DR.RAJENDRA GODHE COLLEGE OF PHARMACY, MALKAPUR

KSHITIJ

2021

MESSAGE

CHAIRMAN'S MESSAGE

Despite difficulties, always keep optimism. 'I can overcome these difficulties.'
That mental attitude itself will bring inner strength and self confidence.
– Dalai Lama

Hon'ble Shri. Yogendra R. Gode

Dear Students and Faculty of SJIPR

My greetings to you and your families and I am glad to see you back to the institute.

25 months ago we were suddenly pushed to one side of a massive river of uncertainty and hardships and with absolutely no inclinations of how long that journey would be. That period was definitely a very trying and testing time for all, but also a time for everyone to contemplate, renew and renovate themselves. We are now beginning to see the other side of that river.
Each one of us has come through with different learnings from this experience and I'm sure it has made each one of you a stronger person.

The pandemic changed the way many things are done and we are now getting accustomed to what is described as the 'new normal'. The information technology industry brought in the major change and all the innovative technology kept us connected with people across the globe. Business, communication, healthcare, education, entertainment, every sector has been impacted by the information technology revolution. It is therefore essential for each one of you to engage in and learn the recent developments in information technology relevant to your field. Data Analytics, Machine Learning, Artificial Intelligence are all the newer areas that are associated with the Healthcare Industry and Pharmacy graduates with knowledge in these areas will surely be in demand.

During the pandemic we also saw a major change from offline or online education. There were teething problems but I am happy to say that we were well equipped with IT infrastructure and our faculty got acquainted very quickly and excelled in the online mode of teaching. This major change is very beneficial as the online mode reduced need for physical presence and provided opportunity to listen to, and experience the knowledge shared by renowned faculty from distant places.

I am glad to see the enthusiasm in faculty and students though you are all back together after a long period and I appreciate the efforts that you have all taken to renew the activities and bring back the lively atmosphere to the campus.

Editorial Massage

I am extremely happy to hand over this issue of E Magazine 2021 - 22 which has been serving as a platform to highlight the glance, achievements, events and many more of DRGCOP Family.

I would like to place on record my gratitude and heartfelt thanks to our beloved Principal,Dr P.K.Deshmukh for his constant afflatus and thriving auspice for bringing out this institutional E Bulletin. I am also grateful to all teaching staff, non-teaching staff and students for extending their cooperation and contribution to make this effort a success.

I wish happy voyage to the readers of this bulletin and it will be satisfy the readers and even be electrifying to them.

Dr. Gautam Mehetre

Editor in Chief

E-Bulletin-2021 - 22

Principal's Message

Prof.Dr. P.K. Deshmukh sir

PRINCIPAL'S MESSAGE

Success is to be measured not so much by the position that one has reached in life as by the obstacles which he/she has overcome.

– Booker T. Washington

Two years ago the pandemic brought life to a standstill, without any indications of what lay in store for each one of us... Each one has gone through a difficult phase, each one has seen life in a different perspective, but each one has emerged with a renewed spirit, a renewed passion for life. Each one has learned to appreciate that difficulties help us to realise our hidden potentials, they help us to channelize our efforts towards success, and that, my dear students, is the strength that will help each one of you achieve your goals towards fruitful careers.

Change is inevitable, change is what pushes us out of our comfort zones and accepting change positively helps one to look forward to better prospects. The pandemic has brought changes in several aspects of life and how we accommodate and adapt to the changing situations will decide how we progress.

So my dear students be open to new methods of learning, new technologies, new areas of research in the field of pharmacy. Identify your areas of interests. The online learning platforms provide you abundant opportunities for skilling and upgrading your knowledge and making yourself industry-ready. The college is providing you these courses through Coursera, edX and Swayam-NPTEL. So keep learning and ensure that you are ahead of your peers when competing for the next stage of your career.

I am grateful to the faculty who have gone out of their way to learn and familiarize themselves to the new teaching-learning methodologies for the benefit of the students Today they are role models to students in accepting and adapting to the changing scenarios in education and I sincerely appreciate their efforts.

Index

TECHNOMANIA

MICROPLASTICS

Tiny plastic fragments are found in every environment on Earth, even those with no human inhabitants.

What are Microplastics ?

Plastic is a solid, synthetic material made from oil and gas or renewable organic material from plants. It is the third most abundant material after concrete and steel and is hugely important for society due to its uses in many different sectors, including medicine, construction, food packaging, electronics and transport. Microplastics are microscopic pieces of plastic debris. You need the help of a microscope to see most of them, although the formal definition includes plastic particles up to half a centimeter – big enough to see with the naked eye.

Where do Microplastics come from ?

Microplastics shed from a plastic litter due to sunlight exposure, which causes the material to weaken over time and fragment. They'll also come from plastic items because of wear and tear. Microplastics move throughout the environment via both human and natural processes. For example, the microplastic fibres released from your clothes during laundering are rinsed down the drain where between 72 to 94 per cent is captured in sewage sludge during wastewater treatment. This sludge is then applied to the land as an important soil conditioner. Winds can mobilise the soil in dry conditions, potentially blowing the microplastics away. This can also happen to microplastics polluting roads, cities and the surface of the oceans, distributing them far and wide. The complexity of Microplastics sources and journey as they cycle through the Earth's environments means they are incredibly challenging for both scientists and environmental managers to study.

How widespread are Microplastics ?

Over the last few decades, the evidence on the extent of microplastic pollution has been growing. Originally perceived as a marine issue, with an estimated 15 to 51 trillion microplastic particles floating on the ocean's surface, scientists have recently discovered they also contaminate rivers, soils and air. They have even found their way into some of the most remote regions, including the poles, the equator, the deep ocean floor and even Mount Everest.

Are humans ingesting Microplastics , and if so at what rate?

The short answer is: yes, with the discovery of microplastics in human stool confirming this. Microplastics have been found in a range of food and drinks, mostly bottled and tap water, shellfish and salt. They've also been measured in indoor dust, which may settle on our food and drinks. Current high-end estimates of the rate of ingestion range from 52,000 to billions of microplastics per year.

What can we do to limit our exposure to Microplastics ?

Ultimately, minimizing everyone's exposure requires a global effort to limit the microplastic release to the environment. Things you could do to contribute to this include avoiding single-use plastic while shopping (and bringing your own bag); reducing your plastic waste; washing your clothes less often and using a laundry bag to catch some of the fibres which go down the drain. When in doubt, I try to stick by the '5 Rs': refuse, reduce, reuse, repurpose and finally, recycle. Whatever the solution, it's important that it's better for both the planet and people.

Compiled By:
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HIGH TECH CAPSULE- TO DECREASE THE USE OF INJECTIONS.

High Tech Capsule is a high potential pill to minimize the use of injections extensively - for injecting insulin and monoclonal antibodies. An MIT-led research team has developed a capsule containing drugs essentially to replace insulin injections for type 1 diabetes patients who need to take injections by themselves daily. The capsule containing insulin is about the size of a blueberry, which contains a small needle made up of compressed insulin, which is injected after the capsule reaches the stomach to? release insulin. While testing on animals, researchers showed that the capsule can deliver enough insulin to tackle type 1 diabetes as compared to insulin injections and can be used to deliver other protein drugs.

Let us have a look at the distinctive features of the capsule:- Capability to Self-Orient:-The researchers got the idea of self-orientation and the predictable landing pattern of the capsule from the tortoise known as leopard tortoise. This tortoise can roll onto its back because of its high, steep dome shell that allows it to right itself in a correct position.

