ONE DAY SEMINAR ON

INNOVATIONS IN PHARMACEUTICAL RESEARCH - 2015
and
ORAL PRESENTATIONS

1st AUGUST 2015

SCIENTIFIC ABSTRACTS

G. PULLA REDDY COLLEGE OF PHARMACY

Leading the tradition of
Quality and Excellence . . . . . .

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G. PULLA REDDY COLLEGE OF PHARMACY

Affiliated to Osmania University
Approved by AICTE and PCI

ISO 9001 - 2008 Certified institution for Graduate and Post Graduate Education

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VISION

G.Pulla Reddy College of Pharmacy envisages to become the centre of excellence for research in Pharmacy. It aims to contribute significantly to drug development and drug discovery.

MISSION

G.Pulla Reddy College of Pharmacy aims to be on forefront in imparting the disciplined and quality Pharmacy education. The graduate & postgraduate students shall be groomed as responsible & highly acclaimed professionals in the Pharmaceutical Arena.

COURSES OFFERED

B. Pharm

M. Pharm - Pharmaceutical Chemistry
Pharmaceutics
Pharmacology
Pharmaceutical Analysis & Quality Assurance

Pharm. D

EAMCET CODE: GPRP

PGECET CODE: GPRP1

One Day Seminar on

"INNOVATIONS IN PHARMACEUTICAL RESEARCH- 2015" AND ORAL PRESENTATIONS- 1st August 2015

ORGANIZING COMMITTEE

Convener - Dr. B. Madhava Reddy, Principal

Co-Ordinator - Dr. Sama Venkatesh, Professor

Committee	Chairman	Members
Registration	Dr. V. Harinatha Babu	V. Neeharika T. Radhika D. Prashanthi Sushil Y Raut Ch.Rajeshwari
Scientific	Dr. Y. Padmavathi	Dr. K. Latha Dr. A. Ravikiran K. Pallavi N.Raghavendra Babu
Abstract	Dr. B. Veeresh	B.Jayanthi Reddy Sk.Naseeb Basha A. Lalitha Devi
Hospitality	Dr. P.K. Lakshmi	Dr. K. Naresh P. Ravi Kumar R.Padmavathi Y.Sree Hari C.S.Mahalakshmi S.Sravanthi

Programme Schdule

09.00 - 10.00 A.M : Registration

10.00 - 10.30 A.M : Inauguration

10.30 - 11.30 A.M : Lecture I

11.30 - 11.45 A.M : Tea Break

11.45 - 01.00 P.M : Lecture II

01.00 - 02.00 P.M : Lunch Break

02.00 - 05.00 P.M : Oral Presentations

05.00 - 05.30 P.M : Valedictory function

Prize & Certificate Distribution

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"INNOVATIONS IN PHARMACEUTICAL RESEARCH- 2015" AND ORAL PRESENTATIONS- 1st August 2015

SPEAKER'S PROFILE

Dr. J. A. R. P. Sarma., Ph.D

Ex-Senior Vice President,
GVK Biosciences Pvt. Ltd.,
Hyderabad, India

Sarma born in Vijayawada had his education B. Sc from Andhra Loyola College, M. Sc. in Organic Chemistry from Nagarjuna University, Guntur, India (1981, Gold Medallist) and Ph. D. in Organic Chemistry from University of Hyderabad, India (1986). His doctoral research work under the supervision of Dr. G. R. Desiraju was in the areas of Physical Organic & Material chemistry encompassing organic synthesis, photochemistry, solid-state reactivity, single crystal and power X-ray crystallography, Crystal Structure Database analysis and molecular modelling studies to understand inter-molecular and strong & weak H-bond and other types of weak interactions.

Sarma joined in the Chemistry Department at Ben-Gurion University of the Negev Beer Sheva, Israel in 1986 and worked for 2 years as post-doc under the supervision of Prof. Joel Bernstein. There, he worked on the design and synthesis of organic conductors, as well as actively taken up studies in organic electro-chemistry and molecular orbital energy calculations and polymorphism, X-ray Structural studies. In 1988, he joined at ETH Zurich, Switzerland for another post-doc under the supervision of Prof. Jack D. Dunitz and worked for 2 years. He worked on the synthesis of novel organic compounds which undergo thermal phase transitions, and studied molecular motion during the phase transition, polymorphism, and Single crystal and powder X-ray structural studies with temperature variation. From 1990-2001, he worked for Indian Institute of Chemical Technology (IICT) as Scientist C and lated E-I and build and Head of Molecular Modelling division. He successfully completed a number of projects in Drug design and discvoery with Rational Design, Medicinal Chemistry and In vitro & in vivo screening. He has also worked on a number of projects design and development of zeolite based catalysts and non-linear optical materials.

Since March 2001, Sarma moved to GVK Biosciences, as a first employee and Head of Informatics Business Unit which is currently in operation in Hyderabad and Chennai. Currently we have 500 employees working in Informatics in both locations. He has been actively involved in various activities like heading the training arm, bioCampus, and working with multinational Pharma, Agro, biotech and healthcare industry clients with very good P&L accountability and developed the Business not only for Informatics SBU for other Businesses in the company. He is instrumental in designing and developing various Databases which have well integrated data related to structure, SAR and SPR in chemistry, biology, pharmacology, toxicity and IT space. He is actively engaged in various in-silico drug design and discovery projects with various Global Pharmaceutical, Biotech and Agro sciences companies with timely execution and high quality to all his clients. He has executed a number of custom curation, annotation and analysis of data and used the knowledge effectively in the design of novel molecules in various projects. He evolved strategic planning for informatics R&D, identification of market opportunities and, company's corporate management activities. He is also involved in the business development activities with a number MNC companies in Life Sciences based in US, Europe and Japan. He has developed online databases like GOSTAR and GOBIOM and many other IT applications for internal productivity enhancements as well as for various clients. He continues his research efforts and a number of employees have registered for their Ph.D program under his supervision.

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SPEAKER'S PROFILE

Dr. J. A. R. P. Sarma., Ph.D

Ex-Senior Vice President,
GVK Biosciences Pvt. Ltd.,
Hyderabad, India

Over 500 scientists worked in his SBU which renders different project right across the drug discovery and development for Pharma, Agro and biotech industry. Each year he generated more than 10 million USD in revenue with very high profitabilit. He has published nearly 100 papers in highly reputed international journals and had few patents. He has presented a number of papers in many international conferences in US, Europe and Japan, delivered lectures. While 10 students have been awarded for Ph.D degrees under his supervision from different Indian Universities, He was associate editor for Comprehensive Medicinal Chemistry, Journal of Molecular Pharmacology and a few other journals. Recently he has taken an early retirement and pursuing consultation services.

From May, 2012 Dr. Sarma is also acting as Head of Clinical Pharmacology Unit (CPU) where Bioequivalence and Bioanalytical studies are conducted and is located in Hyderabad and Ahmadabad. He has successfully handled multiple Audits from Global Regulators and helping the business to grow and operations to excel. CPU, conducts Clinical and Bioanalytical studies of various formulations of previously approved and/or currently in use drugs (patented or generic drugs) or their combinations for their bioequivalence and bioavailability in pilot and pivotal studies with approval from DCGI. We have nearly 330 employees working in both CPU facilities. In our CPU, we have 8 Clinics (~400 beds) and 18 LC-MS/MS instruments.

Since February, 1, 2013, Dr. Sarma has taken up the corporate role as the Head of Business Excellence and Global IT responsibilities besides the Head of Clinical Pharmacology Unit as additional responsibility. In Sept 2014, he has moved to Head of GLP Analytical Services in GVK Biosciences.

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SPEAKER'S PROFILE

Dr. Padmaja
Managing Director
iProPAT Intellectual Property Solutions
Hyderabad, India.
Email: padmaja@ipropat.com

iProPAT is promoted by Dr. Padmaja. She specializes in Pharma Industry in India with 18 years of corporate experience after Doctoral degree in Chemistry. She also holds a PG diploma in IPR from Osmania University and is a qualified Patent Agent. She had also undergone training with different law firms in the US.

As part of her previous assignments she has the experience of handling both domestic and international litigations. She has deposed and testified in several of the ANDA related litigations. She has the experience of supporting IP work for more than 250 ANDA filings and 150 DMF filings in the US. Similar support has been provided to the filing of about 130 MRP / DCP applications in Europe.

She has the experience of drafting patent documents for different countries such as India, US, PCT, EU, CA, AU, JP. In total she has the experience of drafting and filing over 1000 patent applications.

She has been a key speaker at several national and international seminars /conferences in the field of IP. She is also highly commended for her skills in imparting knowledge to trainees all through out her career. She has been member of the CII working group on IP for sometime.

She has expertise in portfolio management of corporates, which includes product selection for global markets, fixing up the strategies for the ANDA filings in the US and dossier filings in the Europe be it a DCP procedure or an MRP procedure. She was also responsible for project management right from the inception of the project to the approval in some of her previous assignments.

She has experience in international licensing both in-licensing and out-licensing for different countries. She was also responsible for Launch of Indian company subsidiaries in Europe. She also had experience in heading a big team, which was responsible for Marketing & Sales in those countries.

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INTRODUCTION TO INTELLECTUAL PROPERTY AND REGULATORY AFFAIRS SPECIFIC FOCUS TO GENERICS

By Dr. Padmaja

ABSTRACT

Introduction to Intellectual Property and Regulatory Affairs specific focus to Generics Global Pharma industry is multi billion dollar industry with significant portion being contributed by generics segment. Further, there is high pressure in health care industry for reduction of drug prices, which is usually possible by generic drug launches.

New Drug Development is also highly investment oriented in view of Clinical development costs involved. In view of huge investments as well as the sales, each of the innovator products is covered by different types of Intellectual Property to delay/ block generic launches as much as possible.

The presentation outlines different types of Intellectual Properties. Specific focus is given to designs, Trademarks and Patents that are applicable to Pharma Industry for US and Europe.

The presentation also details about the general considerations that have to be looked into for developing and commercialising generic products. Special mention is given to data protection periods / exclusivities and types of procedures that are available for generic product filing and approvals.

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PHARMACEUTICAL CHEMISTRY

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PCH 001

PROTEIN-PROTEIN INTERFACE: TOWARDS DRUG DISCOVERY

Aliha Yar Khan*, Majeeda Begum
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Abstract

Identification of drug like molecules that alter Protein-Protein Interface might be a key step in drug discovery. It's very challenging to find such molecules that target interface region in protein complexes.Protein-Protein Interfacehas emerged as being essential for physiological function, potentially effecting pharmacological behaviour and extending the chemical definition of drug targets. Drugs targeting Protein-Protein Interface should ultimately bind to protein interfaces if not to allosteric sites. However, targeting interface is more challenging than targeting active sites of enzymes or G-protein coupled receptors in drug discovery therefore interfaces are relatively larger, often flat without specific ligand binding pockets. Allosteric nature of protein implicates that ligands can induce structural changes at Protein-Protein Interface even when binding occurs at distinct sites. Such compounds are therefore promising candidates for drugs acting on protein complexes. Residues in Protein-Protein Interface are called as "hot spot" contribute most in the binding energy.Determining hot spot residues by experiment techniques is costly and time consuming, so computational method has been developed to predict hot spot residues in bound and unbound planar structures. Drug like molecules prefers to bind to the hot spots at Protein-Protein Interface and are crucial in drug design.

PCH 002

BIOISOSTERISM-A USEFUL STRATEGY FOR DRUG DESIGN

Tuba Khan*
Sultan-Ul-Uloom College of Pharmacy, Banjara Hills, Hyderabad, India-34.
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Abstract

Bioisosterism has unique relevance in the field of pharmaceutical sciences and is conducted to curtail side effects or to alter the biological activity of a lead molecule. The aim of exchanging one bioisostere for another is to boost the preferred pharmacological,biologicalor physical qualities of a substance without making any major change in the chemical skeleton. The bioisosteric replacement approach is a practical and is possibly better substitute to recent lead to optimisation techniques.It is now commonly used to improve a drugs pharmacokinetic i.e ADME or pharmacodynamics behavior. A number of drugs have been designed based on this concept, as a special process of structure activity relationship and is still successfully exploited in drug development program.Large number of application have been replaced in number of areas of pharmacology like adrenergic,anti-adrenergic NSAID, anti-depressant,cholinergic,diuretics and many more.This process has also helped in developing some anti-cancer drugs like 6-fluorouracil by bioisosteric replacement of fluorine in uracil.In todays time when the drug discovery process has almost seen a halt wherein only a few of millions of compounds actually show the desired pharmacological action.Bioisosterism benefits the discovery process where the effects of a given molecule could be predicted and molecules could be designed to fulfill a specific purpose.

