulations. Over time, technological advancements have helped refine the preparation processes of Ayurvedic medicines, ensuring standardization and quality control. Modern pharmaceutical technology has enabled the extraction of active compounds from plants using advanced techniques such as solvent extraction, supercritical fluid extraction, and chromatography. These methods help isolate the therapeutic components from raw plant materials with high precision. One of the key challenges in Ayurvedic medicine is the consistency and potency of herbal formulations. Pharmaceutical technology has helped in the standardization of these formulations, ensuring that they deliver the same therapeutic benefits each time.

Siddha

Similar to Ayurveda, Siddha medicine is deeply rooted in the use of natural substances, including plant, animal, and mineral-based ingredients. However, Siddha's therapeutic approach is more closely tied to spiritual practices and the transmutation of materials. Pharmaceutical technology has found ways to modernize the preparation and administration of Siddha medicines, focusing on the complex formulations and their potency. Siddha medicines include complex combinations of plant extracts and minerals. Pharmaceutical technology is used to purify and refine these substances through advanced purification processes, such as calcination (putting herbs and minerals through specific heating processes) and sublimation.

Allopathy

Allopathy, or conventional Western medicine, relies heavily on pharmaceutical technology for the development, production, and delivery of drugs. This system is based on evidence, scientific research, and clinical trials. Pharmaceutical technology plays an essential role in every aspect of allopathic medicine, from drug discovery to patient treatment. The foundation of pharmaceutical technology in Allopathy is drug discovery, which often begins with identifying active compounds from natural sources or through synthetic chemistry. Techniques like high-throughput screening, molecular modeling, and genetic engineering are employed to discover new drug molecules.

VEDHAVATHI R
IV B.Tech (PT)

AYURVEDA

Natural and Plant-Based Medicines: Ayurveda emphasizes the use of natural ingredients such as herbs, minerals, and plant extracts for therapeutic purposes. In pharmaceutical technology, these ingredients are being explored for their potential to treat various diseases, often through more natural or holistic approaches.

Phytopharmaceuticals: Ayurvedic knowledge of plants is now being used to develop phytopharmaceuticals, which are plant-derived substances used in the formulation of modern medicines. For example, turmeric (with its active compound curcumin) is used in both Ayurvedic treatments and contemporary pharmaceuticals for its anti-inflammatory and antioxidant properties.

Modern Extraction and Formulation Techniques: Advances in extraction methods (such as high-performance liquid chromatography and supercritical fluid extraction) are used to isolate active compounds from Ayurvedic herbs. These compounds can then be standardized and formulated into modern dosage forms (like tablets, capsules, or tinctures) for greater consistency and efficacy.

Personalized Medicine: Ayurveda's principle of personalized medicine tailoring treatments based on an individual's unique constitution (dosha) and imbalances—has inspired approaches in pharmacogenomics and precision medicine in modern pharmaceutical technology.

Siddha in Pharmaceutical Technology

Traditional Medicinal Knowledge: Siddha, like Ayurveda, relies on plant-based and mineral medicines but also incorporates animal-based substances. The holistic approach of Siddha, which emphasizes balance and prevention, has led to the exploration of new therapeutic agents in pharmaceutical research.

Herbal Formulations: Siddha medicine uses a combination of herbs, metals, and minerals (like mercury) in its treatments. Modern pharmaceutical technology is working to better understand the medicinal properties of these substances and ensure their safety through rigorous clinical studies and standardized formulations.

Formulation Innovations: Siddha treatments often involve complex preparations, such as Churanams (powdered herbs) or Kudineer (medicinal water). Advances in pharmaceutical technology can help optimize these traditional methods, improving their bioavailability and effectiveness in treating conditions like digestive disorders, respiratory issues, and more.

Safety and Quality Control: Siddha remedies, which sometimes include heavy metals, require careful quality control. Modern pharmaceutical techniques are used to purify and standardize such compounds, ensuring that they are both safe and effective for patients.

Allopathy (Modern Western Medicine) in Pharmaceutical Technology

Synthetic Drugs and Biopharmaceuticals: Allopathy focuses on the use of synthetic drugs, antibiotics, vaccines, and biologics. Pharmaceutical technology in this domain has achieved major breakthroughs in drug synthesis, genetic engineering (e.g., monoclonal antibodies), and the development of targeted therapies.

Advanced Delivery Systems: Allopathic medicine benefits from technological advancements such as controlled-release formulations, nanotechnology, and targeted drug delivery systems, which improve the efficacy and minimize the side effects of drugs.

Clinical Trials and Evidence-Based Medicine: Allopathy relies heavily on clinical trials and rigorous scientific evidence to validate treatments. This reliance on robust data has shaped the modern pharmaceutical industry and regulatory standards for drug approval and safety.

Integrating Ayurveda, Siddha, and Allopathy in Pharmaceutical Technology.

Herbal and Synthetic Synergies: There is a growing trend of combining traditional medicine with modern pharmaceuticals to create integrative medicines. For instance, combining herbal remedies from Ayurveda or Siddha with allopathic drugs could provide enhanced therapeutic effects while minimizing side effects. Research into these combinations is being conducted to ensure they are both safe and effective.

Holistic Drug Development: The holistic approach of Ayurveda and Siddha can be incorporated into pharmaceutical development, focusing not only on treating symptoms but also on improving overall wellness and preventing disease. Modern pharmaceutical technology is exploring how these traditional healing concepts can inform new, more effective treatment paradigms.