Leopard Tortoise

The capsule is just made up of one needle, allowing it to inject the drug into the interior of the stomach, then it is broken down by stomach acids. Nearly 100% compressed, freeze-dried insulin is present on the tip of the needle. Within the capsule, the needle is attached and held in place by a spring disk which is made up of sugar. When the person swallows the capsule, the water in the stomach dissolves the sugar disk, releasing the spring which then allows the needle to inject the drug i.e., insulin into the interior of the stomach wall. Because our stomach wall does not have many pain receptors, the patient would not feel the pain produced by the injection. To ensure that the drug is injected into the stomach wall only, scientists have designed their systems in such away that no matter how the capsule lands into the stomach, it will be able to orient itself correctly, so that the tip of the needle is in contact with the stomach lining and injects the drug there itself. Once the tip of the needle is injected into the stomach wall, it will release the drug and the insulin released dissolves at a rate that can be controlled by the researchers as the capsule is prepared. In one study conducted, it took about half an hour for the insulin to be fully released into the bloodstream. Patient compliant:-When the tests were conducted on pigs, it showed that the 300 micrograms of insulin can be administered successfully. More recently, it was shown that the dose could be increased up to 5 mg, which is comparable and like the dose that the patient with type 1 diabetes needs to inject. When the capsule is swallowed and once the needle injects insulin and releases its content, the capsule can then harmlessly pass through the digestive tract. The researchers found no adverse effects associated with the capsule nor with the shaft of the needle as they both are made up of biodegradable polymer and stainless-steel components. The MIT along with Novo Nordisk is working, developing and optimizing the technology to produce desired capsules. The researchers at MIT and Novo Nordisk believe that this type of drug delivery system can be used not only for insulin but also for any protein drug that normally needs to be injected, such as immunosuppressant's to treat rheumatoid arthritis and inflammatory bowel disease. The aim of the researchers at MIT and Novo Nordisk is to make drug administration easy for the patients and especially for those medications which need to be injected. This type of emerging research in the field of medicine is very beneficial to the patients and serves to be more patient compliant.

TECHNOMANIA

BLOOD-BASED ATN BIOMARKERS OF ALZHEIMER'S DISEASE

Introduction: In a recent study on Alzheimer's, a neurodegenerative disorder, the evaluation of specific blood proteins including Amyloid-beta("Aβ"), Neurofibrillary tangles (Tau, "T") and Neurodegeneration("N") are emerging as candidate Biomarkers for AD. An invasive CSF sampling for protein measurement and/or imaging by Positron emission tomography (PET) is done. ATN biomarkers, specifically, phosphorylated-tau[p-tau] and neurofilament light polypeptide [NfL] can indicate AD progression through a possible less-invasive blood-based test. Though, their relatively constant changes might have unclear stage-specific patterns during AD progression. In this study, a Proximity Extension Assay (PEA) technology to evaluate protein profiles of AD plasma was adopted. specifically, in Hong Kong Chinese AD cohort consisting 106 patients of AD and 74 healthy controls (HCs), they quantified 1160 plasma proteins and revealed 429 proteins that dysregulated in AD patients. Further identified 19-protein biomarkers panel and validated its high accuracy for classifying AD and associated endophenotypes in an independent cohort. This showed dysregulation of certain plasma biomarker proteins in specific stages of AD. Thus, they determined a comprehensive AD plasma proteome profile and established a high-performance plasma biomarker panel setting a foundation of developing a Blood-based test for AD screening and staging.

Methodology:

i. The discovery cohort comprising 180 Hong Kong Chinese people >=60 years old and 97 of validation cohort underwent a medical, clinical, cognitive and functional assessment by Montreal Cognitive Assessment (MoCA) and neuroimaging using MRI. Only AD patients were involved in study. Age, sex, years of education, medical history of CV disorders and WBC count were recorded.
ii. The Aβ42/40 ratio, tau, p-tau 181 and NfLs levels were measured in 350µL plasma. The levels of 1160 proteins were quantified in 20µL plasma using PEA technology. Selected assayed proteins were validated using ELISA.
iii. AD-associated alterations in plasma proteome were determined by relation between normal protein levels and AD phenotypes using linear regression model (relation between one /more predictor variables) involving age, sex, CVD and population factors.
iv. Top AD-associated plasma protein in a cluster (formed by Hierarchical agglomerative clustering) was named as "hub" protein.
v. Gene basics analysis of candidate proteins and an enrichment analysis (i.e. enriched or depleted genes or proteins) of cell types in peripheral blood system was pe rformed with reference to their RNA transcrip
vi. Only individuals in whom the 19-protein biomarker panel and plasma ATN biomarkers were detected were included in further analyses.
vii. For AD classification using multiple candidate factors, three models were established on the basis of (1) Age, Sex and plasma levels of Aβ, tau and NfL; (2) the 19-protein biomarker panel; (3) Aβ, tau and NfL plus 19-protein biomarker panel.

AD classification accuracy between two models was done by DeLong method (comparing two Area under curves to provide confidence interval and standard errors). The significance of relation between AD-associated endophenotypes and candidate plasma proteins as well as AD severity determined by 19-protein model was performed by Linear regression analysis.

Results and Discussion:

The plasma Aβ, tau and NfL levels, collectively termed as plasma ATN biomarkers exhibited consistent alterations in blood of AD patients. Hub proteins in derived clusters represented the overall plasma proteome. Correlation analysis of the 19-Hub proteins with the plasma ATN biomarkers revealed that 10 hub proteins were correlated with the Aβ, tau and NfL levels, whereas the remaining 9 hub proteins were not correlated with any of them. In the discovery cohort, AD classification based on the plasma ATN biomarkers had a maximum accuracy of 87.35%. Moreover, Integrative model of three ADN biomarkers in 19 hub proteins did not improve the accuracy of AD classification. But it's consistent that 19-protein panel captures both ATN-dependent and ATN-independent changes in AD plasma accurately distinguishing AD patients from HCs and also reflect AD-associated endophenotypes. Significantly, plasma p-tau181 has emerged as a more accurate and specific blood biomarker of AD that indicates the progression of tau pathology in the brain. Tau pathology helped classify AD in terms of cognitive performance, brain region volumes and plasma biomarkers providing basis for developing a highly specific blood-based diagnostic tool for AD. Certain plasma hub proteins are dysregulated on cognitive decline and revealed changes like, Three hub proteins- NELL1, hK14 and CETN2 deregulated in early stages of AD and throughout disease progression. Plasma levels of LYN, PRKCQ and LIF-R altered in early and intermediate stages. KLK4 only deregulated in late-AD with severe cognitive deficits. Thus, it serves as a scale to provide biological explanation of AD staging.

Conclusion:

The study has served a foundation for developing high-performance blood-based test for AD screening and staging and also provided various protein targets for future therapeutic development.

