MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
MANIPAL
(A constituent unit of MAHE, Manipal)

Newsletter of Innovative Communication Club (I2C)

FRONTLINE

Innovative Info on the go

FORWARD

Dr. Mallikarjuna Rao
Principal, MCOPS

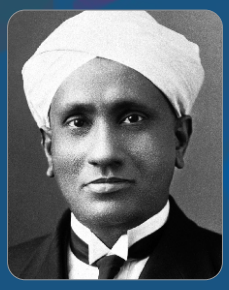
Innovative Communication Club (I2C), Manipal College of Pharmaceutical Sciences (MCOPS), Manipal are coming up with a Newsletter (Frontline). It will be a platform to communicate a variety of health-related information to all the stakeholders of the institute, faculties, students and professional bodies. It will be an excellent opportunity for students to learns new things and gain knowledge about new innovations and techniques. I wish I2C council all the best in this innovative initiation.

INNOVATIVE COMMUNICATION CLUB (I2C)

Manipal College of Pharmaceutical Sciences (MCOPS) one of the premier institutions in India provides professional courses in Pharmacy. MCOPS started offering Diploma in Pharmacy (D Pharm) education in 1963 and became a degree college for the Bachelor of Pharmacy (B Pharm) program in 1965. Eventually, MCOPS became the first college to offer a postgraduate course (M Pharm) in Karnataka in 1970 and the Doctor of Pharmacy (PharmD) program in 2008 in India.

Apart from academic excellence, MCOPS supports versatile academic activities for the overall development of the people involved. Innovative communication club (I2C) is one such stage gathering all students on one single platform. Which was started by N Udupa in 2015. I2C is committed to creating an environment of research and learning, igniting young minds, and stimulating a spirit of discovery and leadership. In the current year on the occasion of World Cancer Day I2C scheduled a talk on " Role of Oncology Clinical Pharmacist in Cancer Management" and is looking forward to organize "Virtual training on Pharmaceutical techniques involved in Drug, Design, and Analysis" on the occasion of National science

IN THIS ISSUE



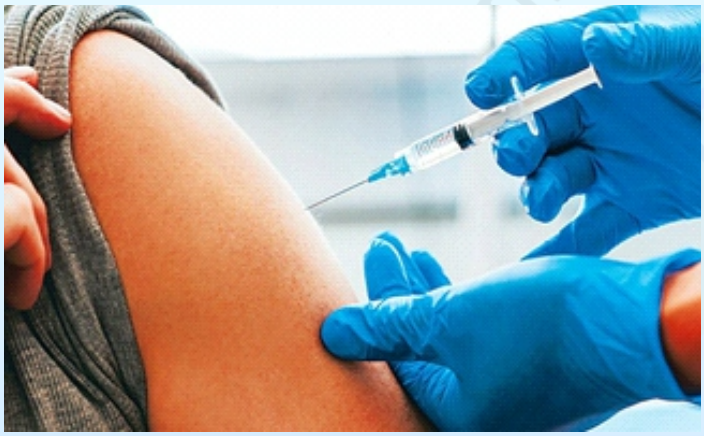
In the history of science, we often find that the study of some natural phenomenon has been the starting point in the development of a new branch of knowledge.

-C.V. Raman

Happy National Science Day

COVID VACCINE BOOSTER DOSE – REQUIRED OR NOT

Should I get the COVID Vaccine booster dose or not? This question has crossed the minds of many people around the world. To answer this question, we first need to understand what a booster dose does. Vaccines protect us from dangerous viruses and bacteria. Once you've had a shot for a particular disease, you might think you're always safe from it. But that's not necessarily the case. For some diseases, you need more than one shot to build strong immunity. For others, your protection wears off over time. And some viruses change or mutate, over time, making your vaccine less effective. You need one more jab after initial series for most vaccinations to get more protection. This extra dose of a vaccine is known as a booster shot COVID Vaccine booster dose will ensure the effectiveness of the first 2 doses, making it stronger, A potent, and long-lasting, which should help prevent the spread of the virus. vaccinations to get more protection. This extra dose of a vaccine is known as a booster shot. A COVID Vaccine booster dose will ensure the effectiveness of the first 2 doses, making it stronger, potent, and long-lasting, which should help prevent the spread of the virus. The protection offered by the FDA-approved and authorized vaccines is powerful. However, it starts to weaken after two months for the Johnson & Johnson vaccine and five months for the Pfizer and Moderna vaccines.