Regulatory Frameworks: For these integrated or hybrid medicines, there is an increasing need for new regulatory frameworks that ensure the safety, efficacy, and quality of these multi-disciplinary therapies. Regulatory bodies in various countries are working on creating standards for integrating traditional and modern medicines in pharmaceutical technology

MOHANAPRIYA A
IV B.Tech (PT)

ARJUNA CAPSULES

Cardiovascular health: Arjuna capsules are believed to help maintain healthy blood pressure, cholesterol levels, and cardiovascular function.

Antioxidant properties: The bark of the Terminalia arjuna tree contains antioxidants that help protect against oxidative stress and cell damage.

Improved heart function: Arjuna capsules are thought to improve heart function by increasing cardiac output and reducing systemic vascular resistance.

Anti-inflammatory effects: The capsules have anti-inflammatory properties, which may help reduce inflammation and improve overall health.

Traditional Ayurvedic medicine: Arjuna capsules have been used in traditional Ayurvedic medicine for centuries to support heart health and overall well-being.

Natural and safe: The capsules are made from natural ingredients and are considered safe for most adults when taken as directed.

May help reduce stress: Arjuna capsules may help reduce stress and anxiety by promoting relaxation and improving mood.

Supports overall health: The capsules are believed to support overall health and well-being by promoting healthy digestion, reducing inflammation, and improving immune function.

Please consult with a healthcare professional before taking Arjuna capsules, especially if you have any underlying medical conditions or are taking medications.

RAJASRI E
II B.Tech (PT)

AYURVEDIC MEDICAL SYSTEM

Ayurveda, the ancient Indian system of medicine, boasts an incredible pharmaceutical diversity that has been harnessed for centuries to create effective remedies for various ailments. With over 6,000 medicinal plants, 1,000 minerals, and 50 animal products, Ayurveda's pharmacopeia is one of the richest and most diverse in the world.

The pharmaceutical diversity of Ayurveda is rooted in its holistic approach to health and wellness. Ayurvedic practitioners believe that every individual has a unique constitution, or prakriti, which is influenced by a combination of genetic, environmental, and lifestyle factors. To address this diversity, Ayurveda employs a wide range of pharmaceutical preparations, including:

- Kashayams (decoctions)
- Arishtams (fermented liquids)
- Avalehas (medicinal jams)
- Churnas (powders)
- Tailas (oils)

These preparations are often tailored to an individual's specific needs and constitution, making Ayurveda a highly personalized system of medicine. The pharmaceutical diversity of Ayurveda is also reflected in its use of various plant parts, including roots, leaves, flowers, fruits, and seeds.

Some of the most commonly used medicinal plants in Ayurveda include Turmeric, Ginger, Ashwagandha, Triphala, and Tulsi. These plants have been extensively studied for their pharmacological properties and have been found to possess a range of bioactive compounds, including alkaloids, glycosides, and terpenes.

The pharmaceutical diversity of Ayurveda has also led to the development of various polyherbal formulations, which combine multiple medicinal plants to create a synergistic effect. These formulations are often more effective than single-plant extracts and have been found to possess a range of therapeutic properties, including anti-inflammatory, antioxidant, and antimicrobial activities.

In conclusion, the pharmaceutical diversity of Ayurveda is a key strength of this ancient system of medicine. With its rich pharmacopeia and personalized approach to health and wellness, Ayurveda offers a unique and effective way to address a range of health conditions and promote overall well-being.

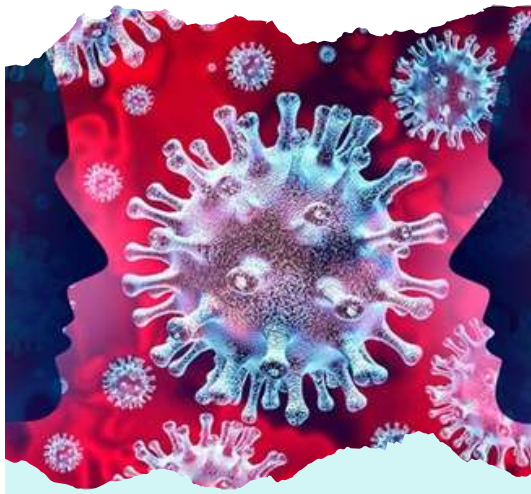
SOBIKA P
II B.Tech (PT)