References:

https://alzjournals.onlinelibrary.wiley.com/doi/10.1002/alz.1236

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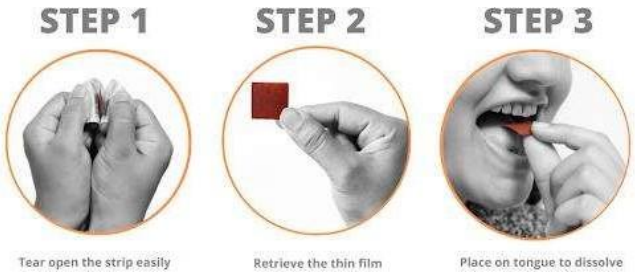
ORAL THIN FILMS – (MODERNIZED DRUG DELIVERY SYSTEM)

While the broader public may be familiar with the breath-freshening strips found at stores, many are unaware that similar "thin films" also have an application in the pharmaceutical market. Referred as **Orodispersible Polymer Thin Films (OTFs),** these are the most innovative and patient-centred novel drug delivery systems. Many Pharmaceutical companies and academic experts across the world are already in the process of exploring the true potential of these films in delivering drugs not only from synthetic sources but also from natural sources. They have proven very useful for patients who have trouble swallowing because drugs can be delivered without the need to chew or swallow. Such patients include children, those experiencing nausea, and the growing elderly community. OTFs are polymeric films designed to deliver therapeutical moieties into the oral cavity or the gastrointestinal (GI) tract, where the former sticks to various parts of the oral cavity and slowly releases the drug into the patient's systemic circulation. Drugs from these films enter the circulatory system directly, and thus, bypassing the first-pass metabolism. In short, the Orodispersible breaks down immediately upon contact with saliva and can rapidly deliver hydrophilic as well as hydrophobic active compounds. There are two main types of OTFs – Oromucosal and Orodispersible. Within orodispersible films, there are two subtypes:

1. **ORALLY DISINTEGRATED** which disintegrate in the mouth, then dissolve and are absorbed in the GI tract (poorly water-soluble drugs).
2. **ORALLY DISSOLVING**, which disintegrate and dissolve simultaneously in the mouth (water-soluble drugs). As the films can be manipulated for precision dosing, this is useful in several cases, including children who often need smaller doses, adults who need partial doses, and drugs in development where the production doesn't include large doses.



arise. It was previously thought that OTFs could not carry water-insoluble drugs. However, recent research has shown that BCS Class II/IV drugs (Classified as having low solubility by the Biopharmaceutical Classification System) can be incorporated into orally disintegrating films.

Although OTFs offer many advantages for drug delivery, they are still a novelty that requires more research and optimization to deliver a wider range of drugs, particularly water-insoluble ones. Unlike tablets and capsules, OTFs often do not carry additional solubilizers – they rely mainly on polymers to increase a drug's solubility. So, developers are exploring innovative particle engineering techniques to improve the delivery of water-insoluble drugs via thin films. Because there is not much guidance on how to develop and test OTFs, the companies in this business are gaining experience in working with novel drug delivery systems, developing formulations, and navigating the regulatory processes that affect OTF development. OTFs also come with certain limitations in the areas of packaging and dosing. For example, the larger and thinner surface that provides several advantages, is also more sensitive to humidity and temperature, requiring special packaging. The best practice in the industry they are taking is a customized approach that selects for OTF components based on their chemical properties. Having this type of expertise would likely yield more efficient OTFs with a higher chance of success in the future world.

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TECHNOMANIA

SLEEPING WITH PILLOW- GOOD OR BAD FOR YOU?

Even though you might feel it is impossible to sleep without pillows, you will be surprised to know that sleeping without a pillow is a good way of preventing neck, back, and shoulder pain. Remember when you were a child, you would fall asleep at any place without waiting for a pillow? The human body can thus adapt to any situation owing to its resilience. And as we age, we are still able to rest our body comfortably without needing a pillow or any other form of support.

The Benefits of Sleeping Without A Pillow-If you have already encountered some signs and symptoms of sleep deprivation, you will need to find the root of the problem. In doing this, you may find that all these health issues may stem from the pillow you sleep on. If you, like many others, believe that pillows are an indispensable part of your sleep, you may be wrong. Your soft and cosy pillow may do you harm without leaving any scope of suspicion.

Here are some of the most compelling advantages of not using a pillow while sleeping:

Neck and Shoulder Benefits: When you don't have a pillow while sleeping, your back, neck and shoulder muscles will extend naturally without causing any aches or sprains. When you sleep on a very soft pillow, it will strain the muscles on the neck while also decreasing the flow of blood to the head. When your head is tilted downwards on any pillow that is not able to provide optimum support for the head, the airflow to the respiratory system is much reduced. If you are already suffering from neck and shoulder pain, you may try sleeping a night without any support to see if the pain subsides.

Spinal benefits: Sleeping on your back without a pillow allows the spine to rest completely with the natural curves of the body. Sleeping with a thick pillow can displace your spine.

Sleep Benefits: When you are not having any neck and head support while sleeping, your body would be able to rest optimally. When you sleep on pillows that do not offer good support, your body starts compensating by engaging the back and neck muscles. This causes more strain when the body is supposed to be resting to overcome everyday stress.

Combats Headaches

You might have experienced waking up with a headache or feeling light-headed. Your pillow might be to blame. Try sleeping without a pillow and see if you feel better the next day. Sleeping with soft pillows reduces blood flow to the head, cutting off part of the usual oxygen supply to the head. Morning headaches could be due to the disruption of oxygen distribution to your head.

Alleviates Stress

If you sleep in the wrong position due to pillows, you might end up tossing and turning throughout the night. This increases stress which, in turn, may lead to other mental and health issues. Once you experience fewer sleep disturbances, the quality of sleep helps the body level down stress hormones. Moreover, after a restful night sleep, you may feel increased energy the next day.

Facial Benefits: Many people tend to bury their faces in the pillow while sleeping. This will prevent your face from being able to breathe and perspire. The pores on the skin surface will not have any access to air. This leads to the formation of oil and grease on the face, and it will give way to blackheads as the added dust and impurities on the surface of the pillow will come in contact with your face.

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TECHNOMANIA

GUT MICROBIOME

Whenever we think of bacteria, fungi, protozoa all that comes to our mind is something that will harm us, make us sick and weak. But, that's not true always because some specific bacteria in our body are very essential to carry out every bodily function concisely and optimally and they have a direct impact on the body's major metabolic functions and modulate several activities and synchronize it well. These bacteria or microorganisms are called 'Good Bacteria'. The Human body consists of two types of bacteria identified as Good and Bad. As the name suggests, bad ones are responsible for various disease conditions deteriorating the overall health of an individual. Good ones are those that support the organ system to carry out various functions ensuring that they are being carried out optimally and also keep a check on the proliferation of harmful pathogens, inhibit their growth, prevent them from colonizing and causing any discomfort to the host.

Our gut is a host of many such good bacteria, where they reside, grow and flourish naturally and defend our body from various disease conditions and other common ailments. As such, these bacteria naturally live in our body, and a healthy diet and exercise ensure their availability but in certain cases where an individual has been on antibiotic therapy for too long or has been on Non-steroidal anti-inflammatory drugs (NSAIDs) for too long, lack of physical activity, stress/anxiety, oxidative stress such as the formation of reactive oxygen species (ROS) which damage our healthy cells and tissues by inducing oxidation and generation of free radicals, etc. affects the gut microbiome and leads to decrease in their population which ultimately affects overall health and well-being of an individual and make them more susceptible to get easily affected with common ailments and health conditions. As already mentioned, these bacteria naturally harbor in our gut, more specifically called as Gut Microbiome, and need not be taken from any outside source. But, in certain cases such as injudicious and indiscriminate use of antimicrobials, use of NSAIDS, chemotherapy account for a rapid decline in the population of such bacteria, and hence there arises a need to consume them from outside sources called probiotics to maintain their optimal number in the gut. Probiotics are essentially foods consisting of useful and important bacteria/microorganism which otherwise naturally harbour in one's body. These beneficial bacteria are naturally present and easily available in most fermented food products such as yoghurt (Dahi), paneer, idli/dosa, kefir, fermented soybean, green peas, pickles, buttermilk.