PCH 003

SYNTHESIS OF NOVEL 2-BENZYLHYDRAZINYL, 4-PHENYL, 1, 3-THIAZOLE DERIVATIVES AS INHIBITORS OF MYCOBACTERIUM TUBERCULOSIS MTFABH FATTY ACID CONDENSING ENZYME.

V. Manikanth*, Soujanya
Vishnu Institute of Pharmaceutical Education and Research, Narsapur,Medak (dt), Telangana.
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Abstract
Fatty acid biosynthesis is essential for bacterial survival. Components of this biosynthetic pathway have been identified as attractive targets for the development of new antibacterial agents. FabH, b-ketoacylacyl carrier protein (ACP) synthase III, is a particularly attractive target, since it is central to the initiation of fatty acid biosynthesis and is highly conserved among Gram positive and negative bacteria. Novel 2-benzylhydrazinyl, 4-phenyl, 1, 3-thiazole derivatives were synthesized and developed as potent inhibitors of mtFabH. This inhibitor class demonstrates strong antibacterial activity. Mycobacterium tuberculosis FabH inhibitory assay indicated 4-bromo-2-({2-[4-(4-chlorophenyl)-1,3-thiazol-2-yl]hydrazinyl}methyl) phenol and 2,4-dichloro-6-({2-[4-(4-chlorophenyl)-1,3-thiazol-2-yl]hydrazinyl}methyl) phenolwere potent inhibitors of Mycobacterium tuberculosis FabH.

PCH 004

IMPACT OF COMBINATORIAL CHEMISTRY ON MODERN DRUG DISCOVERY

Zeenath Unnisa Begum*, Shabnam Dobani
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Abstract
Combinatorial chemistry is a technique where large number of structurally distinct molecules can prepare and screened at the same time .This technique has accelerated the process chemical synthesis, redefining the way drugs are discovered .A large population of structurally different molecules called chemical are prepared and used for pharmacological assay .An upsurge in combinatorial synthesis was seen in 1990 and since then it has expanded from peptides to organic ,organometallic ,inorganic and polymer chemistry. Different methods like use of biological libraries ,multi-pin methodology ,tea bag method etc have been used to create a pool of compounds in no time . This technique has been used to create peptide libraries, benzodiazepines libraries and for combinatorial lead optimization of histamine H3 receptor antagonist, dihydrofolate reductase inhibitor etc in the last few years. It is now been widely used in drugs ,anti HIV drugs and drugs for various chronic disease due to its plethora of application it has made a major impact on drug discovery. Last decade has seen a boom in the exploration and adoption of combinatorial technology making it an essential tool kit all medicinal chemists.

PCH 005

COMBINATORIAL SYNTHESIS IN MEDICINAL CHEMISTRY PROJECTS

Saisree*, B Madhava Reddy, V Harinadha Babu
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Abstract
In recent years, combinatorial synthesis has become an established tool in drug discovery and drug development. It helps the medicinal chemists producing a large number of compounds in a short period of time using defined reaction route. It has evolved as a random strategy in generating molecular diversity into a powerful design technology for developing and optimizing drug candidates. My presentation discusses the importance of combinatorial synthesis, Methods of combinatorial synthesis identification and structural determination of active compounds.

PCH 006

IONIC LIQUIDS: THE CLASS OF VERSITILE GREEN REACTION MEDIUM FOR THE SYNTHESES OF VARIOUS HETORCYCLES

S. Naveen Kumar*, M.Sikender, B Madhava Reddy, V Harinadha Babu**.**
G. Pulla Reddy College of Pharmacy, Mehdipatnam, Hyderabad.
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Abstract
Ionic liquids have emerging a versatile class of green solvents with many advantages, compared to conventional media. They have been described as “designer solvents”. Whose prop rites such as solubility, density, reactive index, and viscosity can be adjusted to suit requirements, simply by making changes to the strictures of either cations, anions or both. In organic syntheses, ionic liquids have been extensively used for variety of syntheses transformations. Recently, plethora of heterocyclic has been synthesized using variety of structurally diverse ionic liquids. In the present review, the synthesis of various kinds of hetrocycles using verity of ionic liquids from the banging to the recants years.

PCH 007

BIOAUTOGRAPHY & ITS SCOPE IN THE FIELD OF NATURAL PRODUCT CHEMISTRY

P. Meghana Reddy*
Bhojjam Narsimhulu Pharmacy College for Women, Hyderabad, Telangana- 500059.
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Abstract
Medicinal plants, vegetables and fruits are the sources of huge number of bioactive lead/scaffolds with therapeutic and nutraceutical importance. Bioautography is a means of target-directed isolation of active molecules on chromatogram. Organic solvents employed in chromatographic separation process can be completely removed before biological detection because these solvents cause inactivation of enzymes and/or death of living organisms. They offer a rapid and easy identification of bioactive lead/scaffolds in complex matrices of plant extracts. Bioautography is a technique to isolate hit(s)/lead(s) by employing a suitable chromatographic process followed by a biological detection system. This review critically describes the methodologies to identify antimicrobial, antioxidant lead/scaffolds by employing bioautography.

PCH 008

GREEN CHEMISTRY

Alekhya B*
G. Pulla Reddy College of Pharmacy, Hyderabad, Andhra Pradesh, India – 500 028.
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Abstract
Until recently the spectacular developments in green chemistry have been with little regard to their potential effect on human health and the environment.The beginning of green chemistry is frequently considered as a response to the need to reduce the damage of the environment by man-made materials and the processes used to produce them. Green chemistry has demonstrated how fundamental scientific methodologies can protect human health and the environment in an economically beneficial manner. Green Chemistry with its 12 principles would like to see changes in the conventional ways that were used for decades to make synthetic organic chemical substances and the use of less toxic starting materials. It would like to increases the efficiency of synthetic methods, to use less toxic solvents, reduce the stages of the synthetic routes and minimize waste as far as practically possible. In this way, organic synthesis will be part of the effort for sustainable development. Significant progress is being made in several key research areas, such as catalysis, the design of safer chemicals and environmentally benign solvents, and the development of renewable feedstocks. Current and future chemists are being trained to design products and processes with an increased awareness for environmental impact. Outreach activities within the green chemistry community highlight the potential for chemistry to solve many of the global environmental challenges we now face.

PCH 009

SYNTHESIS AND BIOLOGICAL EVALUATION OF THIAZOLIDINE-2,4-DIONE INCORPORATED IMIDAZO[1,2-A]PYRIDINE DERIVATIVES

B. Gayatri Sunil*, V. Harinadha Babu, B. Madhava Reddy
G. Pulla Reddy College of Pharmacy, Mehdipatnam, Hyderabad.
Email Id: sunilgayatridevi@gmail.com

Abstract:
New series of Thiazolidine-2,4-dione incorporated imidazo [1,2-a] pyridine derivatives were synthesized through hybridization strategy. The structures of synthesized compounds were confirmed by MASS, H1NMR, FT-IR spectroscopy and screened for anti-anxiety activity by Hole Board Poking method. Compound b and c are having more potency when compared with standard drug, Diazepam.

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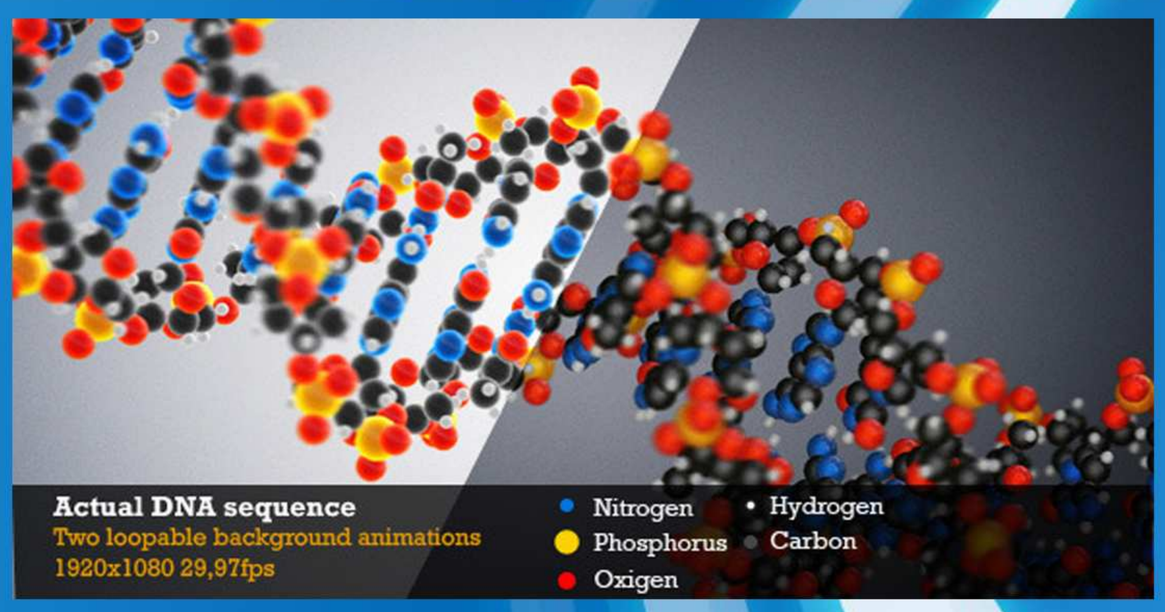
PHARMACOGNOSY & PHARMACEUTICAL BIOTECHNOLOGY



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PCG 001

ANTI - AGING CONCEPT AND SKIN CARE BY NATURAL PRODUCTS

Tasneem Fatima*, Parbati Kirtania
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Abstract
Herbal medicines have been use tradiotionally for millennia and their application in topical creams, lotions and preparations within the tradional medicines and healing traditions of many cultures has been observed. Currently, herbal medicine is well established and widely acknowledges being safe, effective and may be accepted by national authorities. Clinical & laboratory studies have identified the benefits of an array of natural ingredients for skin care. Aging occurs due to hormonal imbalance, free radicals, uv-rays & hydration of skin.There are numbers of natural ingredients such as turmeric, pomegranate, aloe vera, green tea, licorice, arbutin, acai berry etc are used for skin care and dermatological disorders. A healthy skin not only looks beautiful, but also provides a layer of protection against infectious agents. The incredible antioxidant, anti-microbial, anti-bacteria, anti-inflammatory & anti-cancer properties of pomegranate, turmeric, green tea & aloe vera encourages radiant and glowing skin. The body possesses endogenious deffence mechanisms, such as anti-oxidative enzymes & nonenzymatic molecules, protecting from free radicals by reducing & neutralizing them.

PCG 002

DNA MICROARRAY TECHNOLOGY

Uday.V*
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Abstract
Drugs , radioactive and gene therapy did not cure endangering diseases mainly due to lack of knowledge of gene expression of cells in that pathogenic conditions.DNA microarray technology made scientists analyze millions of gene expressions at once and understand complex changes in patterns of gene expression in pathogenic conditions and experimental reversal of tumerogenecity. Microarray uses technique of hybridization between two DNA strands. The array is a collection of micro DNA spots attached to a solid surface or as a coded bead. Each spot containing DNA sequences known as probes. Target sequences are fluorescently labeled and hybridized to probe sequence imprinted on solid surface and gene expression is studied. This will help quantify intensities of same feature (gene expression) under different conditions (eg: pathogenic and normal). Microarray helped science of biotechnology to check gene ID of genetically modified organisms, assess genome content in different cells, alternative splicing detection, single nucleotide polymorphism detection and many other. This technology clinically helped scientists in treating cancers such as breast and brain cancers. This technology will play a vital role to understand behavior of many genes whose expression is not discovered.