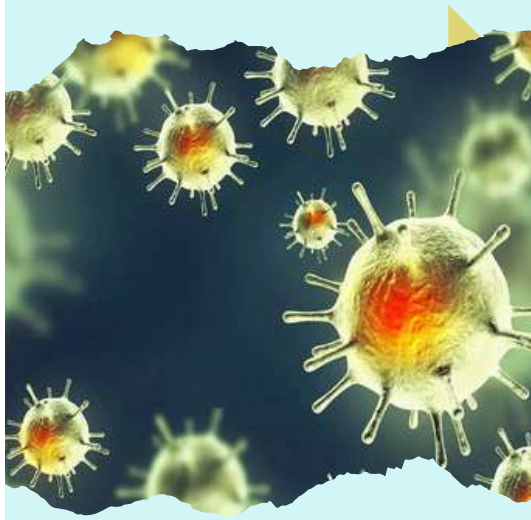
CHALLENGES 'n' SOLUTIONS

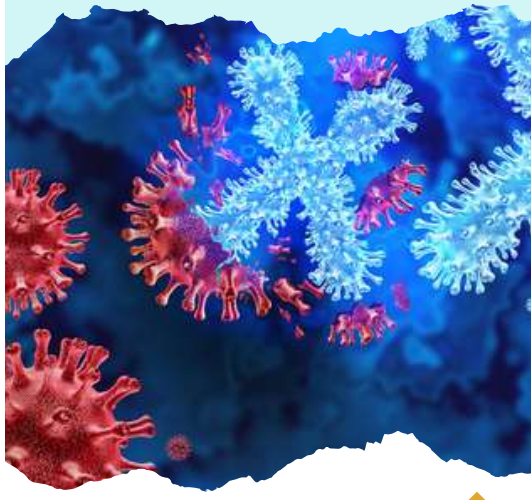
DISEASE X

Do not confuse with Clade X. For the outbreak in the DRC, refer to the 2024 disease outbreak in Kwango province. Colored scanning electron microscope (SEM) image of SARS-CoV-2, thought in 2020 to be the initial virus to cause Disease. Disease X serves as a placeholder designation chosen by the World Health Organization (WHO) in February 2018 for their list of blueprint priority diseases, symbolizing a theoretical, unidentified pathogen. The WHO implemented this placeholder name to maintain planning flexibility for adapting to unknown pathogens (such as broader vaccine development and manufacturing infrastructures). Anthony Fauci, the former Director of the US National Institute of Allergy and Infectious Diseases, remarked that the concept of Disease X would motivate WHO initiatives to concentrate on complete categories of viruses (like flaviviruses), rather than solely on single strains (for instance, zika virus), thereby enhancing the WHO's ability to tackle unexpected strains.

In 2020, specialists, including certain advisors from the WHO, suggested that COVID-19, attributed to the SARS-CoV-2 virus variant, could qualify as the inaugural Disease X By December 2024, an unknown illness in the Democratic Republic of the Congo was occasionally called Disease X, infecting more than 400 individuals and resulting in at least 79 deaths, which was later identified as a virulent form of malaria.







SHARMILA S.T
II B.Tech (PT)

PHARMACEUTICAL INDUSTRY

Challenge 1: High Cost and Time for Drug Development

Developing a new drug can take 10–15 years and costs billions of dollars due to rigorous clinical trials and regulatory approvals.

Solution:

Adopt artificial intelligence (AI) to predict drug efficacy, optimize trials, and reduce R&D timelines.

Utilize 3D printing to create drug prototypes and personalized dosage forms quickly.

Encourage public-private partnerships to share resources and reduce the financial burden.

Challenge 2: Counterfeit Drugs

Fake medicines pose a risk to public health and undermine trust in pharmaceutical companies.

Solution:

Implement blockchain technology for secure tracking of drugs across the supply chain.

Use holographic packaging and other advanced anti-counterfeiting measures.

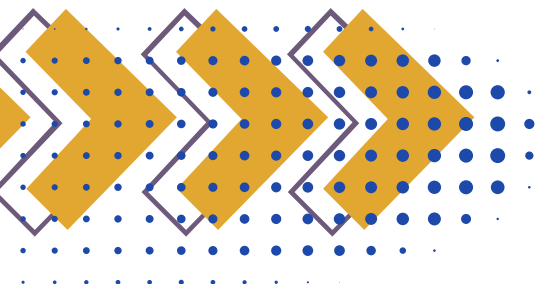
Challenge 3: Regulatory Hurdles

Navigating varying regulations in different countries delays drug availability.

Solution:

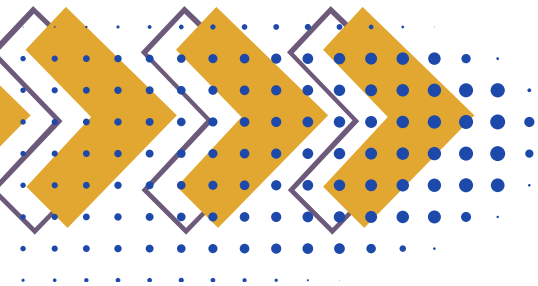
Harmonize international regulatory standards through organizations like ICH (International Council for Harmonisation).

Develop a centralized, digital submission system for quicker approvals.



EDUCATION

Challenge 1: Lack of Access to Quality Education in Rural Areas
Many students in remote regions lack access to skilled teachers and modern learning resources.
Solution:
Use e-learning platforms and virtual classrooms to deliver lessons.
Introduce low-cost tablets and internet connectivity initiatives like solar-powered Wi-Fi.
Train local teachers through short-term programs to enhance teaching quality.
Challenge 2: Outdated Curriculum
Curricula often fail to prepare students for modern job markets.
Solution:
Collaborate with industries to design skill-oriented programs and internships.
Incorporate STEM (Science, Technology, Engineering, Math) and emerging topics like AI and coding into the syllabus.
Regularly review and update educational content based on technological advancements.
Challenge 3: Lack of Practical Learning
Theoretical knowledge dominates over practical skills, limiting student readiness for real-world challenges.
Solution:
Introduce project-based learning and hands-on labs.
Partner with companies to provide students with on-the-job training and apprenticeship opportunities.



DISEASE AND TREATMENT

Challenge 1: Rising Prevalence of Lifestyle Diseases

Diseases like diabetes, hypertension, and obesity are increasing due to poor diet, sedentary lifestyle, and stress.

Solution:

Focus on preventive healthcare through awareness campaigns about healthy lifestyles.

Develop innovative treatments like GLP-1 receptor agonists for diabetes and minimally invasive procedures for hypertension.

Challenge 2: Emerging Infectious Diseases

Outbreaks like COVID-19, Zika virus, and Ebola have global consequences.

Solution:

Strengthen global disease surveillance systems to detect and respond quickly.