A booster shot extends the protection, even against the delta and omicron variants. Studies have shown that those given the third dose of Astra Zeneca (Covishield) showed better protection against all variants of Covid-19 - Beta, Delta, Alpha, Gamma, and Omicron. The Centres for Disease Control and Prevention (CDC) conducted two studies from April–December 2021 and August 2021–January 2022. This showed that being fully vaccinated plus receiving a booster provides more excellent protection from severe disease, hospitalization, and death due to COVID-19 compared to only being fully vaccinated. These observations were also backed up by a third study, published in the Journal of the American Medical Association. While a third COVID Vaccine dose would be a 'full' dose of the vaccine, booster shots being offered right now have a lesser volume than the vaccine injection, since the additional dose is only supposed to increase the efficacy range. Such as in the case of Moderna booster, you will receive half of the original Moderna dose. While booster shots are subjected to be used six months after original vaccination schedules (since it is taken to be a time when vaccine-driven antibodies start to wane). Those who are eligible for third COVID vaccination doses, a suitable dose could be offered in a shorter interval of time, usually after the 21–28-day period. According to the Food and Drug Administration (FDA), you can mix and match brands. It has authorized three vaccine boosters — Pfizer, Moderna, and Johnson & Johnson — and determined that it is safe to get a COVID-19 vaccine booster or additional dose that is a different brand than your initial dose or doses. According to VK Paul, head of India's COVID task force, no mixing of doses will take place for boosters. Those who received two doses of Covishield (manufactured by Serum Institute of India) will receive the same vaccine as the third dose. The same goes for Covaxin (manufactured by Bharat Biotech International Ltd) and Sputnik. Ongoing trials on AstraZeneca (Covishield) shot have shown improved antibody production when given as a booster shot after a two-shot regimen is complete - be it with its own shot or with Pfizer's. Taking a booster dose will continue to protect you, your loved ones, and your community against COVID-19.

- Stuti Khatuka,
Second Year, B.Pharm

MYOPIAX ® - NEW WAY TO CURE MYOPIA

In recent years, the predominance of myopia has been rising quickly. Early onset of Myopia is related with an expanded risk of sight-undermining visual problems over lifetime. The development of childhood myopia is of great concern. Current report suggests that the prevalence of myopia is expected to increase around 50% by 2050.

What is MyopiaX®?

MyopiaX® is a smartphone application that provides a treatment to slow the progression of myopia in children and adolescents, When used together with a virtual reality headset and a Bluetooth controller. It is a potentially innovative, non-invasive method to control myopia. It is portable, fun, and easy to handle by children. It uses patented light-based technology to activate a network of cells in the retina to increase retinal dopamine, a neurotransmitter, which plays an important role in visual signaling and ocular growth egulation. Since the first publication in 1989, the research on the inhibitory effect of dopamine on myopia development has been a leading hypothesis for its control. Evidence supports the light-stimulated dopamine release hypothesis for myopia management. It is well known that intense light causes dopamine release. And research in animal models has shown the importance of normal light exposure for ocular development regulation. Experimental myopia has been shown to be inhibited by both dopaminergic drugs and

A concept of how the treatment process will take place

bright light exposure. Time spent outside has been shown to protect children from developing myopia. The greater illuminance of outdoor light compared to conventional indoor illumination is thought to be the cause of this effect, which is mediated by retinal dopamine release. MyopiaX users receive the digital therapy while playing an entertaining game that challenges their response time, memory, and object recognition. Several stages have been established to keep kids engaged during the treatment, and game development is still on. The MyopiaX app is simple to use, and the game is enjoyable to play, according to feedback from usability studies with children and their families. Dopavision is currently preparing to start a multicentric randomized controlled study in five European countries to assess the safety and efficacy of MyopiaX as a digital method to slowing myopia progression in children and adolescents. The clinical examination of MyopiaX will be aided by the recent closure of a €12 million Series A fundraising transaction led by Seventure Partners and Novartis Pharmaceuticals.

- Sreevishnu Unnikrishnan Nair
First Year Pharm D

THERAPEUTIC DRUG MONITORING IN PSYCHIATRY

Therapeutic Drug Monitoring in psychiatry involves testing the levels of absorption and effectiveness of various psychotropic drugs in the human body. According to recent research elucidation, about 9.6% of women and 6% of men experience depression in a period of 12 months around the world. Psychotropic drugs have been proven effective for the treatment of mental illness along with non-therapeutic practices. Therapeutic drug monitoring of several psychotropic medications has been efficient in the enablement of minimized limitations of their metabolism and combatting the high rates of poor compliance with many psychiatric disorders.