PCG 003

BIONIC EYE

G. Sukanya*
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Abstract
India is now home to the world's largest number of blind people. In 37 million people across the globe 15 million blind people are from India. 75% of these are cases of avoidable blindness. On the other hand, while India needs 2.5 lakhs donated eyes every year, the country's 109 eye banks in which 5 located in Delhi manage to collect a maximum of just 25,000 eyes, 30% of which can't be used. Meanwhile, shortage of donated eyes is becoming a huge problem. In 15 million blind people in India, three million that is 26% of whom are children who suffer due to corneal disorders. But only 10,000 corneal transplants are being done every year because of shortage of donated eye. The bionic eye aims to restore basic visual cues to people suffering from eye diseases such as retinitis pigmentosa, which is a genetic eye condition .A video camera fitted to a pair of glasses will capture and process images. These images are sent wirelessly to a bionic implant at the back of the eye which stimulates dormant optic nerves to generate points of light (phosphenes) that form the basis of images in the brain. Thus even blind people can have vision.

PCG 004

EMERGING CONTROL OF MELAMINE LIMIT IN INDIAN MILK PRODUCTS

Zainab Hussain*, Asna Fazal & S.K.Syed Hussain.
Sultan ul Uloom College of pharmacy.
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Abstract
Melamine is an organic base and a trimer of cyanamide, with a 1,3,5-triazine skeleton. Like cyanamide, it contains 67% nitrogen by mass and, if mixed with resins, has fire retardant properties due to its release of nitrogen gas when burned or charred, and has several other industrial uses. Melamine is also a metabolite of cyromazine, a pesticide. Melamine is sometimes illegally added to food products in order to increase the apparent protein content. The discovery of melamine in milk and milk products in China in 2008 led to nearly 300,000 babies and infants becoming ill. At the time over 294000 infants were screened and diagnosed with urinary tract stones and sand-like calculi associated with melamine in milk products, of which 50,000 infants were hospitalized and some of whom died. The awful tragedy was made worse by the knowledge that the contaminant had been added deliberately to bulk out the products. Melamine over-exposure within the context of the nutritional supplements consumption in the products investigated should not be of concern to the consumer provided the recommended guidelines of daily product use are adhered to. Our regulator (FSSAI) has stepped up surveillance on processed food items like Maggi. Likewise, further investigation is warranted to determine the role of melamine as (part) substitute for the perceived total declared protein content on the product label. The aim of the study is the regulator has to impose limits for melamine in domestic milk products.

PCG 005

ANTIMICROBIAL RESISTANCE: A REVIEW

Mirza Adnan Baig*, K. SreeDevi
Sultan-Ul-Uloom College of Pharmacy, Hyderabad, Telangana, India-500034
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Abstract
Antimicrobial resistance has become a global concern, but it is a critical health issue today. Over several decades, to varying degrees, bacteria causing common infections have developed resistance to each new antibiotic, and AMR has evolved to become a worldwide health threat. Though an evolutionary phenomenon, it is promulgated by faulty human behaviours. The emergence of resistance to antibacterial agents is a pressing concern for human health. New drugs to combat this problem are therefore in great demand, but as past experience indicates, the time for resistance to new drugs to develop is often short. Conventionally, antibacterial drugs have been developed on the basis of their ability to inhibit bacterial multiplication, and this remains at the core of most approaches to discover new antibacterial drugs. The aim should therefore be to contain resistance, to optimize the balance between the effective use of antimicrobials against infections, thus reducing morbidity, mortality and further spread of infection. Effective antibiotic stewardship is required to ensure that antibiotics are prescribed and used responsibly. This also requires a multi-stakeholder approach including the governments, policy-makers and planners, pharmaceutical industry, World Health Organization, health care professionals, public and the patients. WHO is engaged in guiding the response to AMR through: policy guidance, support for surveillance, technical assistance, knowledge generation and partnerships, including through disease prevention and control programmes; essential medicine quality; supply and rational use; infection prevention and control; patient safety; and laboratory quality assurance.

PCG 006

BIOMARKERS: AN EMERGING TOOL FOR DIAGNOSIS OF A DISEASE AND DRUG DEVELOPMENT

Syed Abdul Mubeen*, Mohammed Raouf *, Afshan Mehrose *
Deccan School of Pharmacy, Darussalam, Hyderabad, Telangana, India.
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Abstract:
Biomarkers provide a dynamic and powerful approach to understanding the spectrum of disease with applications in observational and analytic epidemiology, randomized clinical trials, screening and diagnosis and prognosis. Defined as alterations in the constituents of tissues or body fluids, these markers offer the means for homogeneous classification of a disease and risk factors, and the can extend our base information about the underlying pathogenesis of disease. A prerequisite for the clinical use of biomarker is elucidation of the specific indication, standardization of analytical methods, characterization of analytical features, incremental yield of different markers for given clinical indications. Biomarkers can also reflect the entire spectrum of disease from the earliest manifestations to the terminal stages.

PCG 007

BOURBON VIRUS

E.Sai Kiran*, N.Surender, B.Rajesh.
Vikas College of Pharmaceutical Sciences, Suryapet, Nalgonda (Dist), Telangana.
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Abstract

Bourbon virus is an RNA virus in the genus Thogotovirus of the family Orthomyxoviridae. It is newly discovered RNA virus, it is rare disease. First identified in 2014 in a man from Bourbon County, Kansas, United States, who died after being bitten by ticks. The Bourbon virus genome is single-stranded, negative-sense RNA, which is segmented, or divided into a number of separate pieces. It has at least six segments. The spherical virions have a range of diameters. Malaise, nausea, vomiting, diarrhea and a maculopapular rash on the abdomen is observed after infection, later on this virus cause shortness of breath, which developed into acute respiratory distress syndrome, multiple organ failure 11 days after the earliest symptoms lead to death. Laboratory abnormalities observed included a decrease in the patient's white cell and platelet counts, considered to be caused by bone marrow suppression, and an increase in liver enzyme levels. No routine diagnostic test is yet available. There is currently no specific treatment or vaccine for the virus; supportive therapy is recommended (antibiotics).

PCG 008

METAGENOMICS – REVOLUTIONALISING THE MICROBIAL INDUSTRY

Abdul Rashid*, Syed Aziz Uddin, Osman Ahmed.
Deccan School of Pharmacy. Hyderabad-500 001.Telangana, India.
Email Id: syedazizuddin13@gmail.com

Abstract

The evolution of modern medical world and microbial industries has a close association with the unicellular dynasty. History stands proof that microbes have played a vital role in eradicating and controlling many human ailments and at the same time touch other arenas of industrial importance. Many pharmaceutical products, ranging from antibiotics to anticancer drugs, have microbes as the smallest unit of factories for drug production. Fermentation and enzyme based industries have a treasure of microbes with special characteristics that make them
amenable to technological development. At a time when microbiologists thought that the microbial world was conquered, research studies showed that only 1% of the microbial community on earth can be studied using traditional methods, and all present developments had this small percent of microbes playing the active part. This enlightment lead to the development of metagenomics, an emerging field that allows studying of non-culturable microbes. Antibiotic turbomycin was one of the first discoveries from metagenomics; after that research intensified, which led to the unveiling of many bioactive compounds and enzymes of medical and industrial importance. Metagenomic research proved to be beneficial in finding novel antibiotics and anticancer drugs that have entered animal and pre-clinical study and also in finding enzymes with more efficiency and amenability.

PCG 009

siRNA THERAPEUTICS: A NOVEL APPROACH

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Abstract:
RNA interference is a naturally occurring endogenous regulatory process where short double stranded RNA causes sequence-specific post-transcriptional gene silencing. Small interference RNA (siRNA) represents a promising therapeutic strategy. Clinical evaluations of siRNA therapeutics in loco regional treatment settings began in 2004. Systemic siRNA therapy is hampered by the barriers for siRNA to reach their intended targets in the cytoplasm and to exert their gene silencing activity. The three goals of this review were to provide an overview of (a) the barriers to siRNA delivery, from the perspectives of physicochemical properties of siRNA, pharmacokinetics and bio distribution, and intracellular trafficking;(b) the non-viral siRNA carriers including cell-penetrating peptides, polymers, dendrimers, siRNA bio conjugates, and lipid based siRNA carriers; and (c) the current status of the clinical trials of siRNA therapeutics.

PCG 010

PHARMACOGENOMICS.

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Abstract
Pharmacogenomics (a portmanteau of pharmacology and genomics) is the study of the role of genetics in drug response. It deals with the influence of acquired and inherited genetic variation on drug response in patients by correlating gene expression or single-nucleotide polymorphisms with drug absorption, distribution, metabolism and elimination, as well as drug receptor target effects. The term pharmacogenomics is often used interchangeably with pharmacogenetics. Although both terms relate to drug response based on genetic influences, pharmacogenetics focuses on single drug-gene interactions, while pharmacogenomics encompasses a more genome-wide association approach, incorporating genomics and epigenetics while dealing with the effects of multiple genes on drug response. Pharmacogenomics aims to develop rational means to optimize drug therapy, with respect to the patients' genotype, to ensure maximum efficacy with minimal adverse effects. It attempts to eliminate the trial-and-error method of prescribing, allowing physicians to take into consideration their patient's genes, the functionality of these genes, and how this may affect the efficacy of the patient's current and/or future treatments (and where applicable, provide an explanation for the failure of past treatments). Such approaches promise the advent of "personalized medicine"; in which drugs and drug combinations are optimized for each individual's unique genetic makeup. Whether used to explain a patient's response or lack thereof to a treatment, or act as a predictive tool, it hopes to achieve better treatment outcomes, greater efficacy, minimization of the occurrence of drug toxicities and adverse drug reactions (ADRs). For patients who have lack of therapeutic response to a treatment, alternative therapies can be prescribed that would best suit their requirements. In order to provide pharmacogenomic-based recommendations for a given drug, two possible types of input can be used: genotyping or exome or whole genome sequencing. Sequencing provides many more data points, including detection of mutations that prematurely terminate the synthesized protein (early stop codon).

PCG 011

EVALUATION OF COAGULANT AND ANTI COAGULANT ACTIVITY OF SOME SPICES.

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Abstract
Spices do a whole lot more than liven up food. New research has found that the active ingredients in several common spices prevent platelet aggregation and blood clot formation without the side effects. Some spices when evaluated for anti blood coagulation the effect of the principle spice active compounds eugenol, piperine, pinene, alpha terpinol, borniol, geraniol , cinnamaldehyde, sinigrine, thymol, on human platelet aggregation. Demonstrated that each compound evaluated was able to significantly inhibit blood clotting. Furthermore, the compounds performed their anti-platelet aggregation activity against several different factors that promote the clotting of blood. Pinene, terpinol and borniol and geraniol the principle constituents of cumin and coriander respectively, were found to be the most potent inhibitors of arachidonic acid induced platelet aggregation. This ability was shown by the other tested compounds in the declining order of sinigrine, eugenol, thymol, cinnamaldehyde, and piperine.

PCG 012

PHYTOSOME – A NOVEL REVOLUTION IN HERBAL DRUGS

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Abstract
In the present scenario, most of the prevailing diseases and nutritional disorders are treated with natural medicines .The effectiveness of any herbal drug is dependent on the delivery of effective level of the therapeutically active compound .Phytosomes are one of the novel drug delivery system containing hydrophilic bioactive phytoconstituents of herbs surrounds and bound by phospholipids .This phytophospholipid complex resembles a little cell which exhibit better pharmacokinetics and pharmacodynamics profile than the conventional herbal extracts resulting in better bioavailability .Most of the bioactive constituents of phytomedicines are water soluble compounds like flavonoids ,glycosides, terpenoids etc. Because of water soluble extract and the lipophilic outer layer phytosomes shows better absorption and shows best bioavailability.