Invest in mRNA vaccine technology for rapid vaccine development.

Enhance public health infrastructure and promote early diagnostic tools.

Challenge 3: Antibiotic Resistance

Overuse and misuse of antibiotics lead to resistant infections that are hard to treat.

Solution:

Promote antibiotic stewardship programs in healthcare facilities.

Develop alternative therapies like bacteriophage treatments and immunotherapies.

Conduct public education campaigns to discourage unnecessary use of antibiotics.

GOKULKANNAN K
IV B.Tech (PT)

THE HARMONY OF INSULIN

In delicate balance, the body's rhyme,
Insulin's gentle touch, regulates in time.
A sugar symphony, a waltz so fine,
Insulin's melody, keeps the body in line.

With each injection, a new harmony's born,
As insulin's sweetness, soothes the body's form.
The highs and lows, of sugar's ebb and flow,
Insulin's rhythm, keeps the body aglow.

A lifesaving serenade, that echoes through the night,
Insulin's lullaby, keeps the body's light.
A beacon of hope, in the darkest of times,
Insulin's harmony, keeps the heart and soul in rhyme.

KANAGA R
II B.Tech (PT)

MEDICINE'S CANVAS

Colors of care, on a canvas so fine
Pigments of pills, a healing design
Brushstrokes of vaccines, a protective hue
Medicine's canvas, a masterpiece anew.

Strokes of insulin, a gentle, sweet rain
Tones of antibiotics, a fighting refrain
Hues of pain relief, a soothing, calm sea
Medicine's canvas, a work of healing glee.

A tapestry rich, with threads of might
Medicine's canvas, a healing delight
A kaleidoscope, of colors so bright
Medicine's canvas, a wondrous, healing sight.

KIRUTHIKA A
II B.Tech (PT)

DATES TO REMEMBER

INTERNATIONAL HEALTH EVENTS

World Cancer Day: February 4th, raises awareness about cancer and its prevention.
World Health Day: April 7th, marks the anniversary of the founding of the World Health Organization (WHO).
World Pharmacists Day: September 25th, celebrates the role of pharmacists in global health.
World AIDS Day: December 1st, promotes awareness and education about HIV/AIDS.

NATIONAL HEALTH EVENTS IN INDIA

National Youth Day: January 12th, focuses on youth health and development.
National Kidney Day: March 10th (second Thursday of March), raises awareness about kidney health .
National Doctors' Day: July 1st, honors the contributions of doctors in India

OTHER NOTABLE EVENTS

World Tuberculosis Day: March 24th, promotes awareness and action against **TB**
World Heart Day: September 29th, promotes heart health awareness
World Diabetes Day: November 14th, raises awareness about diabetes prevention and management

POOJA S
II B.Tech (PT)

GLORIOSA LILY *(Gloriosa superba)*

Gloriosa superba, commonly known as the Glory Lily or Flame Lily, is a perennial herb native to Africa and Asia, with a rich history of traditional use in Ayurvedic and Unani practices. It contains a diverse range of bioactive compounds, including alkaloids such as colchicine, gloriosine, and superbine, which contribute to its medicinal properties. The herb's glycosides possess anti-inflammatory and antioxidant properties, while its flavonoids exhibit antioxidant and anti-inflammatory effects, making it a valuable remedy for various health conditions. *Gloriosa superba* has been used to treat rheumatism and arthritis, thanks to its anti-inflammatory properties, as well as gout, fever, and skin conditions like eczema, acne, and dermatitis.

In some traditional medicine practices, it is also used to treat snake bites. Beyond its medicinal uses, *Gloriosa superba* has been employed for ornamental purposes, with its unique, curved flowers making it a popular choice for gardens. The flowers can also be used as a natural dye, while the herb's alkaloids have been shown to have insecticidal properties. However, caution is advised when using *Gloriosa superba*, or with certain medications like blood thinners and diabetes medications should be avoided, making it essential to use the herb under the guidance of a qualified healthcare practitioner. *Gloriosa superba* is a medicinal herb with a rich history of traditional use. Its bioactive compounds have anti-inflammatory, antioxidant, and insecticidal properties, making it effective in treating various health conditions. However, it's essential to use the herb with caution and under the guidance of a qualified healthcare practitioner.

KINGDOM	**:**	**Plantae**
ORDER	**:**	**Liliales**
FAMILY	**:**	**Colchicaceae**
GENUS	**:**	***Gloriosa***
SPECIES	**:**	***Superba***

State Flower of Tamilnadu

The scientific term used for the flower is *Gloriosa superba*. The flower has many distinct features and it looks a bit different from other flowers. Reasons behind Flame Lily being the State Flower of Tamil Nadu: The plant is exported to western countries due to its medicinal use**.**

Medicinal Properties:

Gloriosa superba contains several bioactive compounds, including:

1. Alkaloids: *Gloriosa superba* contains several alkaloids, including colchicine, gloriosine, and superbine.
2. Glycosides: The herb contains glycosides, which have anti-inflammatory and antioxidant properties.
3. Flavonoids: *Gloriosa superba* contains flavonoids, which have antioxidant and anti-inflammatory properties.