Following are some of the important strains of microbes present in probiotics:- ***Lactobacillus Bacteria such as L. acidophilus, L. plantarum, L. casei, L. fermentum, L. rhamnous and brevis. Bifiobacterium Bacteria such as B. bifidum, B. longum, B. infantis, B. breve. Yeasts such as Saccharomyces boulardii.***

Mechanism of Action:-

A major group of probiotics works by enhancing the epithelial barrier which prevents pathogen entry into submucosa because if the epithelial barrier gets damaged, food pathogens and bacteria (here bad bacteria) can easily enter and induce inflammatory response releasing chemical mediators like histamine, prostaglandins, etc. causing intestinal disorders such as IBD. Increased adhesion to intestinal mucosa is one of the most prominent prerequisites for enhanced colonization and inhibitory effects on pathogens. They compete with pathogens for adhesion site because their surface proteins interact with mucus on the intestinal wall and this competitively excludes pathogenic microorganisms and produce various antimicrobial chemicals such as lactic acid, hippuric acid, acetic acid, and citric acid which in turn produces substances like hydrogen peroxide, diacetyl, and bacteriocin which inhibits pathogens from colonizing and signals immune system to start secreting immune cells and chemical mediators such as T cells, neutrophils, interleukins, TNF alpha, interferon, antibody-producing B cells and ultimately helps the body in eliminating these harmful pathogens.

Anything in excess is ultimately harmful as appropriately said by Paracelsus "Dose makes the poison" and hence if these good intestinal bacteria start harbouring excessively in our gut/small intestine it leads to a syndrome called Small Intestinal Bacterial Overgrowth (SIBO) which indicates that the activity and number of the gut microbiome have increased beyond standard leading to mild to chronic diarrhoea, weight loss, and malabsorption, nutritional deficiencies, and osteoporosis. Also, it can lead to other conditions such as motility disorder, inflammatory bowel disease (IBD), and metabolic disorders such as diabetes and hypochlorhydria. Intestinal bacteria and enzymes also facilitate the conversion of procarcinogens into their active deleterious forms. Due to this very reason, the use of probiotics such as lactic acid bacillus tablets should be consumed only when prescribed by a medical practitioner.

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TECHNOMANIA

CAREER OPTIONS AFTER B. PHARM.

B. Pharm is one of the few degrees that allow students to have many options after graduation. Though mainly this is an advantage, it can also confuse you. Therefore, to get rid of this confusion, you should have all the information you can on all your options after B. Pharm. This will help you see your career path better.
Here are your career options after a B. Pharm degree:

Higher Studies After B. Pharmacy: One of the most popular options is to continue studying. Sometimes, a bachelor's degree is not enough. Many postgraduate courses let you concentrate on studies in a more specialized field in pharmacy. These courses also allow students to get better career opportunities in managerial positions.

The following are the most popular postgraduate courses to do after B. Pharm:-

1. **PGDM IN PHARMACY:** This is an excellent course to do after B. Pharm. A PGDM in pharmacy or PGDM in pharmaceutical management is a 2-year course that's more industry-oriented and imparts practical knowledge. The course is designed to make students industry-ready the moment they finish their course. This degree will get you a management job in the pharmacy industry. You can also use the knowledge gained to become an entrepreneur after an appropriate amount of experience.
2. **MASTER OF PHARMACY:** This is the next step after B. Pharm. Master of Pharmacy is also known as M. Pharm. Quite a B. Pharm graduates choose to do this course, as it allows them to choose a specialized field in pharmacy. This course allows students to head in a particular direction and become an expert. M. Pharm is a 2-year degree course and can lead to good careers.
3. **M.SC. PHARMACEUTICAL CHEMISTRY:** This course involves a deep study and understanding of drug development. This course is more scientific and is a mix of theory and practical. You delve deep into the scientific aspect of pharma chemistry. During the course, and your career, you will be spending a lot of time in the laboratory. You should be good with research, experimentation, and development. Your work can also make a huge difference, as you will contribute to finding life-saving drugs.
4. **MBA IN PHARMACEUTICAL MANAGEMENT:** The MBA in pharmaceutical management is a course about the science and technological aspect of pharmacy and business and marketing. There is a lot of research and management involved in this degree and the subsequent career. It is a 2-year course that will land you a job in managerial roles with good pay and benefits.
5. **STORE MANAGEMENT COURSE:** This course is both a postgraduate course and a stepping stone to starting your own business. The whole course is designed to teach students how to manage a drugstore business. In an age where single drug stores are growing into widespread franchises, this is an important course. You can start your drugstore, or find an important position in a big drugstore chain, this is a course for people who are sure about entering the drugstore business.

Self-Employment/Business Prospects:

One of the main advantages of B. Pharm is that it is one of the few bachelor's courses that is good enough to allow the student to start their own business. The main businesses most B. Pharm students opt for are, opening a drugstore, being a drug wholesale supplier, and starting a drug manufacturing unit. In India, you cannot start these businesses unless you have a B. Pharm degree. It's a lot easier to open a drugstore and start a drug wholesale supply business. The capital investment is also not very high. Starting a drug manufacturing unit is tough, but the earnings from this business are high. Plus, India is the hub for drug manufacturing and generic drug production. So, it can be considered.

TECHNOMANIA

CAREER OPTIONS AFTER B. PHARM.

Jobs after B. Pharmacy: B. Pharm is an excellent degree that is professional and career-oriented. So, right after graduation, you can get a job that pays well. Many students choose this option and start working after graduation.

Here are some jobs you can do after B. Pharma:-

COMMUNITY PHARMACIST: The community pharmacist is your local pharmacist who provides medicines to the general public. This is one of the most important jobs. You have to be careful of the governments strict rules and regulations while carefully checking prescriptions and dispensing medicines. Many B. Pharm students opt for this as this is a people-oriented profession and pays well. You can have your drugstore as well.

HOSPITAL PHARMACIST: The hospital pharmacist, just like the community pharmacist also dispenses medicines, but they are responsible for dispensing medicines in a hospital. They are in charge of the hospital's internal drugstore and have to give out medicines to the nurses based on doctors' orders. They have to manage inventory, keep a track of the drugs, keep a record of the prescriptions, restock, and drugs, manage other employees in the drugstore, and make reports for the hospital management. This is quite a responsible job profile.

DRUG INSPECTOR: Once a drug gets approval for sale to the general public, the drug inspector's job starts. They have to ensure that drugs are manufactured properly and are packaged safely. They are responsible for the quality of the product and packaging. They also have to do regular checks for the quality of the drug and efficiency in the manufacturing process. Drug inspectors work in drug manufacturing units and have a very important job.

QUALITY CONTROL ASSOCIATE: The title of this career is definitive of what is expected from this professional. There are many stages in the life of a drug. From formulation to the finished product, the quality control associate is the one responsible for maintaining the quality and safety of the drugs. Quality control associates also have to make comprehensive reports. They can even create their evaluating and inspecting methods to ensure the quality of the drug is maintained.

CLINICAL RESEARCH ASSOCIATE: Clinical research is one of the most important aspects of the pharma industry. Therefore, the career of a clinical research associate is important to the cause. They are an integral part of the clinical research process. Formulation, testing, developing, experiments, reporting, documentation, etc., the clinical research associate is a part of every process and works under the scientists conducting the research.

R&D SCIENTIST: All the medicines and vaccines we have today are thanks to research & development (R&D). The R&D scientist is one of the most important jobs in the pharma industry. Their job entails researching diseases and developing their cures, re-evaluating old drugs and creating better formulations, researching and developing vaccines, having a deep understanding of chemistry and biology, conducting animal and human trials, writing reports on medical findings, are just some of the main expectations of R&D scientists.

FORMULATION DEVELOPMENT ASSOCIATE: Very rarely does the first formula of drug work. It's the main job of the formulation associate to help in the development of the drug. They have to conduct in-depth studies, trials, experiments, and more to make better formulations. Their job ensures that we keep getting better medicines over time that are more effective and have very few side effects. This is an important job profile worth considering.