The brain is the main site of action for psychotropic drugs. Most psychotropic drugs are lipophilic (lipid-soluble) in nature and diffuse into blood easily, and enter the target organ, due to their excellent ability to penetrate the cell membrane. However, to be principally eliminated by the kidney, they need to be converted into hydrophilic molecules (water-soluble), which causes accumulation of the drug molecules, in turn leading to drug toxicity, resulting in adverse side effects. This can be detected using TDM. TDM can also indicate nonadherence, estimate the clinical response of the drug, scrutinize drug interactions, affirm existing pharmacokinetic interplay and show the impact of pharmacokinetically relevant comorbidities.

Multiple research projects have been mediated in the last decade studying the enzymes involved in the metabolism of psychoactive drugs and the genetic variability in the undertaking of these enzymes. It has been revealed that the Cytochrome P450 system plays a major role in the metabolism of psychoactive agents and the enzyme CYP2D6 is mainly responsible for the metabolism of popular psychotropic drugs like Clozapine, Amitriptyline, Venlafaxine, etc. though other enzymes such as CYP1A2, CYP3A3/4, or CYP2C19 also facilitate metabolism. The majority of the population showcases extensive metabolism by these enzymes, some proportions demonstrate poor metabolism which could be possibly due to autosomal recessive traits caused by mutation or deletion of both alleles. Enzyme CYP2D6 shows ultra-extensive metabolism in some individuals, resulting in reduced drug concentrations at standard doses. Genotyping of the CYP450 enzymes has recently entered clinical studies and in the future, the information acquired from TDM as well as genotyping can substantially facilitate the identification and correct management of individuals having varying absorption levels and metabolism of the psychoactive agents.

The foundation of modern TDM was established in the 1970s which included monitoring of epileptic patients on Phenytoin. Therapeutic drug monitoring was based on the therapeutic index where the subjects were expected to have optimal responses. TDM in the field of psychiatry marked its beginning with tri-cyclic antidepressants and the pre-existing blood concentration-effect relationships. The current way of monitoring TDM has been initiated. In this process, the first outcome of a subject's TDM is taken as a reference and compared with the expected amount of drug that is to be absorbed along with inter-subject reference values. After a time interval, the second TDM parameter obtained from the same subject is compared with their previous record. The results are then used to determine the metabolite of the parent compound which mediates in scrutinizing the TDM procedure based on metabolite-parent ratio within the subject over time. Blood sampling for determining the drug level does not assure required information, since it is affected by many factors such as the time of obtaining the blood sample, patient's clinical state, the analytic method used, etc. Therefore, before acquiring the blood sample, the influencing factors must be considered carefully. TDM for psychotropic drugs includes

sampling organization and psychoactive drug-blood concentration relations for individual dose maintenance.

In conclusion, Therapeutic drug monitoring in psychiatry is an essential tool for collecting pharmacokinetic data for a large-scale heterogeneous population after the launch of a new psychotropic drug in the market as well as the study of drug toxicity concerning the drug. Along with CYP genotyping, it will prove to be an essential tool for dose optimization as well as drug safety and will provide a better quality of treatment for people struggling with mental illnesses.

- Rajeshwari Subramanian
Second Year, B.Pharm

ARTIFICIAL INTELLIGENCE IN DRUG DISCOVERY

Drug discovery has been an arduous and labor-intensive process since time immemorial that could cost millions of dollars and years of development time. Though recent

decades have witnessed enormous advances in this field, compounds fail to produce any conclusive result before they reach clinical phases.

Drug discovery & Artificial Intelligence (AI): Recent developments in this technology have given drug discovery an unprecedented edge by minimizing guesswork/ futile trials and expediting research protocols. With the massive R&D budgets, pharmaceutical companies must spend to produce a new drug, it's no wonder that the prices of medicines are so high. With this fact in mind, it's easy to see why many entrepreneurs and scientists are looking into alternative drug discovery methods — **and one such method is artificial intelligence in drug discovery**.

Artificial intelligence allows developers to organize data, identify, test potential drug molecules and predict potential drug candidates, as well as design human clinical trials to determine the most effective dosage. To obtain a better understanding of this method, let's look at a few of the benefits, the artificial intelligence technology offers.

Predicts Drug Potentials: Conventional methods of drug research can be expensive, time-consuming, and extremely inaccurate. However, artificial intelligence programs have been designed to predict drug potentials through massive data analyses. These systems are capable of running hundreds of thousands of simulations and generating probabilities for a certain drug molecule's success before it's even synthesized, aiding researchers to save time and money by filtering unsuccessful drugs from the early stages of R&D.