Medicinal Uses

Gloriosa superba has been used to treat various health conditions, including:

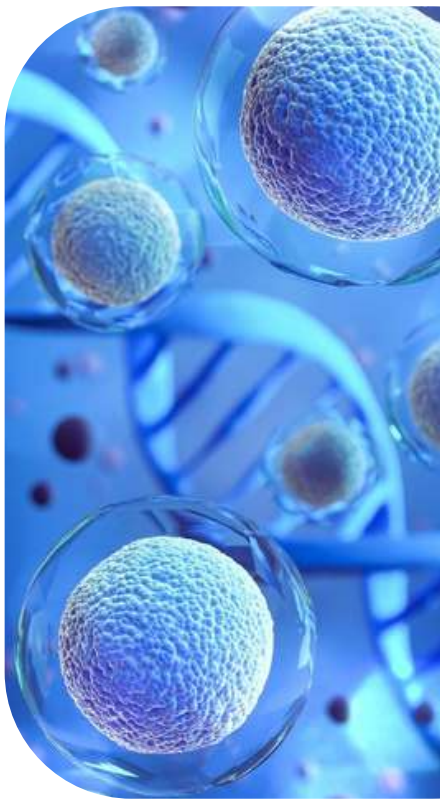
1. Rheumatism and arthritis: The herb's anti-inflammatory properties make it effective in treating rheumatism and arthritis.
2. Gout: *Gloriosa superba's* colchicine content makes it effective in treating gout.
3. Fever: The herb has been used to treat fever, particularly in children.
4. Skin conditions: *Gloriosa superba* has been used to treat skin conditions such as eczema, acne, and dermatitis.
5. Snake bites: In some traditional medicine practices, Gloriosa superba is used to treat snake bites.

SWETHA R
IV B.Tech (PT)

HISTORY OF PHARMACEUTICAL TECHNOLOGY

Ancient Era (Before 1000 AD)

- 3000 BC: Ancient Egyptians used herbal medicines and developed early pharmaceutical techniques.
- 1500 BC: Ayurveda and Traditional Chinese Medicine (TCM) emerged with documented herbal remedies.
- 460-370 BC: Hippocrates emphasized natural remedies and the ethical practice of medicine.
- 100 AD: Dioscorides wrote De Materia Medica, a foundational text on medicinal plants.



Medieval Period (1000-1500 AD)

- 1025: Persian scholar Avicenna wrote The Canon of Medicine, summarizing pharmaceutical knowledge.
- 1240: The first official pharmacy was established in Baghdad.
- 1400s: Alchemists experimented with minerals and chemicals for medicinal use.

Renaissance & Early Modern Period (1500-1800 AD)

- 1546: The first known pharmacopoeia (Dispenstarium) was published in Germany.
- 1600s: William Harvey discovered blood circulation, influencing drug delivery methods.
- 1700s: Smallpox vaccination began with Edward Jenner's experiments.

Industrial Revolution & 19th Century (1800-1900)

- 1804: Morphine was isolated from opium, marking the birth of modern alkaloid-based medicines.

- 1853: Hypodermic syringe was invented, revolutionizing drug administration.
- 1869: First synthetic drug, chloral hydrate, was introduced.
- 1897: Aspirin (acetylsalicylic acid) was synthesized by Bayer.

20th Century – The Golden Age of Pharmaceuticals

- 1928: Alexander Fleming discovered penicillin, the first antibiotic.
- 1940s: Mass production of penicillin began, transforming healthcare.
- 1950s: Introduction of vaccines for polio and other infectious diseases.
- 1960s: The first oral contraceptive pills were developed.
- 1970s: Biotechnological advances led to the first recombinant insulin.
- 1980s: Monoclonal antibodies and gene therapy research began.
- 1990s: Human Genome Project started, revolutionizing personalized medicine.

21st Century – Digital & Biopharmaceutical Revolution

- 2000s: Stem cell therapy and targeted cancer therapies advanced.
- 2010s: CRISPR gene-editing technology emerged.
- 2020s: mRNA vaccines (Pfizer-BioNTech, Moderna) were developed for COVID-19.

PHARMACEUTICAL TECHNOLOGY SCIENTISTS

Early Milestones (Before 1800s)

- Hippocrates (460–370 BC) – Established the concept of evidence-based medicine.
- Dioscorides (1st Century AD) – Wrote De Materia Medica, a foundational text on medicinal plants.
- Avicenna (980–1037 AD) – Authored The Canon of Medicine, which guided pharmaceutical practices for centuries.

19th Century – Birth of Modern Pharmaceuticals

- Friedrich Sertürner (1804) – Isolated morphine from opium, the first alkaloid drug.
- Louis Pasteur (1860s) – Developed germ theory, revolutionizing vaccine development.
- Joseph Lister (1867) – Introduced antiseptics in surgery.
- Paul Ehrlich (1909) – Discovered Salvarsan, the first targeted drug therapy for syphilis.

20th Century – The Golden Age of Pharmaceuticals

- Alexander Fleming (1928) – Discovered penicillin, leading to the antibiotic revolution.
- Selman Waksman (1940s) – Discovered streptomycin, the first antibiotic effective against tuberculosis.
- Jonas Salk (1955) – Developed the polio vaccine.
- Gertrude Elion & George Hitchings (1950s-60s) – Developed chemotherapy drugs, immunosuppressants, and antivirals.
- Katalin Karikó & Drew Weissman (1990s-2020s) – Developed mRNA vaccine technology, leading to COVID-19 vaccines.

INDIAN AYURVEDA

Ancient Period (Before 1000 BCE)

- 3000–1500 BCE: Ayurveda is believed to have originated during the Indus Valley Civilization.
- 1500–500 BCE: The Vedas, especially the Rigveda and Atharvaveda, mention medicinal plants and healing practices.
- 700 BCE: Charaka Samhita and Sushruta Samhita are composed, forming the foundation of Ayurveda.