MEDICAL REPRESENTATIVE: Medical representatives (MR) are professionals hired by pharmaceutical companies who meet with doctors to inform them of the new drugs their company has launched in the market. They are like marketing executives of the company's products. This is an important job because Medical representatives are the ones responsible for creating sales of manufactured drugs. They need to have a deep understanding of all the drugs their company produces.

SALES & MARKETING REPRESENTATIVES: This position is similar to an MR, but some companies requires a MR to have management degrees. Sales & marketing representatives are also responsible for the sale of their company's drugs. But they, not only market, but they also take orders. They meet with doctors, hospital and clinic management, pharmacists, etc. to take orders of the drugs. They have to ensure the drugs are supplied properly and there are high sales. A pharma company's success is dependent on good sales & marketing executives.

SCIENCE WRITER: News agencies, magazines, online media companies, etc. are always on the lookout for science writers who have a deep understanding of the pharmaceutical industries and other science-based industries. Your job would be to research and write blogs, articles, news reports, reviews, etc. on the pharma industry and other related topics. You need to have a good command of the written language and a flair for writing.

"A dull mind gets bored easily. A curious mind expands forever. "-Maxime Lagacé

Compiled by:
Mayur Vinod Tayade
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SELF TALK-THE REINVENTING VOICE

"Life isn't about finding yourself it's about creating yourself." Self-doubts and obstacles are the reasons for creation and reinvention. Reinvention leads to create a new personality that is ameliorated. It's not a miracle that will happen overnight on its own we have to consciously decide and work towards it. Self-talk plays an important role in reinventing ourselves. First of all why there is a need of reinventing ourselves? The simple answer to that is to live up to full potential. Now many of us may think "Living up to full potential?" Am I not doing more than what I'm supposed to do?" Many of us may be earning a good amount of money, spend time with family, have a good quality lifestyle. I agree that's good but that's not enough my dear friend. These all are materialistic things. Now just sit back relax and think. Are you enjoying your work? Or you are just satisfied with what you are doing? Is this the work that you will never get tired of? Yes, there comes a point of saturation in life when you think "Now I am done with it." And it's obvious if you keep following the same schedule or keep doing the same work daily; eventually, it will exhaust you. Just think what does matters you is just money or you have a dream in the corner of your heart and at the back of your mind, is there a voice in your subconscious mind that used to quiver you but you muted it by listening to others or you were busy with doing the work to survive and not to live. If we limit our choices we disconnect ourselves from what we truly want and all that is left is compromise. Now reinventing doesn't mean going to extremities it's just to have balance; otherwise, we will lose our control over life. Unconsciously our self–talk reinforce self-image. What we think about ourselves has a much greater influence on whether we hold ourselves back or push forward in life. Also, people around us and with us play a major role in our thought process and interpretations about us. For instance, we always ask people questions like, "What do you think I should do? Or "How do you think I look in this?" but the real question we should ask ourselves is "What do I think I should do?" or "How do I look in this?" people just make interpretations; but there is an expiry date to these external factors that keep on steering us to the wrong direction because once we are old enough to take the wheel; the responsibility lies with us. It's not like other people always give us wrong advice or purposely deter us from seeking the work we like to do, but as it's our life we should try the things that we think we can do or we should do. We should rework on interpretations that we heard and believed of ourselves, if we want to be different, be successful we have to look upon all these believes and interpretations. We should recognize is it our interpretation or it's of others about us; maybe it's a misguided mishmash of two. To get success we must know how to translate this interpretation to make better choices so that our past cannot define us. Poor self-worth and poor self-confidence can stop us from achieving our goals. But we should not let it happen. Poor self-confidence is far more inhibiting than poor self-competence. Reinvention is not just about changing profession it could be bringing life to relationships, modifying our behaviour, our personality in a good way, or it may be any other thing that brings good changes to our life. Remember, growth starts with a decision to move beyond current circumstances. Respect your decision and be ready to get experience. Experiences we get may be good or bad but will teach you something that will remain with you for a lifetime.·

- We must run our brain rather than letting it run us.·
- We must have modest ambition or terrible addiction that will benefit us in creating our personality.·
- We should feel good, and think well about ourselves.
- This is called positive self talk it's an inner dialogue that will make us feel good about everything in our life. It's an optimistic voice in our head that encourages us to look at the brighter side of things, it let us pick ourselves when we fall and make us recognize our mistakes.·
- Fear, insult, and embarrassment these all are just feelings, it cannot hold us back and we should not let it hold us back.·
- Then to after this you feel insulted or bad; think that what you can do to get out of that situation.·
- Instead of saying," I will never be able to do this", try saying; "Is there anything I can do that will help me to do this?" Create a daily mantra that will give positive thoughts to our brain.·
- Note down daily how many times you saw a negative situation with a positive approach.
- And at the end of the month, you will meet the best version of success of yourself. In technical terms an amazingly upgraded version. This will transform your outlets and outcomes. In this way, we can reinvent ourselves and ameliorate our life.

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TECHNOMANIA

INSIDE A BLACKHOLE

Black holes are one of the strangest things in existence. They don't seem to make any sense at all. Where do they come from....and what happens if you fall into one? Stars are incredibly massive collections of mostly hydrogen atoms that collapsed from enormous gas clouds under their gravity. In their core, nuclear fusion crushes hydrogen atoms into helium releasing a tremendous amount of energy. This energy, in the form of radiation (Hawking radiation), pushes against gravity, maintaining a delicate balance between the two forces. As long as there is fusion in the core, a star remains stable enough. But for stars with way more mass than our sun, the heat and pressure at the core allow them to fuse heavier elements until they reach iron. Unlike all the elements that went before, the fusion process that creates iron doesn't generate any energy. Iron builds up at the center of the star until it reaches a critical amount and the balance between radiation and gravity is suddenly broken. The core collapses. Within a fraction of a second, the star implodes. Moving at about a quarter of the speed of light, feeding even more mass into the core. It's at this very moment that all the heavier elements in the universe are created, as the star dies, in a supernova explosion. This produces either a neutron star or if the star is massive enough, the entire mass of the core collapses into a black hole. Nasa's post about how supermassive black holes can host 'tsunamis' of gas goes viral This illustration shows a supermassive black hole veiled in dust and strange features in nearby gas. High-energy X-rays from the disk surrounding the black hole interact with this gas and give rise to unusual features. If you looked at a black hole, what you'd be seeing is the event horizon. Anything that crosses the event horizon needs to be travelling faster than the speed of light to escape. In other words, it's impossible. So, we just see a black sphere reflecting nothing. But if the event horizon is the black part, what is the "hole" part of the black hole? - The singularity. We're not sure what it is exactly. A singularity may be indefinitely dense, meaning all its mass is concentrated into a single point in space, with no surface or volume, or something completely different. Right now, we just don't know. It's like a "dividing by zero" error. Just within the distance where the supermassive black hole loses its grip on the surrounding matter, the relatively cool atmosphere of the spinning disk can form waves, similar to the surface of the ocean. When interacting with HOT winds (which can be 10x hotter than the sun) these waves can steepen into spiraling vortex structures that can reach a height of 10 light-years above the disk Hawking's Black Hole Theorem Confirmed Observationally for the First Time There are certain rules that even the most extreme objects in the universe must obey. event horizons — the boundary beyond which nothing can ever escape — should never shrink. This law is Hawking's area theorem, named after physicist Stephen Hawking, who derived the theorem in 1971. Fifty years later, physicists at MIT and elsewhere have now confirmed Hawking's area theorem for the first time, using observations of gravitational **waves**. Researchers take a closer look at GW150914, the first gravitational wave signal detected by the Laser Interferometer Gravitational-wave Observatory (LIGO), The signal was a product of two in spiraling black holes that generated a new black hole, along with a huge amount of energy that rippled across space-time as gravitational waves. In the new study, the physicists reanalyzed the signal from GW150914 before and after the cosmic collision and found that indeed, the total event horizon area did not decrease after the merger — a result that they report with 95 per cent confidence. Age of Insights: As powerful as black holes are, they will eventually evaporate through a process called Hawking radiation. To understand how this works, we have to look at space. Space is not empty but filled with virtual particles popping into existence and annihilating each other again. When this happens right on the edge of a black hole, one of the virtual particles will be drawn into the black hole, and the other will escape and become a real particle. So the black hole is losing energy. This happens incredibly slowly at first and gets faster as the black hole becomes smaller. When it arrives at the mass of a large asteroid, it is radiating at room temperature. When it has the mass of a mountain, it radiates with about the heat of our sun. and in the last second of its life, the black hole radiates away with the energy of billions of nuclear bombs in a huge explosion. The similarity between the two theories suggested that black holes could behave as thermal, heat-emitting objects — a confounding proposition, as black holes by their very nature were thought to never let energy escape, or radiate. Hawking eventually squared the two ideas in 1974, showing that black holes could have entropy and emit radiation over very long timescales if their quantum effects were taken into account. This phenomenon was dubbed "Hawking radiation" and remains one of the most fundamental revelations about black holes.