Generates New Compounds: Artificial intelligence can also generate new compounds based on existing compounds or chemical reactions, which is known as retrosynthesis. Artificial intelligence is equipped to program itself through self-learning and reverse engineering, which allows it to develop unique compounds that are more likely to be effective.

Reduces Costs and Increases Speeds: Artificial intelligence can help pharma companies make decisions quickly by analyzing massive amounts of data, which facilitates cost reduction. Artificial intelligence programs take the input from researchers and generate potential outcomes based on this information. They carry out a huge percentage of virtual trials which researchers would typically have to do manually, thus saving time. Further, with the right set of rules, artificial intelligence can easily analyze massive data and make accurate decisions, which helps pharma research companies in cost cutting and efficient budgeting.

Increases Efficiency: Artificial intelligence can also help increase efficiency by identifying patterns in huge volumes of data, manual pattern identification of which would be extremely tedious and challenging. This is known as machine learning, which allows programs to learn from the information they are given and make better decisions based on this input.

Keeps Up with the Pace of Drug Discovery: In the pharmaceutical industry, there are many challenges facing researchers. With an exponentially increasing amount of data, humans can simply not keep up with the pace of drug discovery. Artificial intelligence systems help keep up with this pace by generating new compounds and predicting potential results at a quick rate.

Learns From Mistakes: Artificial intelligence systems can also learn from the mistakes their predecessors have made, such as learning from unsuccessful molecules. This is also known as machine learning, which can be programmed by humans or by AI. This allows artificial intelligence to improve over time because it can learn from its mistakes and give more accurate predictions for new potential molecules. Exscientia and in-silico medicine are a few of many companies that are currently employing AI in the drug discovery process. Artificial intelligence in drug discovery seems like a much-needed innovation to the pharmaceutical industry and will hopefully lead to fewer failures and more effective treatments. As a result, much lesser costs for the end-consumers, the patients.

- Kartik Agarwal
Second Year, B.Pharm

COVID-19 PANDEMIC A CURSE TO THE WORLD AND BOON TO THE PHARMACEUTICAL COMPANIES?

COVID-19 pandemic was like a thunderstorm in the middle of a sunny day. No one thought or ever expected that this virus discovered in China would spread all over the world and change the fragile balance of human life. Had we ever imagined life inside a PPE kit and face mask for years?

Healthcare systems crippled to their extremes causing a devastating impact on many countries. It was due to the unpreparedness of nations to fight against such crises. COVID-19 did cause social, political, environmental, financial, physical, and mental health impacts on the community.

It created political rivalries between nations for sharing of resources as well as to some it was an opportunity to strengthen their bonds. India did align with its motto of Vasudhaiva Kutumbakam by helping the world fight against COVID-19 by supplying medical essentials, testing laboratories, professionals, and medications like Hydroxychloroquine.

For the first time in mankind's history, we saw lockdown across nations, people being stuck at places for months due to travel restrictions for the longest period. People were unable to meet their near and dear ones, isolation and quarantine were adding to mental pressure. As everyone remained cooped up in their houses for lengthy periods of time, anxiety, depression, and family issues surged.

With schools, colleges, and all educational institutions being shut down everything shifted to the virtual world. Students lost the important years from the learning experience in their life. Work from home concept took a boom adding pressure within families. We all know the dark side of virtual learning and working. The economy came to a standstill. People faced a crisis due to the loss of jobs especially the daily wages workers who found it extremely difficult to survive. However, 2020 was a blessing in disguise