PCG 013

IN- VITRO ANTI-BACTERIAL EFFECT OF WASP (Vespa orientalis) VENOM

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Abstract
The emergence of antibacterial resistance against several classes of antibiotics is an inevitable consequence of drug overuse. As antimicrobial resistance spreads throughout the globe, new substances will always be necessary to fight against multidrug-resistant microorganisms. Venoms of many animals have recently gained attention in the search for new antimicrobials to treat infectious diseases. Therefore, the present study aimed to study the antibacterial effects of wasp crude venom. Two gram-positive bacteria (Staphylococcus aureus and Bacillus subtilis) and two gram-negative ones (Escherichia coli and Klesiella pneumonia) were compared for their sensitivity to the venom by

determining the inhibition zone and minimum inhibitory concentration (MIC). The venom exhibited a well-recognized antimicrobial property against the tested bacterial strains. The inhibition zones were determined to be 12.6, 22.7, 22.4 and 10.2 mm for S. aureus, B. subtilis, E. coli and K. pneumonia. The corresponding MIC values were determined to be 64, 8, 64 and 128µg/mL. The MIC50 and MIC90 values of the venom were determined to be 63.6 and 107µg/mL for S. aureus, 4.3 and 7.0µg/mL for B. subtilis, 45.3 and 65.7µg/mL for E. coli and 74.4 and 119.2µg/mL for K. pneumonia. Gram-positive bacteria were generally more sensitive to the venom than gram-negative ones. The venom inhibits the growth of both gram-positive and gram-negative bacteria and could be considered a potential source for developing new antibacterial drugs.

PCG 014

BIOPRINTING

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Abstract
In present investigation, an attempt was made to develop construction of tissues constructs using computer-aided, specialized 3D printers. A bioprinter is similar to an inert printer consists of a mixture of several cell types. An increasing demand for directed assembly of biologically relevant materials, with prescribed three dimensional hierarchical organizations, is stimulating technology developments with the ultimate goal of re-creating multicellular tissues and organs de novo. Existing techniques, mostly adapted from other applications or fields of research, are capable of independently meeting partial requirements for engineering biological or biomimetic structures, but their integration toward organ engineering is proving difficult. Results are Urinary Bladders - 2006, Urethra - 2011, Trachea – 2011, Esophagus - 2012. Future Developments like Transplantation, Regenerative Medicine, Traumatic Injuries, Combat Casualty and Cancer.

PCG015

GENE THERAPY: TECHNOLOGY AND APPLICATION

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ABSTRACT:
Gene therapy is an experimental technique that utilizes genes with a capacity to treat or to prevent the progression of a disease condition. The use of gene therapy has a broad scope in the treatment or altering the various clinical and genetic conditions like inherited disorders, eliminate cancerous cells, prevent cardiovascular diseases and also eliminate viral infectious pathogens. Gene therapy involves the transfer of a recognized therapeutic genetic material into a specified host cell or a target cell of an individual through viral (or bacterial) and non-viral vectors in order to repair a faulty gene. Hence it is utilized to repair or replace the faulty gene with a new gene causing immune-modulation of cells or the host immune system, and manipulation of the cell microenvironment, to increase cell antigenicity for better recognition by the host immune system resulting in cure or medication of the disease condition of the patient. The type and mode of gene therapy is determined based on an individual's genomic constituents, genetics and host immune condition, to design a treatment that is unique to each individual's specific needs.

PCG016

STEM CELL THERAPY
PRESERVE THE UMBILICAL CORD- THE LIFE SAVER FOR LIFE

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Abstract
Stem cell therapy is the use of stem cells to treat or prevent a disease or condition. Stem cell research in animals using embryonal stem cell has been an ongoing program in the west with fruitful results of the various sources of stem cells, umbilical cord blood stem cell research has shown potential for future treatment in Alzheimer's, Parkinson's, heart attack, stroke and spinal cord injuries. Human trials have been done in diseases like spinal cord injury and chronic liver cirrhosis. Umbilical cord blood stem cells have already been effectively used in the treatment of sickle cell, leukemia, non-Hodgkin's lymphoma and some other cancers, life threatening anemias and auto-immune diseases. It involves the replacement of degenerated stem cells with the preserved stem cells which have the capacity to turn into any type of cell in the body such as bone, blood, tissue and brain. The clinical scope of the use of stem cell therapy could be endless.

PCG017

TICKBORNE – BOURBONVIRUS

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Abstract:
Bourbon virus belongs to a group of virus called as thogotovirus. Viruses of this group are found all over the world. Few of these viruses can cause people to get sick. A previously healthy man from eastern Kansas, USA, sought medical care in late spring because of a history of tick bite, fever, and fatigue. The patient had thrombocytopenia and leukopenia and was given doxycycline for a presumed tickborne illness. His condition did not improve. Multiorgan failure developed, and he died 11 days after illness onset from cardiopulmonary arrest. Molecular and serologic testing results for known tickborne pathogens were negative. However, testing of a specimen for antibodies against Heartland virus by using plaque reduction neutralization indicated the presence of another virus. Next-generation sequencing and phylogenetic analysis identified the virus as a novel member of the genus *Thogotovirus*. Bourbon virus disease, symptoms include fever, tiredness, rash, headache, other body aches, nausea, and vomiting. The person also had low blood counts for cells that fight infection and help prevent bleeding. There is no vaccine or drug to prevent or treat Bourbon virus disease. Therefore, preventing bites from ticks and other insects may be the best way because there is no medicine to treat Bourbon virus disease; doctors can only treat the symptoms. For example, some patients may need to be hospitalized and given intravenous fluids and treatment for pain and fever. Antibiotics are not effective against viruses, including Bourbon virus to prevent infection.

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PCU 001

FORMULATION AND IN-VITRO EVALUATION OF MOUTH DISSOLVING TABLETS OF AMLODIPINE (IP) & ROSUVASTATIN (IP)

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Abstract

Mouth Dissolving Tablets (MDT) are most accepted and exploited for the drug delivery for the patients who are having difficulty with swallowing i.e., mainly pediatric's and Geriatric's. Amlodipine besylate (ADB) is an anti-hypertensive and it is also used in many Coronary artery diseases, Whereas Rosuvastatin Calcium (RSC) is an anti-hyperlipidemia that prevents of Atheroma. In the present study a combination of ADB, RSC is formulated into a mouth dissolving tablet using three super disintegrants such as Croscarmellose Sodium (CCS), Cross povidone (CP), Sodium Starch Glycolate (SSG) at various concentrations to enhance the disintegration and dissolution of ADB, RSC to improve bioavailability of the drugs. The tablets were prepared by using direct compression method and evaluated for weight variations, Hardness, Friability, Wetting time, disintegration time (DT) and Dissolution study. Prepared tablets are subject to FT-IR Study for Characterization and compatibility study. No Chemical interaction between drug and excipients were indicated in the FT-IR. Disintegration and dissolution profiles decreases with addition of super disintegrating agents like Croscarmellose Sodium (CCS), Cross povidone (CP), Sodium Starch Glycolate (SSG). The values of hardness, thickness, friability, weight variation, wetting time, water absorption ratio, moisture uptake study, invitro disintegration time and drug content of all the MDT were found to be within the limits as stated in the Indian Pharmacopeia. The optimized formulation (F12) was found with hardness 2.5 kg/cm^2; thickness-3.21mm, %friability-0.13, weight variation-149 $\pm$ 0.02 and drug content- 98.8±0.19 were found to be in the accepted range. Among all the twelve formulations, F12 which contains CP in 5% and SSG 5% Concentration found to be best in drug release profile i.e., 99% in 6mins.

PCU 002

NANOTECHNOLOGY IN THE TREATMENT OF CANCER

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Abstract

Nanotechnology is the study and use of structures between 1 nanometer and 100 nanometers in size. Cancer is the leading cause of death among younger people below 85 years of age. Cancer nanotechnology is an interdisciplinary area of research in science, engineering and medicine with broad applications for molecular imaging, molecular diagnosis and targeted therapy .Because of their, nano scale, devices can readily interact with bio molecules on both the surface of cells and inside of cells. By gaining access to so many areas of the body, they have potential to detect diseases and deliver treatment in faster ways. This concept of nanoscales devices has led to the development of bio degradable self assembled nanoparticles, which are being engineered for the targeted delivery of anti cancer drugs. This type of treatment has raised exciting paths, which contains genetics and protein bio markers used to diagnose and treat cancer based on the molecular profiles of individual's. Finally, nanotechnology is still developing science can be defined as next generation techniques for cancer disease; at the same time it comes with many advantages to treat cancer patients.

PCU 003

FLOATING DRUG DELIVERY SYSTEM (FDDS)

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Abstract
Oral controlled release delivery systems are programmed to deliver the drug in predictable time frame that will increase the efficacy and minimize the adverse effects and increase the bioavailability of drugs. It is most widely utilized route of administration among all the routes that have been explored for systemic delivery of drugs via pharmaceutical products of different dosage form. Recent technological and scientific research has been devoted to the development of rate controlled drug delivery systems to overcome physiological adversities such as short gastric residence times and unpredictable gastric emptying times. Differences in gastric physiology such as gastric pH and motility exhibit both intra and inter subject variability demonstrating significant impact on gastric residence time and drug delivery behavior. This triggered an increased interest towards formulation of novel delivery systems which retained in the stomach for prolonged and predictable period of time. FDDS are of particular interest for drugs that are locally active and have narrow absorption window in stomach or upper small intestine, unstable in the intestinal or colonic environment, and exhibit low solubility at high pH values.This gives information on the pharmaceutical basis of their design, classification, advantages, *in vitro* and *in vivo* evaluation parameters, and the future potential of FDDS.

PCU 004

FORMULATION AND EVALUATION OF ORO-DISPERSIBLE TABLETS OF IVABRADINE BY SUBLIMATION TECHNIQUE

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Abstract
Recent developments in Oro-dispersible/disintegrating tablets have brought convenience in dosing to elderly and children who have trouble in swallowing tablets. The objective of the present study was to prepare the mouth disintegrating tablet of ivabradine. Tablets of drug were prepared by sublimation method or technique. The drug ivabradine is fused with excipients i.e.; superdisintegrants, menthol, talc, magnesium stearate, vanillin, lactose monohydrate, starch. The superdisintegrant which gives the best release of ivabradine is selected to prepare the oro dispersible tablet. Different super disintegrates such as CCS, SSG, CP were used. The tablets were prepared by direct compression technique. Ivabradine is a class II Anti angina drug. It is a selective inhibitor of cardiac I_f (funny) channels. It is one of the most important ionic currents for regulating pacemaker activity in the sinoatrial (SA) node. Present work involves attempts to improve spare bioavailability of ivabradine through sublimation technique and induce fast disintegrating property using super disintegrants. In the formulation of ivabradine oro dispersible tablets, initially ivabradine fused with cross carmellose sodium (optimized super disintegrate), is used as API and sublimating agent menthol were added to the formulation, results showed that 99% was released in 15min in formulation (F7), and 94% was released in 30min from the formulation containing super disintegrant Cross povidone (F8), and 95% was released in 30min from the formulation containing super disintegrant sodium starch glycolate (F9). In formulation F7, the super disintegrant CCS (15%) and sublimating agent menthol (10%) was added and 99% was released in 15min, which is the highest amongst all and hence this is finalized. All these tablets showed required hardness, limited friability and good disintegration time (with in IP and

USP limits). All the formulations were evaluated for drug content and results are obtained. Amongst all formulations, formulation F7 and CCS as super disintegrant showed the least disintegration time and faster dissolution.

PCU 005

NANOTECHNOLOGY AND NANOPARTICLES IN TARGETED DRUG DELIVERY SYSTEM FOR CANCER TREATMENT

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Abstract
Nanotechnology ("nanotech") is the manipulation of matter on an atomic, molecular, and supramolecular scale. In medicine, nanotechnology has sparked a rapidly growing interest as it promises to solve a number of issues associated with conventional therapeutic agents, including their poor water solubility (at least, for most anticancer drugs), lack of targeting capability, nonspecific distribution, systemic toxicity, and low therapeutic index. Over the past several decades, remarkable progress has been made in the development and application of engineered nanoparticles to treat cancer more effectively. Nanoparticles and their payloads have also been favorably delivered into tumors by taking advantage of the pathophysiological conditions, such as the enhanced permeability and retention effect, and the spatial variations in the pH value. Additionally, targeting ligands (e.g., small organic molecules, peptides, antibodies, and nucleic acids) have been added to the surface of nanoparticles to specifically target cancerous cells through selective binding to the receptors overexpressed on their surface. Furthermore, it has been demonstrated that multiple types of therapeutic drugs and/or diagnostic agents (e.g., contrast agents) could be delivered through the same carrier to enable combination therapy with a potential to overcome multidrug resistance, and real-time readout on the treatment efficacy. It is anticipated that precisely engineered nanoparticles will emerge as the next-generation platform for cancer therapy.