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MENTAL HEALTH DURING THE PANDEMIC.

The early stages of the pandemic and the ensuing lockdowns were hard on all of us in all kinds of ways and many challenges severely affected the mental well-being of many people around the world and especially in India as 33% of the population survives on Daily Wage. Yet here we are, a year on.

How are we coping?

The physical health effects of COVID-19 and the countless deaths the pandemic has claimed, have been and continue to be devastating on a global scale. People were worried about the emotional impact that the loss of loved ones would have on themselves and their friends and neighbors. Many found it hard to cope with the grief and isolation, and others found it hard to deal with job loss and financial insecurity. Frontline healthcare workers and others in the caregiving industry faced similar emotional challenges as they were constantly overworked.

Where we were a year ago?

The pandemic has forced some people to work and expose themselves to the virus, while others have benefited from working from home. At the start of the pandemic, some people enjoyed more relaxed lockdown measures (depending on which country they were in), while others felt safer through strict self-isolation. Still, overall, the mental effects of lockdown did not fail to appear. People reported feeling more agitated, more stressed, more restless, and more sleepless. Studies confirmed this. A small but worrying survey from March 2020 revealed increased alcohol and cannabis use among people around the world. They likely turned to these substances to relieve their pandemic-induced anxiety and depression.

Where are we now?

The picture looks similar worldwide. One recently published Nature article notes an increase of 9% in depression rates in June 2020, compared with pre-pandemic times. Another study that looked at residents in India, U.S., U.K., Australia, and Canada found a 14% increase in anxiety because of the pandemic. An important thing to note is that the pandemic seems to have affected older adults' mental health less severely, compared with that of younger adults.

How to look after your mental health during a pandemic

I am trying to stick to what has worked for me in the past when I want to be calm — for example, learning and practicing simple relaxation techniques, like breathing exercises, muscle relaxation, mindfulness, and meditation, which can all be very helpful in alleviating mental distress. What's great is that we can also reconnect with those hobbies and relaxation techniques like gardening, listening to music, playing music, journaling, writing, arts, and crafts, cooking new recipes,, daydreaming ... so much to savour.

The ...ns for mental ... groups at risk of new or exacerbated ... ...sorders and those facing barriers to accessing care. Phased COVID-19 vaccinations are taking place across India and the Rest of the World, perhaps signaling that the end of the pandemic is on the horizon. However, many of the stressful conditions employed to mitigate the spread of the coronavirus is likely to persist for the near future, given the slow and troubled rollout of vaccinations across the country, instances of people refusing the vaccine due to fear or uncertainty, and the need for vaccinated people to continue taking existing precautions to mitigate the outbreak.

Message To Take Home

Understanding the effects of the COVID-19 outbreak on the mental health of various populations are as important as understanding its clinical features, transmission patterns, and management. Spending time with family members including children and elderly people, involved in different healthy exercises and sports activities, following a schedule/routine, and taking a break from traditional and social media can all help to overcome mental health issues. Public awareness campaigns focusing on the maintenance of mental health in the prevailing situation are urgently needed

Stay Safe, Wear Mask, Use Sanitizer
We Are in an END GAME Now.....

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COVID-19 ASSOCIATED MUCORMYCOSIS

Since the onset of the Covid-19 pandemic, there have been multiple reports of the very high incidence of mucormycosis among Covid-19 patients, especially in those who have diabetes and have received steroids.

Covid Associated Mucormycosis (CAM) has been associated with high morbidity and mortality, exorbitant treatment costs, and a shortage of antifungal drugs.

The incidence rate of mucormycosis globally varies from 0.005 to 1.7 per million population.

In India, the prevalence of mucormycosis is estimated as 140 per million population, about 80 times higher than the prevalence in developed countries.

In a systemic review and meta-analysis of 851 cases reports published in 2018, death was reported in 389/851 (46%) patients. Case fatality was highest among patients with disseminated mucormycosis (68%) and lowest in those with cutaneous disease (31%).

Following the surge of COVID-19 associated mucormycosis and the Government of India directive, several states in India made mucormycosis a notifiable disease in May 2021. This will provide better insights into the disease burden, population characteristics, risk factors, clinical spectrum, and outcomes of these patients.

Current trends indicate that the surge is higher in those with pre-existing diabetes, those on systemic corticosteroids and is being observed in both people with COVID-19 and those recovering from the disease.

What are the symptoms of Covid Associated Mucormycosis (CAM)?

Patients with COVID-19 (active/recovering/post-discharge) with Rhino-Orbito-Cerebral Mucormycosis (ROCM) complain of nasal blockage or congestion, nasal discharge (bloody or brown/ black), and localized pain. Patients may also complain of facial pain, numbness or swelling, headache, orbital pain, toothache, loosening of maxillary teeth, jaw involvement, and blurred or double vision with pain. Other symptoms include paresthesia, fever, skin lesion, thrombosis, and necrosis (eschar). Pulmonary mucormycosis may present itself in fever, cough, chest pain, pleural effusion, hemoptysis, and worsening of respiratory symptoms.

Mucormycosis: What is the treatment?

Mucormycosis is a medical emergency even when clinically suspected. A team approach is required with infectious disease specialists, microbiologists, histopathologists, intensivists, neurologists, ENT specialists, ophthalmologists, dentists, surgeons, radiologists etc. It is essential to control diabetes and diabetic ketoacidosis. Reduce steroids (if the patient is still on them) to discontinue rapidly.

Diagnosis

Early recognition, diagnosis, and prompt administration of appropriate antifungal treatment and surgical debridement (as needed) are essential for improving outcomes for patients with mucormycosis.

Diagnostic methods include biopsy and fungal staining (KOH mount), which remains the mainstay of laboratory diagnosis. Facilities where fungal culture and susceptibility testing are available can help confirm mucormycosis species. Treatment initiation, however, should not wait for fungal culture results.

Imaging tests such as a CT scan of lungs, sinuses, or other parts of the body, depending on the location of the suspected infection, may also be used to support the diagnosis

How can you prevent this infection?