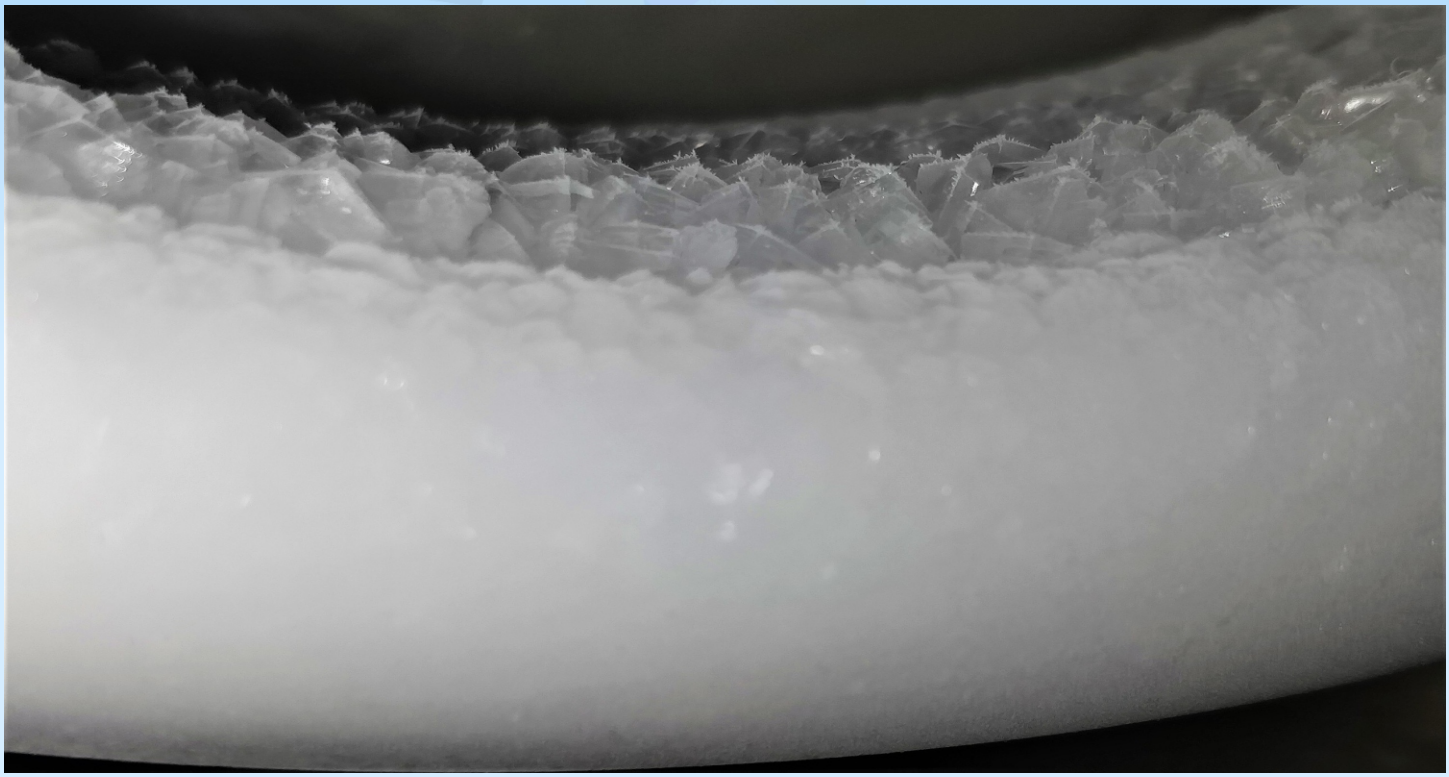
for nature. Beautiful stories about dolphins bringing corals to the shores, animals walking freely on roads, cleaner air in Delhi, Los Angeles made us feel that mother nature had her revenge. Although the pandemic has shattered most industries worldwide the Pharmaceutical Industry has taken a boom leap. Indian Pharmaceutical Industries have converted this crisis into an opportunity. Pandemic has catalyzed the Indian Pharma giants to manufacture vaccines and COVID treatment medications rightly justifying India being called “The Pharmacy of the World”. Indian Pharmaceutical Industry stands 3rd largest by volume globally. From the current growth of $41 Bn, it is expected to grow to $65 Bn by 2024. Companies began investing heavily in R & D, made the best use of science and technology available with the hope of a speedy return on investment. Companies began doing activities to maintain their reputation and stand against competitors.

AstraZeneca the largest vaccine manufacturer donated 9 million masks, Eli Lilly set up Lilly's Diabetes Solution Centre, Bayer and Novartis donated millions of doses of Hydroxychloroquine because of the expected revenues through sales of COVID vaccines and medications. Pfizer's pneumonia vaccine Prevnar-13 got tremendous sales because of terminally ill COVID patients. Gilead Sciences the manufacturer of Remdesivir (Veklury) received Orphan Drug Designation which gave huge tax benefits and protection from low-cost generic and biosimilar competitors. Companies like Pfizer, BioNTech, and Moderna made combined profits of $65000 every minute from their highly successful vaccines. AstraZeneca made $4Bn from its COVID vaccines sales. Also, as people did panic buying it increased sales of OTC medications, hand sanitizers, and disinfectant sprays. As diet and lifestyle changed and fear of shortage occurring people bought medications for diabetes, hypertension in excess which boosted sales indirectly. Today we see the huge market captured by Dolo-650 worth 567cr, popularly known as India's favourite snack on social media. It gained an advantage of the pandemic situation amongst all other paracetamol brands as it can be given to all age group patients without any major impacts on comorbid conditions.