Classical Period (1000 BCE – 500 CE)

- 500 BCE: Sushruta, the "Father of Surgery," documents surgical techniques in Sushruta Samhita.
- 200 CE: Charaka refines Ayurveda, emphasizing internal medicine (Kaya Chikitsa).
- 400 CE: Vagbhata compiles Ashtanga Hridayam, integrating Charaka and Sushruta's teachings.

Medieval Period (500–1600 CE)

- 700 CE: Ayurveda spreads to China, Tibet, and the Middle East.
- 1000 CE: Unani medicine influences Ayurveda, leading to new treatment methods.
- 1500 CE: Portuguese and Mughal rulers document Ayurveda's effectiveness in treating diseases.

Colonial Period (1600–1947 CE)

- 1800s: British rule suppresses Ayurveda in favor of Western medicine.
- 1893: Swami Vivekananda introduces Ayurveda to the West.
- 1916: Pandit Ram Narayan Sharma establishes the first Ayurvedic college in India.

Modern Period (1947–Present)

- 1947: Ayurveda is officially recognized in India after independence.
- 1970s: Indian government establishes the Central Council for Research in Ayurveda and Siddha (CCRAS).
- 2003: Ministry of AYUSH is formed to promote Ayurveda globally.
- 2020s: Ayurveda gains international recognition, with WHO setting up a Global Centre for Traditional Medicine in India.

M G KARTHIH
Assistant Professor (PT)

KNOW YOUR INDUSTRY

CIPLA

Cipla is an Indian multinational pharmaceutical company that develops, manufactures, and markets a wide range of pharmaceutical products.

History

Founded in 1935 by Khwaja Abdul Hamied, Cipla has grown to become one of the largest pharmaceutical companies in India.

Products:

Cipla's product portfolio includes:

Pharmaceuticals: formulations, APIs, and intermediates

Respiratory: asthma, COPD, and allergy medications

Cardiovascular: hypertension, diabetes, and lipid management medications

Anti-Infectives: antibiotics, antivirals, and antifungals

Oncology: cancer medications

Braches:

Cipla Ltd., Mumbai, India (Head Office)
Cipla USA Inc., USA
Cipla UK Ltd., UK
Cipla Medpro South Africa (Pty) Ltd., South Africa
Cipla Pharmaceuticals Europe NV, Belgium
Cipla Gulf FZ LLC, UAE
Cipla India, various locations (Goa, Bangalore, Baddi, Indore, Kurkumbh)

Turnover

Cipla's total revenue for 2020-21 was ₹18,815 crores (approximately $2.5 billion USD).

Head office

Cipla Ltd., Cipla House, Peninsula Business Park, Ganpatrao Kadam Marg, Lower Parel, Mumbai - 400 013, Maharashtra, India

SHALINI M
II B.Tech (PT)

DR. REDDY'S LABORATORIES

Dr. Reddy's Laboratories is an Indian multinational pharmaceutical company based in Hyderabad. The company was founded by Kallam Anji Reddy, who previously worked in the mentor institute Indian Drugs and Pharmaceuticals Limited. Dr. Reddy manufactures and markets a wide range of pharmaceuticals in India and overseas. The company produces over 190 medications, 60 active pharmaceutical ingredients (APIs) for drug manufacture, diagnostic kits, critical care, and biotechnology.

History

Dr. Reddy's originally launched in 1984 producing active pharmaceutical ingredients. In 1986, Reddy's started operations on branded formulations. Within a year Reddy's had launched Norilet, the company's first recognised brand in India. Soon, Dr. Reddy's obtained another success with Omez, its branded omeprazole gastrointestinal ulcer and reflux oesophagitis medication launched at half the price of other brands on the Indian market at that time.

Top active pharmaceutical ingredients

- Abiraterone Acetate
- Ciprofloxacin Hydrochloride
- Sertraline Hydrochloride
- Ranitidine HCI Form 2
- Terbinafine HCI
- Ramipril
- Canagliflozin
- Naproxen Sodium

Product of Dr.Reddy's pharmaceutical industry

Dr. Reddy's Laboratories is a pharmaceutical company in India that manufactures a wide range of products, including prescription drugs, over-the-counter medications, and vaccines.

Prescription drugs

Omez: A proton pump inhibitor (PPI), Nise: A non-steroidal anti-inflammatory drug (NSAID), Stamlo: A calcium channel blocker, Clamp: A combination of amoxicillin and potassium clavulanate, Razo: A PPI, Ketorol DT: An analgesic, Atocor: A statin, Glimy: A sulfonylurea (SU), Telsartan: An angiotensin receptor blocker.

Over-the-counter medication

Aquaderm: A face and body wash, lotion, and body wash, Cheerio: An oral gel, Clohex: An interdental toothbrush.

Vaccines and therapeutics

Vaccines and therapeutics for mild, moderate, and severe COVID-19, Dr. Reddy's also manufactures active pharmaceutical ingredients (APIs).

Branches

- 4.4. Baddi, Himachal Pradesh, 4.7. Cuttack, Orissa, 4.0. Hubli, Karnataka,
- 4.0. Jalna, Maharashtra, 5.0. Kurnool, Andhra Pradesh, 4.0. Mirialguda, Andhra Pradesh.
- 4.0. Mirialguda, Andhra Pradesh, 5.0. Miryalaguda, Telangana, 4.5. Ongole, Andhra Pradesh.

Turnover

Dr. Reddy's Laboratories (DRL) earned over 279 billion Indian rupees in revenue in the financial year 2024. The company's global generic product segment generated the most revenue, followed by the Pharmaceuticals Services and Active Ingredients (PSAI) segment.