As poorly controlled diabetes is the major issue, reasonable glycemic control during the management of COVID 19 patients is required. Systemic steroids should only be used in patients with hypoxemia. Oral steroids are contraindicated in patients with normal oxygen saturation in room air. If systemic steroid is used, blood sugar should be monitored. The dose and duration of steroid therapy should be limited to dexamethasone (0.1mg/kg/day) for 5-10 days. Universal masking reduces exposure to Mucorales; avoidance of construction sites is recommended. During discharge of the patients, advice about the early symptoms or signs of mucormycosis (facial pain, nasal blockage, and excessive discharge, chest pain, respiratory insufficiency).

Reference:-The Indian express

Compiled by:
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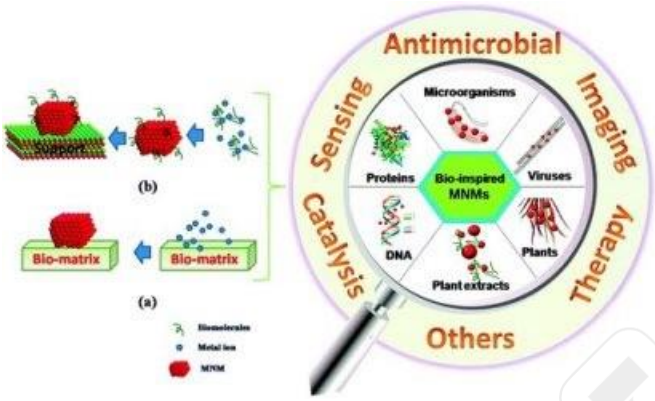
BIO-INSPIRED NANOMEDICINE

Bio-Inspired Nanomedicine An Emerging Trend For Drug Targeting Into Cancer Cells. The development of advanced drug delivery based on nanotechnology greatly impacted cancer therapy. The bio-inspired drug delivery system based on nanocarrier has a point of attraction that drastically changed the therapeutic approach to cancer treatment and diagnosis. The bio-inspired particle, novel particle-based therapeutic replica, has bio-similar features to biological systems. These particles interact with cellular elements by imitating the to and fro movements of cells within the body, thereby potentiating therapeutics' pharmacological action. These particles are designed to mimic the cellular integrity of biological system, such as cell surface, membrane fluidity, three dimensional structure of the protein, and the chemical composition of the particles.



ADVANTAGES:

The bio-inspired therapeutic system offered a better platform for drug delivery with respect to specific selectivity, drug targeting, and potentiating their clinical utility compared to conventional drug delivery. Moreover, these nanocarriers are biodegradable, biocompatible, and capable of discharging multiple payloads for site-specific delivery

Bio-inspired therapeutic approach in cancer therapy:-

Microbes-inspired therapeutic delivery:-In this drug delivery, bacteria are genetically engineered with a drug release switch that controls the simultaneous growth of bacteria and medicament release.

Microbot therapeutic delivery:-The nanoparticles could be conjugated to bacteria for simultaneous delivery of nanoparticles carrying therapeutic cargos into cells through the Microbot technique. This is genetically unmodified bacteria and has an advantage over invasive delivery of bacteria into cells.

Virus-inspired therapeutic delivery:-Virus is a nano-scale, highly infectious particle comprised of nucleic acid molecules inside a protein core. It has been widely explored as nano-vehicle nanomedicine targeting due to its ability to transfer RNA, and DNA into host cells for replication. It was found that the drug-loaded nanoparticle conjugated with the capsid part of adenovirus, retrovirus for specific tumor cells targeting.

Exosomes: It is a cell-derived vesicle abundantly available in biological fluid. They are amphiphilic, with a center point composed of a hydrophilic head encircled by a bi-layer lipid membrane made of saturated phospholipids, thus constituting a stable exosome structure. Some work reported the exosomal delivery of the anti-cancer agent and siRNA.

RBC-inspired therapeutic delivery:-Structurally, it is an oval biconcave disc, flexible with an average diameter of upto 8 µ. RBC shows a high degree of biocompatibility, complete biodegradability, and no toxic effect in vivo. It acts as active transporter, has a long circulatory half-life (40 days in mice and 120 days in human), offer high drug encapsulation feature, and has an abundant surface area for modification

Lipid based drug delivery:-Solid lipid nanoparticles composed of solid lipid cores adhered to a surfactant to solubilise lipophilic drugs in aqueous colloidal dispersion for site-specific drug delivery. A pH-responsive solid lipid nanoparticle was developed to deliver doxorubicin to human breast cancer cells, resulting in a superior anti-proliferative effect in MDR cancer cells.

Phtyonanoparticle for drug delivery:- parts such as leaves, fruits, seeds, stems, flowers, roots, barks, and fruit peels are involved in synthesizing various types of nanoparticles. The low cost and high eco-friendly-natured plants are very advanced and beneficial to human applications.

Conclusion

Bio-inspired therapeutic systems that originate from biological sources for the treatment and mitigation of cancers are becoming a topic of discussion and an emerging trend for scientists working in this arena. Due to the unique characteristics and desired properties of long circulation in biological fluid and selective cellular internalization in vivo, researchers have been attracted recent attention.

Compiled by:
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QUARANTINE: EXPLORING MYSELF

They say the Pandemic brought darkness to their life. Well, It was a time to unlock my hidden talents. Being all day at home, I came close to my family but it made the rest of my world virtual. Due to the closure of schools and colleges eventually, I enrolled on online courses.

Everyone was shattered knowing that COVID -19 was declared as a pandemic. But these frontline workers was like a boon for us. As an old saying goes, "Suffering is a choice and finding a rainbow in a rain is our prime job". As we all know it became harder to be mentally stable, but nothing is impossible, so I kept myself mentally and physically fit.

I was always fond of drawing. Equipped with the basics to draw, I carved the paper in such a way that it looked nothing less than a sculpture. Since I was a kid I liked reading books, but time always been an excuse. And during this Pandemic the only thing we had a lot was time. It started with an autobiography of A. P. J. Abdul Kalam and it quickly evolved to novels like The Alchemist by Paulo Coelho and many more. By reading many books, I have realised how strong my feathers are, and how far can I fly. Swimming through the words and diving into the chapters of the vast ocean of books, I realised that these books have drastically changed my life. Maturity struck me, as far as my language was concerned. My life choices have become more optimistic than they were ever before. I planted a lot of plants in our backyard. A small share in pollution control, maybe. Plants are divine to have, they smile at you when you water them. I used to spend hours with my plants, they talked to me, they express, they feel, they live with us. I experienced this strange but extremely beautiful phenomenon. Just give it a try, when you feel lonely. I am sure, it works wonders. It freshens up your boring day, enlightens your darkened work and speeds up your snail-like lifestyle. I loved this strangeness beyond what I would have ever expected. There were so many things that I had to compromise because this pandemic situation left us with no choice. But so far, I haven't realised, how my journey of compromising things went to achieving the principle of wisdom called 'Adjustment'. It is not always rainbows and butterflies, it's an adjustment that moves us along. And that's the exact thing I did. I adjusted. ‘ What to do '? the question many people might have faced when they were locked up in their houses, idle with no work and nothing to do. But as we know if god closes a door, he opens plenty later. on the other hand, I was listing out the things which I could do in this free time. This home quarantine opened a world to me; it let me travel through versatility and pursue my passion. The fuel of hard work kept my fire of knowledge lit. No doubt, I couldn't do many things that I wanted to. Instead, I used this time to explore colours within me, rather than spending time behind pessimism. This free time helped to delve deeper into myself.

Compiled by:
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Poem - Just because I'm a girl !

