GUEST COLUMN

Black Box Warning
Zilucoplan

Indication: The FDA has recently approved Zilucoplan for the treatment of generalized Myasthenia Gravis (gMG) patients who came anti-acetylcholine receptor positive. This drug has a targeted mechanism of action in comparison to the other immunoglobulin or immunosuppressive therapies available for the gMG.

Dose: Zilucoplan is given as a once-daily dose, subcutaneously (0.3 mg/kg/day). This drug can be self-administered unlike other IV therapies providing convenience to the patient.

MOA: The complement cascade, and specifically complement component 5 (C5), is an important target in myasthenia gravis, with complement activation mediating structural damage to the neuromuscular junction. Zilucoplan targets the C5 component specifically and inhibits the complement activation thus stopping the structural damage to the neuromuscular junction.

Black box warning: It increases the chances of life-threatening meningococcal infection.

Common side effects: URTI, diarrhoea, and injection site reaction.

ADRs: It can cause pancreatitis or pancreatic cysts. Therefore, monitoring of pancreatic function is essential.

ASK YOUR PHARMACIST!

"I didn't experience any of the side effects listed in the enclosed literature. Should I be concerned?"

Leveraging Innovation for Excellence:
Apollo Hospitals Ahmedabad's Odyssey

Dear Readers,

I am delighted to address you through the pages of the Clinical Pharmacy Department's newsletter. As the COO of Apollo Hospitals Ahmedabad, I am privileged to share my thoughts as the first guest columnist.

"In healthcare, precision is our promise, and excellence is our pursuit."

In 2003, Apollo Hospitals Ahmedabad opened its doors, carving out a vast space of 10 acres to house its impressive facility. From the very beginning, the hospital aimed to redefine the healthcare landscape in Gujarat by providing world-class services backed by cutting-edge technology. As the first hospital in Gujarat to be accredited by the Joint Commission International (JCI), Apollo Hospitals Ahmedabad set new benchmarks for excellence and quality in the region.

A Multitude of Specialties and Complex Cases:

Recognized as a prime destination for high-end surgeries, specialized treatments, and complex cases, Apollo Hospitals Ahmedabad has cultivated a team of highly skilled doctors, surgeons, and medical professionals. Its reputation for excellence spans various fields, with cardiology, knee surgery, organ transplants, urology, and gastroenterology standing out as particular areas of expertise. Patients from across the country and beyond flock to the hospital, seeking not only advanced medical solutions but also compassionate care that goes beyond the ordinary.

Pioneering Robotic Surgery and Paediatric Liver Transplants:

At the forefront of medical innovation, Apollo Hospitals Ahmedabad introduced Da-Vinci Xi robotic surgery to its repertoire of advanced procedures. This ground-breaking technology empowers surgeons to achieve unprecedented precision, minimizing invasiveness and enhancing patient outcomes. The hospital's commitment to pushing boundaries led to a significant milestone in the year of its 20th anniversary—an accomplished 1st paediatric liver transplant in the country, affirming its dedication to tackling even the most challenging cases and giving hope to families in need.

Mr. Neeraj Lal
Chief Operating Officer,
Apollo Hospitals, Gujarat Region

A Technological Marvel for Unmatched Care:

Apollo Hospitals Ahmedabad stands tall as a symbol of technological advancement in the healthcare industry. Constantly investing in state-of-the-art infrastructure and equipment, the hospital ensures that patients receive the most accurate diagnoses, precise surgeries, and comprehensive care available.

> **Technology isn't just a tool; it's our partner in delivering excellence.**

One of the ways that Apollo Hospitals is using technology to improve healthcare is through the use of Artificial Intelligence (AI) for health check and non-communicable diseases (NCDs). Apollo has developed an AI-powered health check system that enables patients to get a comprehensive health assessment in just a few minutes. The system uses machine learning algorithms to analyze a patient's medical history, lifestyle, and other factors to provide personalized health recommendations & and analyze patient data to identify early signs of these diseases. The system can also help doctors to develop personalized treatment plans for patients based on their medical history, lifestyle, and other factors.