Overall COVID-19 Pandemic has caused both positive and negative impacts on mankind. The financial gains brought by the pandemic and the funding that has been fed into pandemic-related research means COVID-19 has primarily been a source of growth, rather than decline, for the pharmaceutical industry.

- Srushti Choughule
M Pharm Pharmaceutical Administration

SCIENTIFIC IMAGE CORNER



Lyophilization: *For better stability and storage Lyophilization is the process of removing water or any solvent from the product by sublimation. Sublimation is when a solid (ice) changes directly to a vapor without first going through a liquid (water) phase. Thoroughly understanding the concept of sublimation is a crucial building block to gaining knowledge of freeze-drying. Two parameters need to be considered during lyophilization total amount of solvent in the batch and the rate at which solvent sublimates can cause the condenser or cold trap to overload. The solvent vapor gets condensed and acclimates as ice on the surface of the cool trap (condenser), which is shown in the image.*

- Naga Thirumalesh
Dept. of Pharmaceutics

ERSTWHILE

I2C COUNCIL 2020-21

INNOVATION NEEDS TO BE A PART OF OUR CULTURE. WHAT STARTED WAS A VISION BY DR. N UDUPA TO PROMOTE INNOVATION AND RESEARCH IN THE FRATERNITY. IT WAS A LEARNING PROCESS FOR US AS WELL AS WE STRUGGLED TO INNOVATE WAYS TO MOTIVATE STUDENTS AND PEERS TO KEEP THE RESEARCH ALIVE THROUGH THE COVID TIMES. IT WAS A BEAUTIFUL JOURNEY WORKING WITH THE COUNCIL MEMBERS AND FACULTY MENTOR DR. USHA NAYAK. BEST WISHES TO THE NEW COUNCIL TO TAKE THIS LEGACY OF INNOVATION AHEAD AND KEEP IGNITING THE CURIOUS MINDS.

Syeda Alisha Md Isha Ali
Ex-President

I FEEL PROUD TO BE A MEMBER OF I2C COUNCIL MEMBER OF 20-21. WE COULDN'T DO MUCH TO THE COUNCIL BECAUSE OF THE COVID PANDEMIC. BUT WHAT EVER WE CONDUCTED I FEEL THAT WAS SUCCESSFUL. I WOULD LIKE TO THANK DR USHA Y NAIK FOR GIVING ME THIS OPPORTUNITY TO BE A COUNCIL MEMBER. I ALSO WOULD LIKE TO THANK OUR PRESIDENT ALISHA FOR BELIEVING IN ME. AND ALL OUR COUNCIL MEMBERS FOR THEIR CONTINUES SUPPORT. AND I WISH THE GOOD LUCK FOR ALL OF YOU GUYS FOR YOU FUTURE I2C PLANNINGS.

Muralidhar Pisay
Ex-Joint Secretary

HII! MY EXPERIENCE BEING A 12C MEMBER WAS GREAT. I ENJOYED WORKING WITH MY FELLOW COLLEAGUES AS A TEAM, AND HOPE THAT IN COMING DAYS THIS COUNCIL WILL BE ABLE TO ENLIGHTEN US REGARDING THE VARIOUS ASPECTS OF SCIENCE, RESEARCH AND TECHNOLOGY. THANK YOU

Arpita
Ex-Tribunal Committe Member

IT WAS A GREAT EXPERIENCE IN CONDUCTING THE ONLINE CONFERENCES , SELECTION OF SPEAKER PREPARATION FOR EVENTS ETC. IT IS A REMARKABLE TAKEAWAY FOR ME FROM MCOPS.

Putta Sanjay Kumar
Ex-Secretary

IT WAS A VERY KNOWLEDGEABLE AND FULFILLING EXPERIENCE TO BE A PART OF THIS TEAM AND WORK TOGETHER TO HELP OUT EACH OTHER, ALL THE BEST TO NEW TEAM, AND WE WILL BE THERE TO SUPPORT NEW TEAM IN FUTURE..!!

Sumit Birangal
Ex-Treasurer

Role of Oncology Clinical Pharmacist in Cancer Management :

A webinar on World Cancer Day

As part of the World Cancer Day awareness, I2C organized a webinar on the topic "Role of Oncology Clinical Pharmacist in Cancer Management" on 4th December 2022 at 03:00 PM through MS Teams Platform. The well renowned Oncology Clinical Pharmacist Dr. Priyank Tripathy, from Health Care Global Enterprises (BGS) Ltd., Bangalore delivered the session. Mr. Muhammed Rashid, (Vice-president, I2C), PhD Research Scholar moderated the whole session.