PCU 006

DRUG LOADED ERYTHROCYTES: AS A NOVEL DRUG DELIVERY SYSTEM

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Abstract
Novel drug delivery systems are one of the widely used delivery systems. In the present scenario, amongst them, "Drug Loaded Erythrocytes" is one of the growing and potential systems for delivery of drugs and enzymes. Erythrocytes are biocompatible, biodegradable, possess long circulation half-life and can be loaded with variety of biologically active substances. Carrier erythrocytes are prepared by collecting blood sample from the organism of interest and separating erythrocytes from plasma. By using various physical and chemical methods the cells are broken and the drug is entrapped into the erythrocytes, finally they are resealed and the resultant carriers are then called "resealed erythrocytes". Surface modification with glutaraldehyde, antibodies, carbohydrates like sialic acid and biotinylation of loaded erythrocytes (biotinylated erythrocytes) is possible to improve their target specificity and to increase their circulation half-life. Upon reinjection the drug loaded erythrocytes serve as slow circulation depots, targets the drug to the reticulo endothelial system (RES), prevents degradation of loaded drug from inactivation by endogenous chemicals, attain steady state concentration of drug and decrease the side-effects of loaded drug. Nowadays, Nanoerythrosomes based drug delivery systems have excellent potential for clinical application.

PCU 007

ZEIN-BASED FILMS AND THEIR USAGE FOR CONTROLLED DRUG DELIVERY SYSTEM

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Abstract
Zein is the most important protein in corn. It is a prolamin protein and therefore dissolves in 70–80% ethanol. Zein is a relatively hydrophobic and thermoplastic material. The hydrophobic nature of zein is related to its high content of non-polar amino acids. Technically, the films made from an alcohol soluble protein like zein, have relatively high barrier properties compared to other proteins. Zein has excellent film forming properties and can be used for the fabrication of biodegradable films. Zein film is formed through the development of hydrophobic, hydrogen and limited disulfide bonds between zein chains. The resulting films are brittle and therefore require the addition of plasticizer for increasing the flexibility. Zein films are relatively good water vapor barriers compared to other edible films. Zein coating have also shown an ability to reduce moisture and loss of firmness and delay color change (the reduction of oxygen and carbon dioxide transmission) in fresh fruit. In addition, zein may also take part in the coating of conventional packaging plastics. Although, zein is definitely not water soluble at a neutral pH, it has high water vapor permeability compared with typical synthetic polymers. However, the water vapor barrier properties can be improved by adding fatty acids or by using a cross-linking reagent. This review will benefit future prospects of the use of zein film in drug delivery and biomedical applications.

Keywords: Zein, Film, Coating, Controlled delivery, Biomedical application.

PCU 008

FORMULATION, DEVELOPMENT AND INVITRO EVALUATION OF PINDOLOL (PDL) SUPPOSITORY FOR THE TREATMENT OF HYPERTENSION.

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Abstract
Pindolol (PDL) is a non selective moderately lipophillic beta – blocker (adrenergic beta- antagonists). Chemically it is [2-hydroxy-3-(1H-indol-4-yloxy) propyl] (propan-2-yl) amine. It is non-cardioselective and has intrinsic sympathomimetic actions, but little membrane-stabilizing activity. The purpose of this study was to develop immediate release rectal suppositories. Different formulation of 20mg Pindolol were prepared as immediate release rectal suppositories by fusion method PEG 4000, PEG 6000 and Polaxomer188 are hydophillic bases used as standard excipients for formulation of Pindolol (PDL) suppository. Cross carmallose sodium (CCS) was used as super disintegrant with a view to improve bioavailability. The prepared suppositories were evaluated for visual characteristion, hardness, thickness, friability, melting point, Weight variation, Disintegration time, Content uniformity, In-vitro drug release. The drug release profiles were studied in phosphate buffer P^H 7.4.The optimized formulation of Pindolol suppository containing different ratios of hydrophilic base(PEG 4000) and superdisintegrant (Cross carmallose sodium) was found to be having no interactions upon FT-IR analysis. Differential scanning colorimetry characterization of optimized formulation showed respective peaks at different temperature revealing the compatibility of the drug and hydrophillics bases formulated with the superdisintegrant. Visual characterisation revealed that any fissuring, pitting, fat bloom, exudation and migration of active ingredients were not found in any of the formulation from F_1-F_9. All the formulations were found to be within limits. Invitro drug release studies showed that among all formulations, F5 formulation was considered as optimised formulation as it showed 99.14% of drug release within 180 mins. The data obtained in the in vitro drug release studies were fitted into various

kinetic equations like Zero order, first order Higuchi, Korrs- meyer peppas equation. The kinetic data shows the values were best fitted to Higuchi model. Stability studies as per ICH guidelines on promising prepared suppository indicated that there are no significant changes in physical characterization and drug release patterns.

PCU 009

FORMULATION AND EVALUATION OF BILAYERED TABLET OF CAPTOPRIL AND GLIMIPERIDE

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Abstract
Diabetes mellitus generally accompanied with major complications like Hypertension, Cardio myopathy, Stroke, Hyperlipidemia, Ischemic cerebrovascular disease, and Peripheral vascular disease. These conditions account for most morbidity and mortality among middle-aged and older people. The drug of choice for type2 diabetes mellitus is glimiperide and for Hypertension is captopril, to reduce the prevention of cardiac problems in diabetic patients. The objective of this research work was to overcome the above complication and to establish Bilayer tablet of Glimepiride (SR) with Captopril (IR) as a once daily formulation. The formulations of tablets (F1-F6) were prepared by using release retarding agents like HPMC, guar gum and xanthum gum for sustained release (SR) layer and super disintegrants like Crosscarmellose sodium, Sodium starch glycolate (SSG) for immediate release (IR) layer. Both sustained and immediate release granules were evaluated for flow property. Bilayer tablets were evaluated for weight variation, hardness, thickness, swelling index and in-vitro drug release for 12 hours. The optimized formulation F4 in IR formulations contains the average thickness of 3.07mm, average hardness of 3.13 kg/cm^2, average weight of 150mg, friability of 0.26%. The optimized formulation F5 in SR formulations contains the average thickness of 3.43mm, average hardness of 6.25 kg/cm^2, friability of 0.24%.The optimized tablet releases the Glimiperide in sustained manner in 1^{st} hour it releases 12.32% but the remaining drug release was sustained up to 24 hours and Captopril immediate release F4 formulation showed 97.50% drug release with in 30 min. With the data of kinetic analysis, optimized tablet showed best linearity in Zero order plot indicating that the release of drug from matrix tablet follows Non Fickian diffusion. The dissolution study was carried out for optimized bilayer tablet and it correlates with the drug release of individual release layer formulations. The result suggest that the developed Bilayer tablet of Glimepiride (SR) with Captopril (IR) could perform therapeutically better and improve efficacy than conventional dosage forms, and also it trounce the severe diabetic complication especially hypertension.

PCU 010

ORODISPERSIBLE TABLETS: A NEW TREND IN DRUG DELIVERY

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Abstract
The most common and preferred route of drug administration is through the oral route. Orodispersible tablets are gaining importance among novel oral drug-delivery system as they have improved patient compliance and have some additional advantages compared to other oral formulation. They are also solid unit dosage forms, which disintegrate in the mouth within a minute in the presence of saliva due to super disintegrants in the formulation. Thus this type of drug delivery helps a proper peroral administration in pediatric and geriatric population where swallowing is a matter of trouble. Various scientists have prepared orodispersible tablets by following various methods. However, the most common method of preparation is the compression method. Other special methods are molding, melt

granulation, phase-transition process, sublimation, freeze-drying, spray-drying, and effervescent method. Since these tablets dissolve directly in the mouth, so, their taste is also an important factor. Various approaches have been taken in order to mask the bitter taste of the drug. A number of scientists have explored several drugs in this field. Like all other solid dosage forms, they are also evaluated in the field of hardness, friability, wetting time, moisture uptake, disintegration test, and dissolution test. These conventional dosage forms result in high incidence of noncompliance and ineffective therapy with respect to swallowing specially in the case of pediatric, geriatric, or any mentally retarded persons. Orodispersible tablets are also called as orally disintegrating tablets, mouth-dissolving tablets, rapid-dissolving tablets, fast-disintegrating tablets, fast-dissolving tablets.

PCU 011

MICROSPONGES – A NOVEL DRUG DELIVERY SYSTEM

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Abstract

Micro sponges are polymeric drug delivery systems composed of porous microspheres. These systems are based on microscopic, polymer-based microspheres that can suspend (or) entrap a wide variety of substances and can then be incorporated into the formulated product such as gel, creams, liquid or powder. The outer surface is typically porous, allowing a sustained release of substances out of the sphere. Micro sponges are designed to deliver a pharmaceutical active ingredient efficiently at the minimum dose and also enhance stability, reduce side effects and modify drug release. This type of drug delivery system holds a promising future in pharmaceutical applications in the coming years like enhanced product performance and elegancy, extended release, reduced irritation, improved thermal, physical and chemical stability of products. It is a unique technology for the controlled release of topical agents and consists of micro porous beads loaded with active agent and also use for oral delivery of drugs using biodegradable polymers, especially for colon specific delivery and controlled release drug delivery system.

PCU 012

THE ROLE OF ABSORPTION, DISTRIBUTION, METABOLISM, EXCRETION IN DRUG DISCOVERY

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Abstract

Over the past 20 years, there has been a growing recognition that the discovery of effective therapeutic agents involves designing compounds that possess appropriate "pharmaceutical" or "drug-like" properties in addition to high affinity for their biological targets. The pharmaceutical properties include solubility, permeation across barriers such as the intestinal epithelium or blood-brain barrier, and metabolic and excretory clearance. Appropriate balance of these properties enables drug molecules to attain and maintain sufficient systemic and/or target concentrations to exert therapeutic effects through optimum absorption, distribution, metabolism, and excretion (ADME) processes. A drug that is poorly absorbed, rapidly metabolized, or rapidly excreted via the renal or hepatic route will not attain its full therapeutic potential. Such a drug will require higher doses to achieve sufficiently high target concentrations for efficacy, which may not be practical in some cases or may cause adverse effects in others. Major reasons preventing many early candidates reaching market are the inappropriate ADME properties. From a commercial perspective, it is desirable that poorly behaved compounds are removed early in the discovery phase rather than during the more costly drug development phases. As a consequence, over the past decade ADME screening studies have been incorporated earlier in the drug

discovery phase. The intent of this review is to introduce the desirable attributes of a new chemical entity (NCE) to medicinal chemist from an ADME perspective. Experimental approaches used by the drug metabolism scientist to aid modern project team in predicting human pharmacokinetics, pharmacodynamics and assessing the "drug-like" molecule are discussed.

PCU 013

MEDICATED CHEWING GUM: A NOVEL DRUG DELIVERY SYSTEM

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Abstract
In the recent years scientific and technological advancements have been made in the research and development of oral drug delivery systems. The reasons that the oral route achieved such popularity may be primarily due to its ease of administration. Chewing gum is one of the very popular oral confectionary products. It is a potentially useful means of administering drugs either locally or systematically via, the oral cavity. The medicated chewing gum has through the recent years gained increasing acceptance as a drug delivery system. Chewing gum known as gum base (insoluble gum base resin) contains elastomers, emulsifiers, fillers, waxes, antioxidants, softners, sweeteners, food colorings, flavouring agents, and in case of medicated chewing gum, active substances. It offers various advantages over conventional drug delivery systems. Unlike chewable tablets, medicated chewing gums are not supposed to be swallowed and may be removed from the site of application without resorting to invasive means. Moreover the medicated chewing gums require the active and continuous masticatory activities for activation and continuation of drug release. An In-vitro apparatus was specially designed and constructed for the release testing of medicated chewing gums. Medicated chewing gums are excellent mobile drug delivery systems for self-medication as it is convenient and can be administered without water.