Another way that Apollo Hospitals is leveraging technology is through telemedicine. The Apollo 24X7 application enables patients to book appointments, consult with doctors, order medicines, and access health records. The application also provides personalized health recommendations based on a patient's medical history and lifestyle. Our interactive Queue Management System in the OPDs, which lets patients comfortably wait and be notified via IVR calls, has elevated the patient experience. Convenience and efficiency have become our hallmarks.

> **In the realm of patient care, time saved is life saved.**

One of the most significant technological innovations at Apollo Hospital Ahmedabad is the patient transportation management application. Similar to ride-hailing services like Uber and Ola, this application allows patients to book and track transportation to and from the hospital. The application allows staff to book transportation by selecting their pickup location and time and allows one transporter for the request. The application also allows patients to track the status of their rides in real-time, providing peace of mind and reducing wait times.

> **In the symphony of healthcare, technology plays the sweetest melody.**

Our journey doesn't end here. We have implemented technologies like e-ICU, AI in radiology, CRM systems, and many more to make healthcare more accessible, efficient, and precise. AI in Radiology, a deep learning algorithm can analyze medical images and detect anomalies accurately. This has significantly improved the speed and accuracy of diagnosis, allowing doctors to identify and treat conditions faster than ever before. The AI-powered radiology platform, Apollo Radiology Intelligence (ARI), uses advanced algorithms to analyze medical images such as X-rays, CT scans, and MRI scans. The platform is trained on large datasets of medical images, which allows it to recognize patterns and anomalies in images with high accuracy. Apollo has also been using AI to improve patient outcomes in critical care. The group has deployed an AI-powered platform called Apollo Clinical Excellence (ACE), which analyzes patient data in real time and provides doctors with alerts if a patient's condition starts to deteriorate. This allows doctors to intervene quickly and prevent complications.

> **In healthcare, we write the script for a healthier tomorrow.**

As we look ahead, I want to express my sincere thanks to the Clinical Pharmacy Department for this opportunity. Our collective efforts will continue to set new standards for healthcare in Ahmedabad.

Thank you for your dedication, and may the PharmaWiz newsletter serve as a beacon of knowledge, sharing, and growth for all of us.
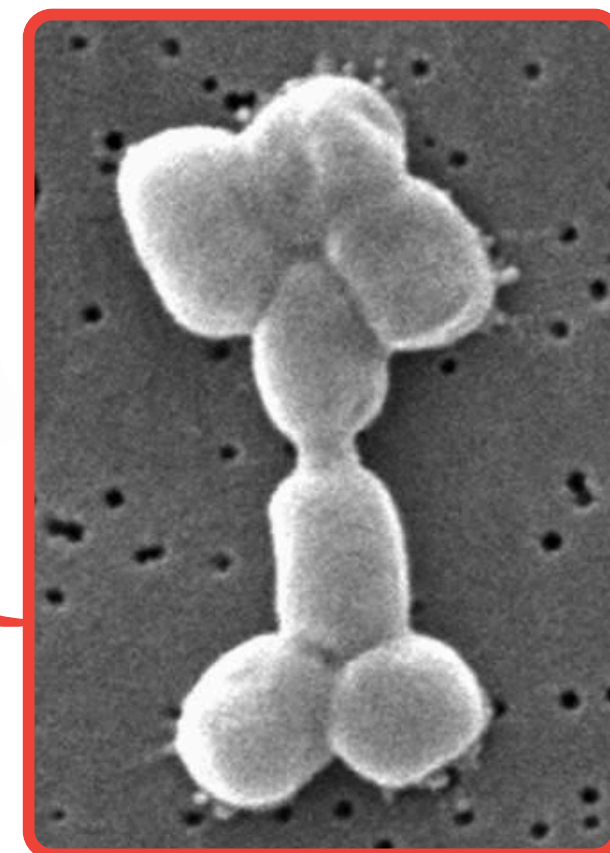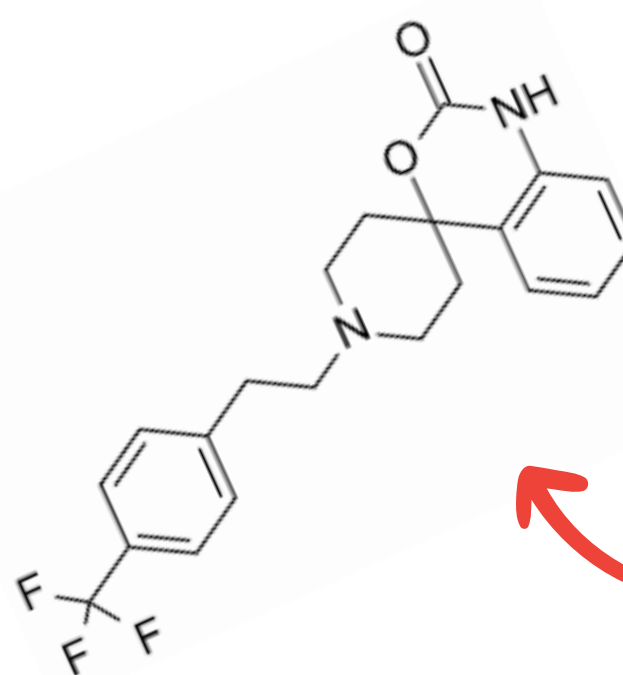
Abaucin
The AI SuperBug Antibiotic