Head office

Dr. Reddys Laboratories Ltd (Corporate Office) in Banjara Hills, Hyderabad is known to satisfactorily cater to the demands of its customer base. The business came into existence in 1984 and has, since then, been a known name in its field. It stands located at Door No 8-2-337, Road No 3, Banjara Hills-500034.

RAJESHWARI D
IV B.Tech (PT)

JOHNSON & JOHNSON INDUSTRY

Headquarters: New Brunswick, New Jersey, USA
Industry: Pharmaceutical, Medical Devices, Consumer Health Products
Founded: 1886

CEO (as of 2024): Joaquin Duato

Products:

Johnson's baby cream, Johnson baby wipes, baby soaps and shampoo, baby cotton touch, Acuvue, Aveeno, Actelion, Benadryl, Benylin, clean and clear, Ethicon.

Instruments used:

Dynatape Suture: A suture made by JNJ
Ethicon sutures: Sutures made of polydioxanone designed to close fascia, the connective tissue under the skin
Actis Hip Stem: A hip stem made by JNJ
Inhance Shoulder System: A shoulder system made by JNJ
Trumatch Graft Cage: A graft cage made by JNJ
Symphony OCT System: An OCT system made by JNJ
Velys Digital Surgery platform: A digital surgery platform made by JNJ
Attune Cementless Fixed Bearing Knee: A knee made by JNJ.

Profit:

Johnson & Johnson's (JNJ) revenue for 2023 was $85.16 billion, which was a 10.57% increase from the previous year. In 2024, JNJ's revenue was $88.8 billion, which was a 4.3% increase from 2023.

KOGINA D
II B.Tech (PT)

GLAXOSMITHKLINE

GlaxoSmithKline (GSK) is a British multinational pharmaceutical company that has been at the forefront of healthcare innovation for over 300 years. Headquartered in Brentford, London, GSK is one of the world's largest pharmaceutical companies, with a presence in over 115 countries. The company's portfolio includes a wide range of prescription medicines and vaccines for major diseases such as asthma, cancer, and HIV. GSK is also a leader in the development of vaccines, with a range of products that protect against infectious diseases such as influenza, pertussis, and HPV. The company's commitment to research and development has led to the discovery of numerous life-saving medicines, including the first malaria vaccine, RTS,S. With a strong focus on patient safety, quality, and access to healthcare, GSK continues to be a trusted partner in the global healthcare community. Through its partnerships with governments, healthcare providers, and non-profit organizations, GSK is working to improve access to healthcare for people around the world, particularly in developing countries.

SOBIKA P
II B.Tech (PT)

ZYDUS CADILA PHARMACEUTICAL INDUSTRIES

Overview

Zydus Cadila is an Indian multinational pharmaceutical company that develops, manufactures, and markets a wide range of pharmaceutical products.

History

Founded in 1952 by Ramanbhai Patel, Zydus Cadila has grown to become one of the largest pharmaceutical companies in India.

Products

Zydus Cadila's product portfolio includes:

Pharmaceuticals: formulations, APIs, and intermediates
Vaccines: pediatric, adolescent, and adult vaccines
Biosimilars: oncology, auto-immune, and other therapeutic areas
Animal Health: veterinary pharmaceuticals and feed supplements

Branches

Zydus Cadila, Ahmedabad, India (Head Office)
Zydus Pharmaceuticals USA Inc., USA
Zydus Cadila UK Ltd., UK
Zydus Cadila Brazil Ltda., Brazil
Zydus Cadila (South Africa) (Pty) Ltd., South Africa
Zydus Cadila, Sanaul (Sikkim), India
Zydus Cadila, Goa, India
Zydus Cadila, Himachal Pradesh, India
Zydus Cadila, Chennai, India

Turnover

Zydus Cadila's total revenue for 2020-21 was ₹14,662 crores (approximately $2 billion USD).

Head Office

Zydus Cadila, Zydus Tower, Satellite Crossroads, Ahmedabad - 380 015, Gujarat, India.

SURENDHAR M
II B.Tech (PT)

PFIZER PHARMACEUTICAL INDUSTRY

History

Founded in 1849 by Charles Pfizer and Charles Erhart in New York City

Initially produced fine chemicals and pharmaceuticals

Milestones

1950s: Developed Terramycin, the first antibiotic produced through fermentation

1980s: Introduced Zithromax, a widely used antibiotic

1990s: Developed Viagra, a treatment for erectile dysfunction

2000s: Acquired Warner-Lambert and Pharmacia, expanding product portfolio

Products

Prescription medications: Lyrica, Pristiq, Chantix, and Eliquis

Vaccines: Prevnar 13 and Nuvaxovid (COVID-19 vaccine)

Consumer healthcare: Advil, Centrum, and Caltrate

Research and Development

Invests approximately $8 billion annually in R&D

Focuses on oncology, inflammation and immunology, and vaccines

Collaborates with academia, biotech companies, and governments

Global Presence

Operates in over 180 countries

Employs approximately 79,000 people worldwide

Has a diverse portfolio of medicines and vaccines

Sustainability

Aims to reduce greenhouse gas emissions by 50% by 2025

Commits to responsible sourcing and supply chain management

Supports global health initiatives and access to medicines programs.