PCU 014

FORMULATION AND *IN-VITRO* EVALUATION OF ORAL DISPERSIBLE TABLETS OF NARATRIPTAN AND GRANISETRON

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ABSTRACT:
The most common and preferred route of drug administration is through the oral route. Orodispersible tablets are gaining importance among novel oral drug-delivery system as they have improved patient compliance and have some additional advantages compared to other oral formulation. They are also solid unit dosage forms, which disintegrate in the mouth within a minute in the presence of saliva due to super disintegrants in the formulation. In the present study a combination of naratriptan and granisetron is formulated into a oral dispersible tablet by sublimation technique using four super disintegrants such as Croscarmellose Sodium (CCS), Cross povidone (CP), Sodium Starch Glycolate (SSG) and hydroxyl propyl cellulose (LHPC) at various concentrations to enhance the disintegration and dissolution of naratriptan and granisetron to improve bioavailability of the drugs. The tablets were prepared by using sublimation technique method using camphor as a sublimating agent and evaluated for weight variations, Hardness, Friability, Wetting time, disintegration time (DT) and Dissolution study. Disintegration and dissolution profiles decreases with addition of super disintegrating agents like Croscarmellose Sodium (CCS), Cross povidone (CP), Sodium Starch Glycolate (SSG), Hydroxyl propyl cellulose (LHPC). Among all the formulation, F3 with LHPC in 15% Concentration found to be best in drug release profile as it shows 99% drug release in 20 min. The dissolution profiles and drug

content of the tablets were found to be satisfactory and there are subjected to stability studies at 40°C and 75%RH for 3 months as per ICH guidelines.

PCU 015

VESICULAR SYSTEM-CARRIER FOR DRUG DELIVERY

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Abstract

Liposomal drug delivery can be put forth as the cynosure for the release kinetics of lipophillic drugs that require compartmental models in its therapeutics and triggers. The localization of the drug at the site of action, rate of achieving the therapeutic index and circulation lifetime are the key parameters for a liposome. Lately, their arises a need for a multi-compartment structure consisting of drug-loaded liposomes encapsulated within another bilayer, is a promising drug carrier with better retention and stability. A vesosome contemplates a large lipid bilayer enclosing many smaller liposomes, serving as a support for the customization of separate environments for multiple therapeutics and release triggers, highlighting the -vesosomes potential as a single site, single dose, and multiple component drug treatment. A simple method of creating nested bilayer compartments *in vitro* via the “interdigitated” bilayer phase formed by adding ethanol to a variety of saturated phospholipids. At temperatures below the gel-liquid crystalline transition, Tm, the interdigitated lipid-ethanol sheets are rigid and flat; when the temperature is raised above Tm, the sheets become flexible and close on themselves and the surrounding solution to form closed compartments. During this closure, the sheets can entrap other vesicles, biological macromolecules, or colloidal particles. The result is efficient and spontaneous encapsulation without disruption of even fragile materials to form biomimetic nano-environments for possible use in drug delivery, colloidal stabilization, or as microreactors. The present paper tries to tap another vesicular drug delivery comport such that release and bioavailability of liposomes is taken to another level.

PCU 016

LIPID-BASED DRUG DELIVERY SYSTEMS

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Abstract

The principle objective of formulation of lipid-based drugs is to enhance their bioavailability. The use of lipids in drug delivery is no more a new trend now but is still the promising concept. Lipid-based drug delivery systems (LBDDS) are one of the emerging technologies designed to address challenges like the solubility and bioavailability of poorly water-soluble drugs. Lipid-based formulations can be tailored to meet a wide range of product requirements dictated by disease indication, route of administration, cost consideration, product stability, toxicity, and efficacy. These formulations are also a commercially viable strategy to formulate pharmaceuticals, for topical, oral, pulmonary, or parenteral delivery. In addition, lipid-based formulations have been shown to reduce the toxicity of various drugs by changing the biodistribution of the drug away from sensitive organs. However, the number of applications for lipid-based formulations has expanded as the nature and type of active drugs under investigation have become more varied. This paper mainly focuses on novel lipid-based formulations, namely, emulsions, vesicular systems, and lipid particulate systems and their subcategories as well as on their prominent applications in pharmaceutical drug delivery.

PCU 017

NIOSOMES: A FUTURE OF TARGETED DRUG DELIVERY SYSTEM

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Abstract
Niosomes are non-ionic surfactant based multilamellar or unilamellar vesicles in which an aqueous solution of solute is entirely enclosed by a membrane resulting from the organization of surfactant macromolecules as bilayer. Niosomes are formed on hydration of non-ionic surfactant film which eventually hydrates imbibing or encapsulating the hydrating aqueous solution. Niosomes proved to be a promising drug carrier and has potential to reduce the side effects of drugs and increased therapeutic effectiveness in various diseases. The main aim of development of niosomes is to control the release of drug in a sustained way, modification of distribution profile of drug and for targeting the drug to the specific body site. This paper deals with advantages, preparations and evaluation and pharmaceutical applications of niosomes.

PCU 018

NEEDLE-FREE INJECTIONS DRUG DELIVERY SYSTEM

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Abstract
Needle free injection technology was developed to reduce the number of needle stick accidents and associated problems. Needle free injection systems are innovative ways to introduce a variety of medicines in patients without piercing the skin with a traditional needle. These systems work by the mechanism in which liquid medication is forced at an elevated speed through a small orifice that is held against the skin. Due to this an ultrafine stream of high pressure fluid is created, that penetrates the skin devoid of the use of a needle, thus faster administration of drug occurs as compared to conventional needles. Needle free systems are designed to solve the problems created due to conventional needles making them safer, less expensive, and more suitable. It is expected that these systems will augment the rate of vaccination and reduce the amount of antibiotics prescribed. Needle free injection technology is growing and has the potential to make the administration of medicine more efficient, safe and convenient Moreover, they should decrease the occurrence of needle stick accidents that have been seen in some health care workers contracting diseases. Today, they are an increasingly rising technology that promises the administration of medicine efficient with reduction of pain. Companies are not only working on developing technologies that are safer and easier to use, but also on alternatives which can deliver more types. There appears to be tremendous opportunity for needle-free technology to have major impact in the industry. Invention of needle free injection technologies is to achieve this by improving the patient experience and removing the barriers to self-injection, such as the fear of needles. According to Food and drug administration [FDA] A needle-less or needle free injection is a device used for the parentral administration of a medicament is disclosed. They can take the form of power sprays, edible products, inhalers, and skin patches. It is likely that dramatic change may occur only when a large pharmaceutical or biotechnology company adopts needle free technology and demonstrates it as needle free injections which are well being supported by organizations like WHO and CDC (Centre for Disease Control).

PCU 019

ACTIVELY TUMOUR TARGETING NANOTHERANOSICS: A PROMISING APPROACH

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Abstract
Nanotheranostics is the integration of diagnostic and therapeutic function in one system. The theranostic nanomedicine can achieve systemic circulation, evade host defenses, and deliver the drug diagnostic agents at the targeted site to diagnose and treat the disease at cellular and molecular level. The fruition of nanotheranostics could provide a potential high-paradigm for addressing current treatment roadblocks and persistent clinical needs which are not successfully addressed with current approved technologies. This is because chemotherapy and radiation therapy has been incapable to fight against devastating effects of cancer and moreover these therapies damage the normal cells of the body. It makes even the fatal diseases curable or at at least treatable at the earliest stage. It can make use of ligand polymers for targeting the over expressed receptors in the tumor cells which leads to the endocytosis of the tumor cells. For the design of the nanotheranostics platform requires an understanding of the following at the outset:the nanotechnology potential,the accessible molecular target(s) and high value therapeutics in the context of disease progression complexities, the clinically pertinent targeted–imaging the clinically feasible targeted–delivery, and the needed preclinical model for testing in vivo efficacy and safety. The introduction of nanotheranostics has sill a long way to go since evaluations in several aspects are yet to be confirmed.

PCU 020

ORAL INSULIN: NEEDLES TO GET NEEDLESS.

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Abstract
Insulin is the most effective glucose-lowering agent, which stimulates glucose uptake in skeletal muscles, myocardium, and other tissues in order to control glucose homeostasis. Is usually administered to diabetic patients through subcutaneous injection. However, the problems encountered with subcutaneous insulin injections are pain, allergic reactions, hyperinsulinemia, and insulin lipodystrophy around the injection site. Insulin if administered via the oral route will help eliminate the pain caused by injection, psychological barriers associated with multiple daily injections such as needle anxiety and possible infections. In addition, oral insulin is beneficial because it is conveyed directly to the liver, its primary site of action, via the portal circulation, a mechanism complimentary to endogenous insulin; subcutaneous insulin treatment however does not replicate the normal dynamics of endogenous insulin release, resulting in a failure to achieve a lasting glycemic control in patients. Insulin in its present form cannot be administered throughoral route. Scientists have been trying hard to design an oral delivery system for insulin by applying several approaches.

PCU 021

ADVERSE EFFECTS OF ENGINEERED NANOPARTICLES

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Abstract
Recent emphasis of research on engineered nanomaterials (ENM) can be justified by the fact that nowadays ENM or the use of nanotechnology can be found in a wide variety of commercial products

with more than a fivefold increase in the last 5 years. The increase in ENM use is primarily due to the physicochemical properties that distinguish them from other well-known man induced and/or environmental substances and particulates; properties that confer to ENM great potential for industrial, commercial and biomedical applications. Despite their extensive use, still little information is available on the toxicity, biodistribution and clearance of ENM and their potential to trigger adverse reactions for human health.

PCU 022

SMART INSULIN PATCH FOR DIABETES

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Abstract
A "smart insulin patch" that could potentially dispel the need for painful insulin injections for millions of people worldwide with diabetes has been developed by a team at the University of North Carolina (UNC) and North Carolina State University. It employs painless micro needles to sense the low oxygen environment created when glucose levels rise and then delivers insulin as required.This is the first approach adopting this strategy of sensing low oxygen levels; other similar nanoparticle technologies in development rely instead on detecting changes in pH.

PCU 023

NOVEL CHEMOTHERAPIC TECHNIQUES – SILVER BULLETS & WRIST WATCH FORMULATION

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Abstract
Cancer is a disease that touches everyone in the world, globally, cancer is responsible for 1/8th of all deaths, which is more than HIV/AIDS, malaria, and tuberculosis combined. Gastric cancer provides a poignant example because patient symptoms typically do not arise until the cancer has progressed to stage IV originating in the gastro-intestinal tissue lining and kills 650,000 people with 870,000 new cases diagnosed annually. People diagnosed with gastric cancer dictates systemic chemotherapy treatment traditionally conducted with regular injections or an embedded catheter subjecting to suffering and additional pain beyond the discomforts of chemotherapy and cause large variations in patient exposure concentrations over the course of the treatment; survival rates for gastric cancer suggest this approach is not entirely effective. Therefore, there is a great need for development of new technology to treat cancer patients with two goals (1) effectively treats cancer patients to eradicate disease and (2) make cancer treatments as painless and noninvasive as possible. The attempt was made to combine unique technologies into a microfluidic device to provide novel nanoscale drug delivery for cancer patients via a wrist device resembling a watch and microneedle which shows the global view of chemotherapy drug delivery system. The novel drug delivery microdevice wrist system could be improved by incorporating a biosensor, in-line feedback control, and wireless reporting will allow for real-time drug and treatment monitoring. The advantages of adding in this technology would be decreases in patient drug side effects, uniform maintenance of the critical drug concentration delivered to the gastric tumor and CTCs, increased treatment effectiveness, and increased patient comfort. Chemotherapy is a category of cancer treatment that uses chemical substances,especially one or more anti-cancer drugs. This treatment usually involves the delivery of drug, with other drugs through central venous catheters. Catheters and their connectors are increasingly treated with silver or argentic alloys/compounds. Based on evidence from previous studies, the pain level can be greatly reduced and the chemotherapy droplets reach their target areas in a more efficient manner thus reducing side effects.