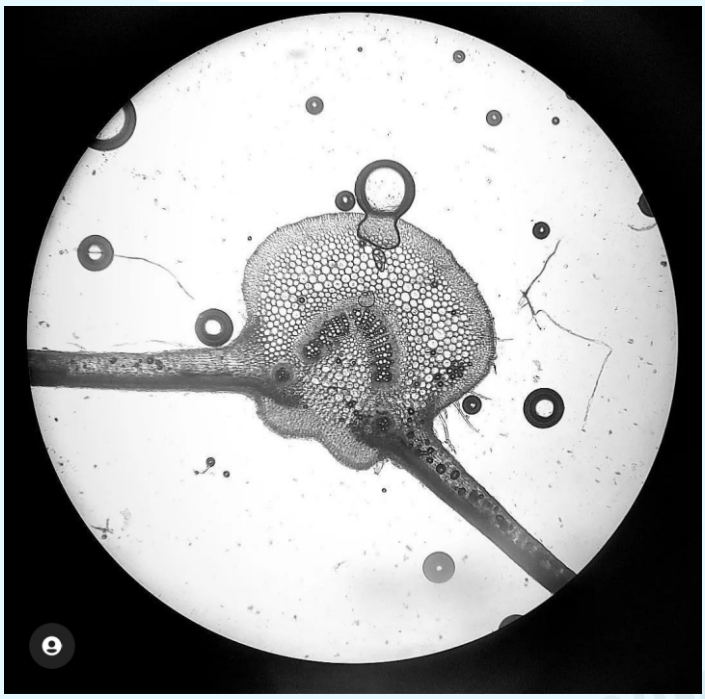
The discussion started with the role of oncology clinical pharmacist in dose monitoring during the chemotherapy, new protocol design for various new therapies, education to the patient, team contribution to the use of anti-infective including antimicrobials, antifungal and antivirals based on the type of organism and site of infection. Dr. Priyank also focused on the topics like prophylaxis for certain treatment of a patient with immunocompromised and infectious diseases. The session also emphasised on what prophylaxis is considered during the surgery or for solid malignant patients, monitors the safety of patients for any reoccurrence, management of drugs toxicities and analysis of adverse drug reaction in patients. Communication to respective agenesis regarding the toxicities of drugs, training of other health professionals, identification of medicational errors, contribution to the translational research, patient protocol development, cross verification of

all parameters and sample collection from the infusion patients was also discussed during webinar. At end of the webinar, Mr. Ajinkya Nikam (President, I2C) proposed the vote of thanks for smooth conduct of the webinar.

-Mohammed Rashid PP
Research Scholar, Dept. Pharmacy Practice

-Bharath H B
Research Scholar, Dept. Pharmacology

SCIENTIFIC IMAGE CORNER



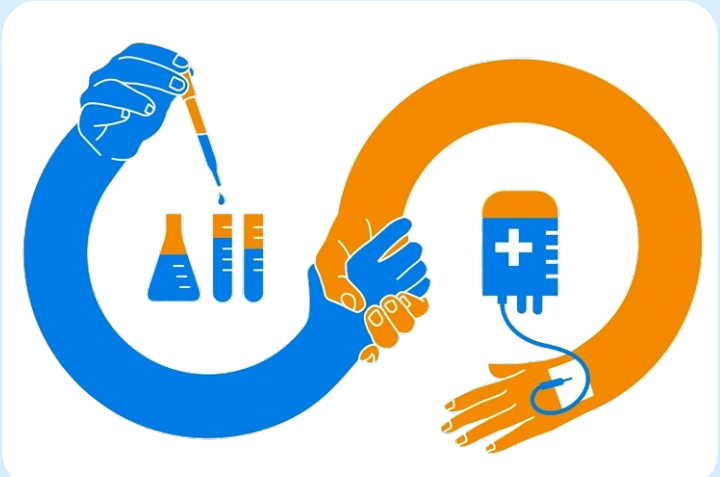
TS of Vasaka Leaf

-Vaishnavi Kulal, Gagan Poojary
3rd Year B.Pharm

ARE INDIANS BEING USED AS GUINEA PIGS?