In the medical realm, MIT and McMaster University researchers harnessed artificial intelligence (AI) to identify a potent antibiotic, Abaucin, **effective against the superbug Acinetobacter baumannii.** Abaucin **selectively targets** A. baumannii while preserving other bacterial species, **reducing the risk of rapid resistance and safeguarding essential gut flora.**

The AI-driven algorithm assessed 7,000 potential compounds to find Abaucin. Further analysis revealed Abaucin's unique mechanism, disrupting lipoprotein trafficking, essential for protein transport within cells, by inhibiting LolE. Notably, abaucin showed specificity for A. baumannii, its action fine-tuned by minor changes in bacterial lipoprotein trafficking. Efficacy in treating A. baumannii wound infections was demonstrated in mouse trials, and it performed well against drug-resistant bacterial strains from patients in lab experiments. The research team, in collaboration with McMaster University, aims to enhance Abaucin's therapeutic attributes for future clinical use. (Click Here to Read More)
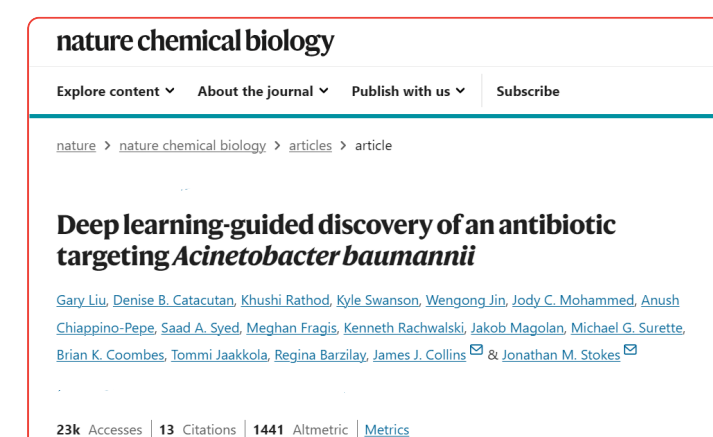
Imeglimin:
A new antidiabetic drug with a potential future in the treatment of patients with Type-2 Diabetes

A new antidiabetic drug, **Imeglimin**, shows promise in revolutionizing **Type 2 Diabetes Mellitus** treatment. It addresses key T2DM challenges by controlling gluconeogenesis, reviving beta cells, and overcoming insulin resistance. Imeglimin's impact on FPG and HbA1c levels is significant after 16 weeks of treatment, especially at **1000- and 1500-mg doses twice daily**. Backed by strong clinical evidence, Imeglimin offers a safer and more effective alternative to metformin, with the potential for combination therapy and broader patient use.

Imeglimin's unique mechanism of action sets it apart from existing antidiabetic medications, making it a promising addition to the treatment landscape for Type 2 Diabetes Mellitus. By targeting multiple pathways involved in the progression of T2DM, Imeglimin not only improves glycemic control but also demonstrates the potential to preserve pancreatic function over the long term.

The positive outcomes observed in clinical trials underscore Imeglimin's efficacy in **reducing fasting plasma glucose (FPG) and haemoglobin A1c (HbA1c) levels**, key indicators of diabetes management. This drug's ability to enhance insulin sensitivity and promote glucose uptake by cells offers hope for patients struggling to achieve optimal blood sugar control.