PCU 024

INNOVATIONS IN THE FIELD OF NON-INVASIVE INSULIN DRUG DELIVARY SYSTEM

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Abstract
Prevalence of Diabetes is escalating worldwide, out of which approximately 5-10% with type 1 diabetes while the remaining 90% with type 2.Currently available delivery systems for the administration of insulin include insulin syringes, infusion pumps, supersonic jet injectors, sharp needles and pens has been adopted.The quest to eliminate the needle from insulin delivery and to replace it with non- or less-invasive alternative routes has driven rigorous pharmaceutical research to replace the injectable forms of insulin, to reduce the pain and hypoglycemic incidences associated with injections in order to improve patient compliance. The newer methods explored include the artificial pancreas with closed-loop system, cell penetrating peptide and silica-based nanoporous composites, transdermal insulin, inhalation methods of insulin delivery by Exubera and Afreeza, and other buccal, oral and pulmonary routes.

PCU 025

TRANSDERMAL TULOBUTEROL PATCH, A LONG ACTING β2 - AGONIST

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Abstract
Tulobuterol patch (Hokunalin Tape), which contains a β2-adrenergic agonist, is the first bronchodilator to be available as a transdermal patch. This drug delivery system ensures that the time at which the peak drug concentration in the blood is reached coincides with the morning dip in respiratory function; the use of the patch also prevents excessive increase in blood drug concentrations, thereby reducing the incidence of systemic adverse reactions. Since, 1998, when it was first approved in Japan and worldwide, the tulobuterol patch has been used widely in the treatment of bronchial asthma and chronic obstructive pulmonary disease (COPD), and evidence collected since it was approved has confirmed its clinical efficiency and safety. Because the patch is easy to use and requires only one daily application, treatment adherence of patients using the patch is good. In this we evaluate data on its clinical efficiency and safety in the treatment of asthma and COPD and examine the treatment adherence in individuals using the patch.

PCU 026

TRANSDERMAL PATCHES: A REVIEW ON NOVEL APPROACH FOR DRUG DELIVERY

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Abstract
Transdermal drug delivery represents one of the most rapidly advancing areas and established itself as an integral part of novel drug delivery systems. Today about 74% of drugs are taken orally and are found not to be as effective as desired. Drug delivery through the skin to achieves a systemic effect without producing any fluctuations in plasma concentration of the drug. Drugs that are given by transdermal route may enhance the potency as well as safety of drugs. A transdermal drug delivery device (pharmaceutical preparation of varying sizes, containing, one or more active ingredient), which provides an alternative route for administering medication defined as self contained, discrete dosage forms which, when applied to the intact skin, deliver the drug, through the skin at controlled rate to the systemic circulation therefore system can improve the therapeutic efficacy and safety of the drugs.

These devices allow for pharmaceuticals to be delivered across the skin barrier. An advantage of a transdermal drug delivery route over other types of medication delivery such as oral, topical, intravenous, intramuscular, etc. is that the patch provides a controlled release of the medication into the patient, usually through either a porous membrane covering a reservoir of medication or through body heat melting thin layers of medication embedded in the adhesive. Transdermal drug technology specialists are continuing to search for new methods that can effectively and painlessly deliver larger molecules in therapeutic quantities to overcome the difficulties associated with the oral route.

PCU 027

MICROCHIPS FOR DRUG DELIVERYSYSTEM

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Abstract
Microchip drug delivery system is the most wonderful system of delivering the drug for a great span of time without the intervention of the patient to whom it is fixed. It consists of varied number of sockets containing drug (generally ranging from 50-300) which release the drug at the fixed intervals each at a time. Microchips have developed its core technology for drug delivery by hermetically sealing small quantities of drug in the micro reservoirs, and releasing that drug on schedule or demand. In drug delivery,there are several fundamental challenges: Long-term storage and protection of the compound,Appropriate delivery (i.e., timing and pharmacokinetics), Release of precise amounts of a compound at desired interval Compliance to prescribed therapy.A microchip system has the ability to store a large number of drugs or chemicals, control the time at which release begins, and control the rate at which the chemicals are released. Drug delivery device is capable of controlled, pulsatile or continuous release of a wide variety of drugs that can be safely implanted inside the body. The microchip could be integrated with a tiny power supply and controlled by a microprocessor, remote control, or biosensors.

PCU 028

ULTRA DEFORMABLE VESICLES OF NYSTATIN

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Abstract
Treatment for invasive/systemic candidiasis depends on a variety of factors, but will most likely involve intravenous or oral therapy with any one of polyenes, azoles, and echinocandins class of drugs. The polyene drug amphotericin B is a very common treatment, but is hindered by considerable kidney toxicity. An alternative polyene fungal agent is nystatin and its oral bioavailability is almost nil. Hence an attempt was made to increase its bioavailability by administering through skin after entrapping in drug carrier .i.e. Ultra deformable vesicles. Conventional and vesicular Nystatin gels (0.01%w/w) were prepared and in vitro, ex vivo and in vivo evaluation was carried out. The results showed enhanced bioavailability from vesicular nystatin gel than the conventional gel. Thus Ultradeformable vesicles of nystatin can be considered as a tool for enhancing the bioavailability of nystatin through skin and to produce systemic effect.

PCU 029

BIOSYNTHESIS OF NANOPARTICLES USING MICROBES- A REVIEW.

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Abstract
The biosynthesis of nanoparticles by microorganism is a green and eco-friendly technology. This review focuses on the use of consortium of diverse microorganisms belonging to both prokaryotes and eukaryotes for the synthesis of metallic nanoparticles viz. silver, gold, platinum, zirconium, palladium, iron, cadmium and metal oxides such as titanium oxide, zinc oxide, etc. These microorganisms include bacteria, actinomycetes, fungi and algae. The synthesis of nanoparticles may be intracellular or extracellular. The several workers have reported that NADH dependent nitrate reductase enzyme plays a vital role in the conversion of metallic ions to nanoparticles. The FTIR study reveals that diverse biomolecules viz. carboxyl group, primary and secondary amines, amide I, II, and III bands etc serve as a tool for bioreduction and capping agents there by offering stability to particles by preventing agglomeration and growth. The size and shape of the nanoparticles vary with the organism employed and conditions employed during the synthesis which included pH, temperature and substrate concentration. The microorganisms provide diverse environment for biosynthesis of nanoparticles. These particles are safe and eco-friendly with a lot of applications in medicine, agriculture, cosmetic industry, drug delivery and biochemical sensors. The challenges for redressal include optimal production and minimal time to obtain desired size and shape, to enhance the stability of nanoparticles and optimization of specific microorganisms for specific application.

PCU 030

SMART LENSES

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Abstract
Diabetes is one of the fastest growing medical conditions. The traditional method of lancing device for evaluation is disruptive and painful. The latest medical breakthrough –contact lenses that change color when glucose levels vary in the body. The new device is made by embedding nano particles into standard hydrogel. These react with glucose present in the tears. A chemical reaction then causes the lenses to shift their hues, altering the wearer to falling or spiking blood glucose levels. Hydrogel consists of photonic crystals actually made up of proprietary combination of boronic acid and other chemicals. The changes in spacing and array effectively alter how light passes through the material. Low glucose levels cause refraction of light to give red color and normal levels green color. It provides trends of continuous glucose level readings per each second. It is simple and painless technology that can replace the traditional lancing method.

PCU 031

NANOSUSPENSIONBOON TO SCIENCE TECHNOLOGY

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Abstract
Nanotechnology is a boon to the science field comprising of nanosuspensions, nanocapsules. etc, as various formulations. The solubility issue of many drugs belonging to Class II of BCS system has been a great concern since years and due to their poor solubility these drugs were restricted for their use in

various formulations. With the advent of nanotechnology, which basically follows the principle of reduction of particle size to submicron level the dissolution profile of many drugs have been altered. Nanosuspensions are defined as colloidal dispersions of drug particles in the vehicle, with particle size ranging from 1 – 1000 nm.Nanosuspension is prepared by reducing the particle size and maintaining a perfect crystalline state of the particles to stabilize the formulation, as the particle size is being reduced the surface area gets increased promoting better dissolution as stated by Noyes–Whitney equation and therefore increases bioavailability of Class II drugs or the drugs having poor solubility.the simple scale up process and the ability to alter the surface properties by the use of specific stabilizer has made their applications to a wide range. nanosuspensions are far simpler and easy to operate when compared to other conventional dosage forms. . Therefore it will always be interesting for the industrial people to formulate various drugs in nanosuspension form for treating out several diseases.

PCU 032

FORMULATION & EVALUATION OF HERBAL ANTI-DANDRUFF SHMPOO

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Abstract:
Dandruff is a common disorder affecting the scalp condition caused by yeast Pityrosporum. Dandruff cannot be completely eliminated but can only be managed and effectively controlled by a shampoo. A shampoo is a preparation containing surfactant (i.e. surface active materials) in suitable form –liquid, solid or powder-which when used under the specified condition will remove surface grease, dirt, and skin debris from the hair shaft and scalp without adversely affecting the user. Various anti-fungal agents are employed in hair care preparation for the treatment dandruff. These products show many side effects like loss of hair, increased scaling, itching, irritation, nausea, and headache. Hence an attempt was made to formulate herbal dandruff shampoo which is effective in terms of safety and treating the dandruff condition better than the chemical based anti-dandruff shampoo. Herbal anti-dandruff shampoos were formulated using herbal based ingredients like lemon grass oil, Neem oil, henna, Aloe Vera gel, other parameters like visual inspection, pH viscosity, percentage of solids contents, dirt dispersion, surface tension, foaming ability and foam stability, anti-fungal activity test using Pityrosporum Ovale strain. Formulation F8 exhibited good anti-fungal activity i.e. maximum zone of inhibition. Hence it was safely studies on animals, such as eye irritation test on skin sensitivity test. The F8 exhibited good safety without any irritation and sensitivity. Stability studies for a period of 3 months were conducted for F8 formulation and showed negligible changes in their physicochemical properties.

PCU 033

NEW NANOTECHNOLOGICAL INVENTION IMPROVES EFFECTIVENESS OF THE 'PENICILLIN OF CANCER'

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Abstract
Researchers at Argonne's Center for Nano-scale Materials created nano-sized bubbles, or "micelles," that contained two ingredients at their centers: magnetic nano-particles of iron oxide and cisplatin, a conventional chemotherapy drug also known as "the penicillin of cancer." They created nano-sized bubbles, or "micelles," that contained two ingredients at their centers: magnetic nano-particles of iron oxide and cisplatin, a conventional chemotherapy drug also known as "the penicillin of cancer." "When someone is given a dose of chemotherapy, typically much of the drug doesn't actually make it into the cancer cells. In addition, some cancer patients are sensitive to this drug due to impaired kidney

function," said oncologist Ezra Cohe. "This new method gives a way of delivering the dose of therapeutic cargo much more directly, which will enable us to have the same overall effect with a lower total dose, reducing the unpleasant and dangerous side effects of chemotherapy." In order to see the action of the nano-particles and cisplatin as the micelle collapsed, the researchers used the Hard X-Ray Nanoprobe. "Normally, it's difficult to see how cisplatin is delivered into organelles like the nucleus, but with this technology we can see simultaneously how the drug delivery happens, how the nano-particles interact with the cell's membrane and the cell's response," Like the membranes of cancer cells themselves, the micelles are made up of a polymer material whose outer surfaces are hydrophilic, which means they are attracted to water, while the inner parts are hydrophobic, repelling water. "In addition, the surface of micelles can be equipped with targeting molecules capable of recognizing malignancy, "Elena Rozhkova.