I feel insecure,
Just because I'm a girl !
I reside all my problems and pain within me,
Just because I'm a girl !
I feel broken when people consider me as a stuff,
Just because I'm a girl !
I feel bad been imposed restrictions,
Just because I'm a girl !
I feel bad when society doesn't respect my views and concern,
Just because I'm a girl !
I don't trust anyone openly,
Just because I'm a girl !
I feel so uncomfortable when I open myself infront of anyone,
Just because I'm a girl !
May be I'm a girl ,
But I'm the whorls of that blooming flower that blows all day and dries at night !
Silence is too settled in the eyes of each girl ,
But I never complained ,
Just because I'm a girl !

By: Aachal Rameshwar Gajbe
F Y B. Pharm.

Have You Ever ?

Have you ever read a Shakespearean sonnet?
The rhythmicity of those beautifully crafted lines,
The beauty of what it holds,
To feel it, is like kissing fire and burning ice on thy palm.

Have you ever read a Shakespearean sonnet?
The calmness in those wonderfully scorched words,
The imagery it withholds,
To feel like a handcrafted antique throwing flames through thy eyes.

Have you ever heard a Shakespearean sonnet?
The ecstatic mellow that it platters,
The unbounded imagination that it withholds,
To feel unlearned talking about beauty to thee.

Have you ever heard a Shakespearean sonnet?
The obliterated words that it pours,
The love, THE LOVE that it withholds,
"Sin of self love possessed all my eye and all my soul and all my every part"

By: Sopan Devidas Borhade
T Y B. Pharm.

Birds and we!

A chirp high,
Aiming that it will conquer the blue sky!
It saw it's wing and cancelled the flight,
It thought it's tiring so it never tried.

Summer approached n it saw it's mates flying high,
So it thought of giving it a conceptual try,
It forgot it's size and attended the flight,
It tried reaching the zenith with all its might.

It flied among the cloud's, it felt contended,
It was happy about the decision it had made!
And ofcourse so should all of us be,
Yes you can do it, so shall we.

So set your aim high and attend the flight,
Don't get confused between what's wrong n right!
Aim big and perspire a lot,
Cause that's what the bird taught!!

By: Jayesh Arun Wankhede
F Y B. Pharm.

Healer

There is with a zeal,
to look towards everyone and heal.
Each time we are ailing and feeling unwell,
there is only one name which we always spell.
In hour's when my heart, was racing with fear,
even to reach out to someone who was very near.
I knew, that he required me,
yet, I didn't pay heed, at least to see.
It is just because I really had a care,
but only for my own self, which wasn't fair.
Yet, I was hoping for someone to come,
to look after him, so I wouldn't feel, burdensome.
Then rang up my phone tring - tring,
which had a very good news in bringing.
My friend was back home then with a run,
from that day onwards, it was again lot's of fun.
I might have thanked that person a thousand times,
Now, when I see my friend then as if in him,
his presence shines.
People said, he was just a Doctor,
but as for me he wasn't less than a Healer

By: Ankit Din esh Doshi
F Y B. Pharm.

अक्षरधारा

माँ का खत

सरहद पर अपने बेटे को,
माँ ऐसा पत्र लिखती है
पहले कुछ ही पंक्तियों में
उसकी बेचैनियां दिखती है
लकीर ऐसी खिंच देना
दुश्मनों के बीच तुम
रावण भी जलकर खाक हो जाये
इस मिट्टी के बीज तुम
बंदूक से निकली गोली तेरी
गुजती सारे हिमालय में
कांप उठी है रूह दुश्मन की,
हम सोए अपने आशय में
तेरी गौरवशाली शहादत से,
गर्व से सीना फुलता है ,
ए फौजी तेरे नाम का फूल,
अब तस्वीरों में ही खिलता है
पापा तेरे दुआ करते
एक बार बस तू आ जाये
नाज है तेरी कुर्बानी पे,
अफसोस, ना तुझको कह पाये.
सपनों का तेरा भारत देश,
हकीकत में भी उतरेगा
आँख उठाने से पहले दुश्मन,
सौ बार तो कतरेगा

- Pratik Vinod Tak

आई

आई साठी काय लिहू
आई साठी कसे लिहू
आई साठी पुरतील एवढे
शब्द नाही कोठे
आई वरती लिहीण्याइतपत
नाही माझे व्यक्तिमत्व मोठे
जीवन हे शेत , तर आई म्हणजे विहीर
जीवन ही नौका तर आई म्हणजे तीर
जीवन ही शाळा तर आई म्हणजे पाटी
जीवन हे कामच काम तर आई म्हणजे सुट्टी
आई तू उन्हामधली सावली
आई तू पावसातील छत्री
आई तू थंडीतली शाल
आता यावीत दु:खे खुशाल
आई म्हणजे आरतीत वाजवावी
अशी लयबद्ध टाळी
आई म्हणजे वेदनेनतरची
सर्वात पहिली आरोळी

- Ankit Dinesh Doshi

एक तरू

अरे अरे मकरंदा काय तुझा स्वाद
तुला चाखण्याच्या चढाओढीने होतायत नुसते वाद
काय तुझ्या या विखुरलेल्या शाखांच सौंदर्य
आजही भरून जातात आमचे नयन, जरी नसतील त्याला पर्ण
कित्येकदा वेळे अभावी जीर्ण होऊन जातात तुझे पुष्प ही
पण देवघराची शोभा वाढवताना दिसतात ते आज ही
हिरवळ टिकवण्यासाठी नाजूक मुळ ही घेतो जलसमाधी
प्रयत्नांती तरी असे आम्हाला जमेल का कधी
पर्यावरणाचा समतोल राखण्यास करवतोस नेहमी वर्षाव
आता तरी थोडा दाखव प्रकोप, खूप झाले झेलून कुऱ्हाडाचे घाव
आता तरी आम्ही तुझ्यासाठी नक्कीच काहीतरी करू
कारण आजही तुझ्या छायेत सुखद झोपतो वाटसरू
अरे वृक्षा! गरजानं प्रमाणे कापतो तुला आम्ही
खंत वाटते की होत नाही परत लागवड तुझी

- Nisha Anil Bhalme

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आईने जेव्हा जन्म दिला तुला
तेव्हा मिळालं हे जग तुला बघायला
बापाने जेव्हा घाम गाळला
तेव्हाच सुखाचा हा घास तुला मिळाला
काबड कष्ट करून बापाने गरजा तुझ्या पुरवल्या
वाचवलेल्या पैशांमधून आईने तुझ्या हट्टी पूर्ण केल्या
पैसा नसला तरी सुखात ठेवलं होतं तुला
दु:खाची कण मात्र जाणीव न होऊ दिली तुला
स्वत:कडे न ठेवून सर्व काही दिले तुला
मोठे स्वप्न बघण्याची हिम्मत दिली तुला
सुकं पाकं खाऊन शिक्षणात पैसा पुरवला तुला
तेव्हा तुझे स्वप्न तू पूर्ण करू शकला
आज केलेस तू स्वप्न साकार तुझे
पण कसा विसरलास तू ऋण त्यांचे
लहानश्या घरात सुद्धा तुला सुखात ठेवले होते
आज ते तुझ्या मोठ्या घरात पण प्रेमाला तरसत होते
त्यांच्याकडे बघण्याचा पण वेळ नव्हता तुला
त्यांना फक्त तुझा प्रेमाचा शब्द हवा होता
नाहीसे झाले ते आता डोळ्यांसमोर तुला
म्हणून म्हाताऱ्या वयात तू त्यांना रस्त्यावर टाकुन गेलास
आईचे रडू थांबत नव्हते आणि बापाचा विश्वास बसत नव्हता
की ज्याच्यासाठी आयुष्य झिजवले होते
तोच आज वृद्धाश्रमाची वाट दाखवत होता.

- Jayesh Arun Wankhede

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