Furthermore, Imeglimin's favourable safety profile and tolerability make it a viable option for individuals who may not respond well to traditional therapies or experience adverse effects. As research continues to unveil the full potential of Imeglimin, its role in combination therapy and its impact on a wider range of patients are exciting prospects for the future of diabetes care.

CLINICAL PHARMACIST INTERVENTION!

A 33-year-old man was admitted to the hospital with acute necrotizing pancreatitis, multiple organ dysfunction, severe acute respiratory distress syndrome, acute kidney injury, and sepsis. The patient's current treatment included Inj MERO 1g 1-0-1, Inj OPTINEURON 1amp with 100 ml NS 0-1-0, T. CILACAR 10mg 1-0-1, T. UROSOCHOL 300mg 1-0-1, T. PRAZOPRESS 5mg 0-10, T. CLONIDINE 100mg 3-3-3 and T.PROPRANOLOL 20mg 1-0-1. When T.PROPRANOLOL and T.CLONIDINE were co-administered, the patient developed severe bradycardia because propranolol is metabolised in the liver and eliminated in the urine, both of which were impaired in the patient, resulting in an increase in the elimination half-life (~40 hours).

New AI model to detect future lung cancer risk!

Deep-learning model by MIT takes a personalized approach to assessing each patient's risk of lung cancer based on CT scans.

The name Sybil originates from Ancient Greek oracles and is now used as an AI tool for lung cancer risk assessment. Lung cancer is the No. 1 deadliest cancer in the world, resulting in 1.7 million deaths worldwide in 2020, killing more people than the next three deadliest cancers combined. Lung cancer is deadly, but early detection improves survival rates. Sybil analyzes low-dose CT scans to predict lung cancer risk with high accuracy. Despite challenges in the 3D nature of scans, Sybil was trained to detect cancer risk even in scans without visible signs. The tool aims to improve lung cancer screening, especially for nonsmokers. Ongoing research may expand Sybil's use to a broader population at risk. The project was supported by various organizations and individuals, driven by the memory of a patient named Sylvia who succumbed to lung cancer.

Despite its success, the 3D nature of lung CT scans made Sybil a challenge to build. Co-author Peter Mikhael, an MIT PhD student in electrical engineering and computer science, and affiliate of Jameel Clinic and the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), likened the process to "trying to find a needle in a haystack."

Analyzing low-dose CT scans with remarkable precision, Sybil has proven its ability to predict lung cancer risk with a level of accuracy that was previously unimaginable. Even in the face of challenges presented by the intricate 3D nature of scans, Sybil has been meticulously trained to identify potential risks, even in cases where visible signs may be absent. This breakthrough technology holds promise in revolutionizing lung cancer screening protocols, particularly benefiting nonsmokers who may not have been traditionally considered high-risk. Looking ahead, the ongoing research surrounding Sybil opens doors to the possibility of extending its impact to a wider population at risk, potentially transforming the landscape of lung cancer prevention and treatment.

PHARM.D STUDENTS' ACHIEVEMENTS

Kaushal Pawar, Chaitanya Kulkarni, Aditi Roy, and Sayantika Mandal came first at the National Pharmacy Metaverse Hackathon organized by NEC IPA-SF.

Dev Dangi came 1st at a National Level Business Model Competition "Pharmascope 2022" organized by Dr. D. Y. Patil B-School, Pune.

Our Intern Rishabh Tathed got selected for the Survey and Evaluation Committee of the ISPOR STUDENT GLOBAL NETWORK.

EDITORIALS

EDITORIAL BOARD	:	DR. ATMARAM PAWAR	**CREATIVE TEAM**	:	SWETANSHU SUBHRAJIT
		DR. VAIBHAV SURYAVANSHI			VRUSHALI DOSHI
		DR. ALI ASAD			SHRUTI PATWAL
		DR. AMOL MUTTHAL			SIMRAN SRIVASTAVA
ADVISORY BOARD	:	DR. ARUNDHATI DIWAN			SIDRA JAFFERY
		MRS. SAYALI MASAL			RISHABH TATHED
		MRS. MANJIRI GHARAT			OMKAR PATIL
CO-ORDINATOR	:	DR. ASAVARI RAUT			