KANAGA R
II B.Tech (PT)

PHARMA FLYER

SYSTEM OF MEDICINE

ALLOPATHY

OVERVIEW

- CONVENTIONAL MEDICINE
- ADVANCE TECHNOLOGY FOR TREATMENT

PRINCIPLE :

I. PATHOPHYSIOLOGY

II. PHARMOCOLOGY

III. EVIDENCE BASED APPROACH

E.g.: ANTIBIOTICS

ADVANTAGES:

- RAPID SYMPTOM RELIFE
- EFFECTIVE FOR ACUTE AND EMERGENCY CONDITION

DISADVANTAGES :

- SIDE EFFECTS, HIGH COST

AYURVEDA

OVERVIEW

- ANCIENT INDIAN SYSTEM
- VAPA,PITTA,KAPHA

PRINCIPLE :

I. EMBALANCE OF DOSAGE

II. RESTORE BALANCE NATURALLY

III. MAINTAINING HARMONY BETWEEN BODY, MIND AND SPRIT

E.g.: ASHWAGANDHA

ADVANTAGES:

- HOLISTIC AND PREVENTIVE
- ENATURAL AND PLANT BASED INGREDIENTS

DISADVANTAGES :

- LACK OF STANDARDIZATION

SIDDHA

OVERVIEW

- SOUTH INDIAN MEDICAL SYSTEM
- STRONG EMPHASIS ON SPIRITUALITY

PRINCIPLE :

I. PANCHA BHUTAS

II.THREE HUMORS

III. EVIDENCE BASED APPROACH

E.g.: NILAMVEMBU KUDINEER

ADVANTAGES:

- BOTH PREVENTION AND CURE
- CHRONIC CONDITIONS

DISADVANTAGES :

- LESS SCIENTIFIC VALIDATION

UNANI

OVERVIEW

- GREEK-ORIGIN SYSTEM
- EMPHASIZES HUMORAL BALANCE

PRINCIPLE :

I. BALANCE OF HUMORS

II. DETOXIFICATION

III. NUTRITION

E.g.: CUPPING THERAPHY

ADVANTAGES:

- DIETARY AND HERBAL
- LIFESTYLE DISORDERS LIKE DIABETES

DISADVANTAGES :

- FORMULATIONS CONTAIN HEAVY METALS

HOMEOPATHY

OVERVIEW

- SAMUEL HAHNEMANN IN THE LATE 18th CENTURY
- "LIKE CURSES LIKE"

PRINCIPLE :

I. BODY'S VITAL FORCE

II. SYMPTOMS ARE NOT SUPPRESED

III. DILUTION AND SUCCESSION

E.g.: BELLADONNA FOR FEVER

ADVANTAGES

- MINIMAL SIDE EFFECTS

DISADVANTAGES :

- SLOW RESPONSE

NATUROPATHY

OVERVIEW

- SELF-HEALING USING DIET
- HYDROTHERAPHY

PRINCIPLE :

I. INNATE HEALING POWER

II. REMOVE TOXINS

III. RESTORE BALANCE

E.g.: MUD THERAPHY

ADVANTAGES:

- FOCUSES ON PREVENTION
- NO HARMFUL SIDE EFFECTS

DISADVANTAGES :

- NOT SUITABLE FOR EMERGENCY CONDITION

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EVERYONE SHOULD KNOW THIS

1. BP: 120/80

2. Pulse: 70-100

3. Temperature: 36.8-37

4. Breath: 12-16

5. Hemoglobin:

   Male -13.50-18

   Female-11.50-16

6. Cholesterol: 130-200

7. Potassium: 3.50-5

8. Sodium: 135-145

9. Triglycerides: 220

10. Blood volume in the body: PCV 30-40%

11. Sugar Level

    Children (70-130)

    Adults: 70-115

12. Iron: 8-15 mg

13. White blood cells WBC: 4000-11000

14. Platelets: 1,50,000 - 4,00,000

15. Red blood cells RBC: 4.50-6 million.

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ANTIBIOTIC DRUGS-OVERVIEW

Aminoglycosides

- Used to treat serious illnesses like sepsis, but can cause serious side effects.
- Examples include gentamicin and tobramycin.

Macrolides

- Used to treat lung and chest infections, and as an alternative to penicillin. Examples include azithromycin, erythromycin, and clarithromycin.

Tetracyclines

- Used to treat a variety of infections, but are commonly used to treat acne and rosacea.
- Examples include tetracycline, doxycycline, and lymecycline.

Quinolones

- Used to treat a wide range of infections.
- Examples include ciprofloxacin, levofloxacin, and norfloxacin

Ampicillin

- Ampicillian is an antibiotic belonging to the aminopenicillin class of the penicillin family.
- This drug is used to prevent and treat several bacterial infection,such as respiratory tract infections,urinary tract infections etc.,

Penicillin

- A penicillin antibiotic used to treat a wide variety of infections in the body.
- Benzylpencillin (penicillin G) is narrow spectrum antibiotic used to treat infections caused by susceptible bacteria.
- It is a natural penicillin antibiotic that is administered intravenously or intramuscularly due to poor oral absorption
- penicillin G may also be used in some cases as prophylaxis against susceptible organisms.

Cephalosporins

- Used to treat a variety of infections, including sepsis and meningitis.
- Examples include cefalexin, cefaclor, and cefadroxil.

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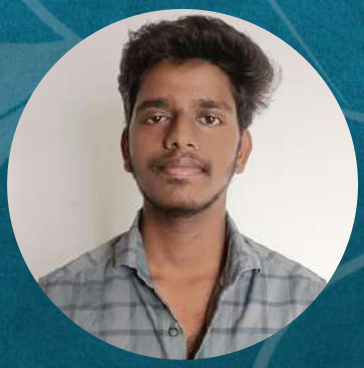

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