Supreme Court of India ruled many years back that there needs to be more protection for the Indian people, who for years have been used as “guinea pigs” by pharmaceutical companies, including those from the United States. Still in March 2016, the drug regulators of seven states have alleged that 27 medicines sold by 18 major drug companies in India are of “substandard” quality, citing grounds such as false labelling, wrong quantity of ingredients, discolouration, moisture formation, failing dissolution test and failing disintegration test.

Drug trials, the hot word in the pharmaceutical industry in India, are posing a danger to those who are persuade or fooled into allowing themselves to be tested on for new drugs. This forced Justice RM Lodha of the Supreme Court, while hearing a petition, to observe:“Uncontrolled clinical trials are causing havoc to human life. There are so many legal and ethical issues involved with clinical trials and the government has not done anything so far.”



Drug trials are a necessary part of the research a company has to do before it releases a new formulation, and the objection is not to the testing but to the lack of ethical guidelines followed in the country. These are laid down in the Helsinki Declaration issued by the World Medical Association. Following this, similar guidelines were introduced in India by the Indian Council of Medical Research (ICMR). But there is no law that makes the guidelines binding on those involved in conducting trials. The basic premise of a clinical trial is that a subject should participate voluntarily and since this is not done with the largely poor people on whom the trials are conducted, they will continue to be done unethically. Though the earliest clinical trials in India were conducted in 1995 by Eli Lilly and Pfizer with many other pharma giants following in 2000, the really big push came in 2005 with the introduction of patent protection laws. India attracts multinational companies to clinical research because of its ethnically diverse pool of patients, low literacy, poor regulation, and low costs of conducting clinical trials which can bring down R&D costs by 60 percent. Already some 350,000 people have been part of these drug trials, many of them because they are being paid or because they think they are getting free medicine. Their numbers will increase as the number and intensity of drug trials increase. Unless regulation is tightened and penalties made severe for those who do not follow norms, the unnecessary loss of life would increase. One simply can't make the money by keeping someone's life at risk. **Human's life does matter!!**

-Ajinkya N. Nikam
Research Scholar, Dept. of Pharmaceutics

FROM THE DESK OF PRESIDENT OF I2C

Dear Members, Sponsors and Colleagues,

As I enter my term as President of the I2C (2022-2023), I notice that I2C at large has never been more relevant and important for those of us practicing pharmaceutical sciences in MCOPS and across the nation. I've come to think of the I2C network as one very large, best in class club. A team that provides abundant opportunities to learn, teach, mentor and share top quality innovative ideas. A team that enables us to advocate, brainstorm, give back to our communities, meet, network and socialize with friends and colleagues all over the MAHE and nation. The changes around us—whether social, political, technological, scientific, economic or otherwise—require that we help our peers navigate through new and increasingly complex scientific landscapes, which profoundly impact the research community for which we work and the pharmaceutical profession at large. In many instances, we are responsible to help shape those new innovative landscapes. Our terrific I2C community of professionals, including all our sponsors, is a network on which I have become increasingly reliant when facing these new challenges and opportunities.

I'm proud of our Chapter's successes over the period, particularly in providing more opportunities for meaningful engagement of our members and sponsors, introducing innovative programming formats and topics, and providing professional development and outreach opportunities. In the year ahead, we will continue these initiatives, as well as additional programming designed for the different stages of your career, virtual programming and events held in collaboration with other chapters in this arena and beyond.

Thank you, members and colleagues, for your continued participation and enthusiasm in our professional community and sponsors for your incredible support and advice. Finally, I'd like to give a special shout-out of appreciation to our Principal Dr. C Mallikarjuna Rao and I2C's Faculty Coordinator Dr. Usha Y Nayak for the valuable guidance and support they provide each day. Thank you all!

-Ajinkya N. Nikam
President, I2C
Research Scholar, Dept. of Pharmaceutics

EDITOR COLUMN

Hi,

I am very happy to be a part of Innovative communication club (I2C). I2C Is a helpful platform for the entire students of MCOPS for getting up-to-date with the research environment. I2C will publish research newsletter in every 2 month. This newsletter has been created with join efforts of the all members of the I2C.Moreover, thanks to all the content writers for their contributions. Due to the page restrictions some of your articles could not include in this issue, which will add in upcoming issue.

I would like to thank, Swetha (Research Scholar, Dept of Pharmacy Practice), Jayashree (Research Scholar, Dept of Pharmacy Practice), Gasper J Fernandes (Research Scholar, Dept Of Pharmaceutics) for their valuable help. Hope this magazine become a success with the help of its readers.

Share your knowledge gain more knowledge !

-Jerin James
Research Scholar, Dept. Pharmacy Practice

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LEAD MEMBERS