PCU 034

DENDRIMERS

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Abstract
Dendrimers are manmade, nanoscale compounds with unique properties that make them useful to the health and pharmaceutical industry as both enhancements to existing products and as entirely new products. Dendrimers are constructed by the successive addition of layers of branching groups. Each new layer is called a generation. The final generation incorporates the surface molecules that give the dendrimer the desired function for pharmaceutical, life science, chemical, electronic and materials application. Dendrimers are highly branched, star-shaped macromolecules with nanometer-scale dimensions. Dendrimers are defined by three components: a central core, an interior dendritic structure (the branches), and an exterior surface with functional surface groups. The varied combination of these components yields products of different shapes and sizes with shielded interior cores that are ideal for applications in both biological and materials sciences. While the attached surface groups affect the solubility and chelation ability, the varied cores impart unique properties to the cavity size, absorption capacity, and capture-release characteristics. Dendrimers fall under the broad heading of nanotechnology, which covers the manipulation of matter in the size range of 1-100 nanometers (one million nanometers equal one millimetre) to create compounds, structures and devices with novel, pre-determined properties

PCU035

INNOVATIONS IN NANOPHARMACEUTICAL RESEARCH

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Abstract
The use of nanotechnology in medicine and drug delivery is spread rapidly. Application of Nanoscience in designing innovative dosage form to bring in novel drug is the hot topic in research. Nanopharmaceuticals are being extensively researched and developed in drug delivery so as to effectively deliver insoluble drugs to tumor cells in cancer therapy. Nanomedicine is being adopted to reduce toxicity and side effects of majority of drugs. However, these also possess toxicity to certain level. Multitudes of substances are under investigation for preparation of nanopharmaceuticals for drug delivery including biological substances (Albumin, Gelatin, Phospholipids for Liposomes) and chemical substances (Polymers and Solid Metals). A few successful Nano Formulations include Doxil® (for multiple myeloma and ovarian cancer), Tricor and Triglide (for Hypercholesterolemia and

hypertriglyceridemia), Abraxane (for Metastatic breast cancer, non-small-cell lung cancer (IV). Research is being carried out on various nanodrugs like Doxorubicin, Rapamycin, Docetaxel, Paclitaxel, Abraxane etc., to improvise the quality of drug delivery and decrease toxicity and adverse drug reactions. A detailed study of Clinical Research of nanodrug Abraxane and Paclitaxel is discussed in here. The current Good Manufacturing Practice (cGMP) of nanopharmaceuticals is studied and revised as per the norms of Food and Drug Administration (FDA). This seminar provides an overview on Nanopharmaceuticals, their Evolution, Growth in Pharma Industry and Recent Research on Nano Drug Delivery Formulations.

PCU036

NEEDLE FREE INJECTIONS

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Abstract

Large numbers of therapies particularly are protein, gene, vaccine, based that cannot be delivered by oral routes for ex: insulin, growth hormones and biologics. Hence demand for novel drug delivary technologies system has triggred the invention of "needle free injections"in 1940's and 1950's, which are help full in easy delivery of some formulations for both liquid's and solids. A needleless hypodermic device includes a body carrying a compressed-gascartridge in one end and an ampule of fluid to be ejected at the opposite end, the ampule having the nozzle portion projecting beyond through the aperture. A cylinder in the body carries a tubular member and is spring biasedtoward the cartridge forpenetrating the cartridge and releasing the gas to drive the piston which, in turn, moves the plunger to exhaust the fluid. A trigger retains the cylinder in a cocked until time of use. The main rationale for its development is for better acceptability, patient convenince, less pain, no needle phobia, allows self administration, avoiding mistakes, eliminating needle-stick injuries, cross contamination, consequent dramatic social, psychological and economic consequences and is strongly preferred by the patients. Fore deals and drawbacks of needle-free injections and some marketed devices like Biojector 2000, Vitajet (insulin), cool click (saizen recombinant humangrowth hormone), Serojet, Inject, Biovalu's minijet technology.

PCU037

PHARMACEUTICAL PRODUCT PACKAGING

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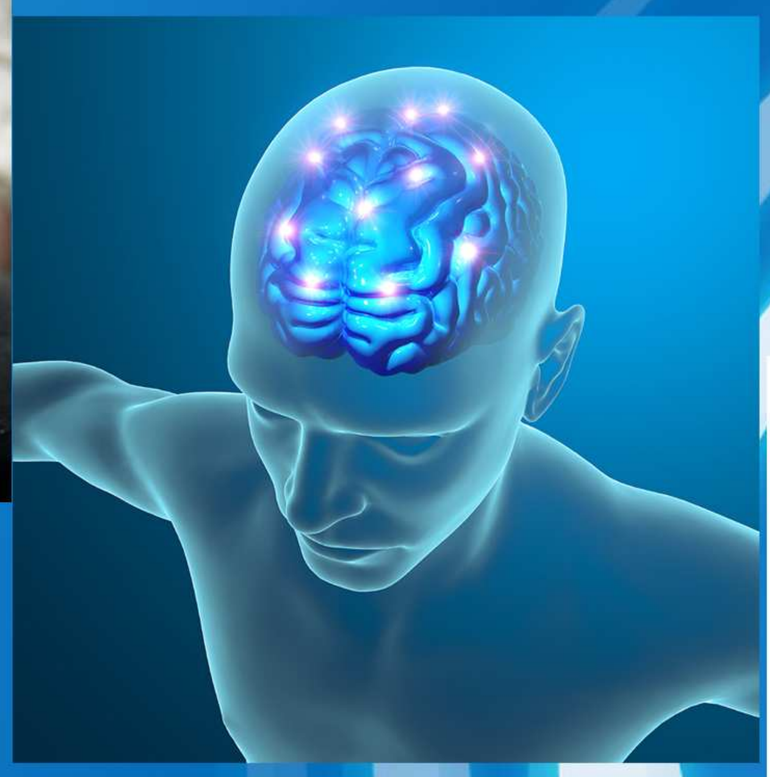
Abstract

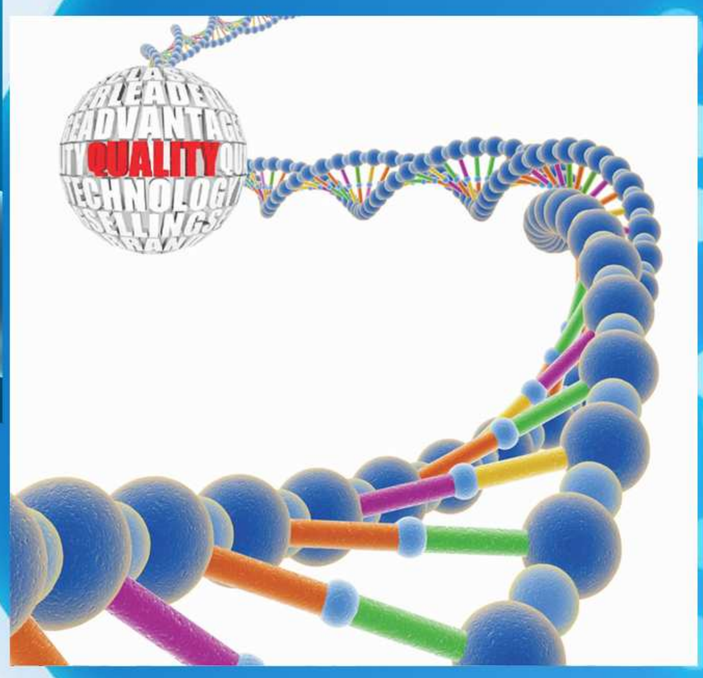
Pharmaceutical packaging plays an important role in the field of pharmacy in dispensing the desired product without any contamination and free from microbial growth. Packaging is a critical tool in the pharmaceutical industry for product delivery and regulatory compliance, Some common pharmaceutical packaging techniques include foil and heat sealing; polyester and olefin package printing; polyethylene and polypropylene printing; and flatbed die cutting. While selecting the packing material one must consider varies factors which includes child safety for potent drugs, must meet tamper resistant requirement must not react with the product ,must be eco- friendly etc., so, may innovative ideas are required to meet the requirements of the packing material which will be economical as well.

One Day Seminar on

"INNOVATIONS IN PHARMACEUTICAL RESEARCH- 2015" AND ORAL PRESENTATIONS- 1st August 2015

PHARMACOLOGY





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PCL 001

KLEPTOMANIA- CLINICAL CHARACTERISTICS AND TREATMENT

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Abstract
Kleptomania, a disabling impulse control disorder, is characterized by the repetitive and uncontrollable theft of items that are of little use to the afflicted person. Despite its relatively long history, kleptomania remains poorly understood to the general public, clinicians, and sufferers. This article reviews the literature for what is known about the clinical characteristics, family history, neurobiology, and treatment options for individuals with kleptomania. Kleptomania generally has its onset in late adolescence or early adulthood and appears to be more common among women. Lifetime psychiatric comorbidity is frequent, mainly with other impulse control (20-46%), substance use (23-50%) and mood disorders (45-100%). Individuals with kleptomania suffer significant impairment in their ability to function socially and occupationally. Kleptomania may respond to cognitive behavioral therapy and various pharmacotherapies (lithium, anti-epileptics, and opioid antagonists). Kleptomania is a disabling disorder that results in intense shame, as well as legal, social, family, and occupational problems. Large scale treatment studies are needed.

PCL 002

NUCLEAR PORE FREEZING WITH QUERCETIN; A NOVEL APPROACH FOR CANCER THERAPY

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Abstract
Malignant tumor or cancer, the disease involves abnormal cell growth and have a potential to spread or invade to other parts of body by a process of Metastasis. About 14.1 million new cases were reported every year and leads to 8.1 million deaths. The need for search of noval approaches to treat malignant cells is crucial to face cancer; one among them is nuclear pore freezing. Nuclear pore complex (NPC), a highly symmetrical supramolecular complex traverses the nuclear envelope (NE) of nucleus which not only houses genetic material but also regulates transport of macromolecules like mRNA and proteins. NPC have been almost entirely neglected so far, but recently through pioneer works reveals potential targets for drug therapy. The transport across the NPC is regulated by phenyl alanine-Glycin (FC) complex which is the important substrate for drug in present study. It was thought that NPC is responsible for transport of mRNA and translocation of proteins needed for new cell formation, if this NPC was clogged by flavanoids like quercetin there will be no exchange between the cell nucleocytoplasm due to covalent bonding between FC complex and Quercetin which eventually leads to cell death and prevents metastasis. Structural activity relation of quercetin also reveals the enormous potential for how we might be able to specifically control cell division and understand various cellular processes and interventions targeting NPC. This may add a new cellular mechanism of action to Quercetin apart from inhibition of translation of mRNA in protein synthesis.

PCL 003

NEUROACTIVE STEROIDS: ENDOGENOUS ROLE IN THE HUMAN BRAIN AND THERAPY FOR PSYCHIATRIC DISORDERS

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Abstract
In 1981 Dr. Etienne-Emile Baulieu and colleagues, discovered that the brain appeared to have the capacity to synthesize its own steroids in situ. These molecules are known as neurosteroids, since they can be synthesized de novo in the brain from cholesterol or from peripheral steroid precursors that cross the blood-brain barrier readily. Neurosteroids have been shown to affect neuronal excitability via their interaction with the ligand-gated ion channel family, such as the $GABA_A$ and $5\text{-}HT_3$ receptors, by acting genomically as well as nongenomically. They are classified as pregnane neurosteroids such as allopregnanolone and allotetrahydrodeoxycorticosterone, and androstane neurosteroids, such as androstanediol and etiocholanone. Neurosteroids regulate physiological functions of the central nervous system (CNS) and help in the neurodevelopmental functions relating to their neuroprotective effects in brain injury and possible therapeutic potential in brain lesions and other diseases of the nervous system (or) psychiatric disorders such as anxiety, epilepsy, depression, stress…etc.

PCL 004

IMMUNOTHERAPY IN TREATING EBOLA VIRUS

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Abstract
Immunotherapy involves the use of monoclonal antibodies that are monospecific antibodies that are the same because they are made by identical immune cells that are all clones of a unique parent cell, in contrast to polyclonal antibodies which are made from several different immune cells. Monoclonal antibodies have monovalent affinity, in that they bind to the same epitope. Given almost any substance, it is possible to produce monoclonal antibodies that specifically bind to that substance; they can then serve to detect or purify that substance. This has become an important tool in biochemistry, molecular biology and medicine.

This method of treatment has been previously used since years for the treatment of syphilis and certain strains of cancer. The drug is composed of three humanized monoclonal antibodies that are produced transgenically and subsequently grown in large numbers in the tobacco plant Nicotiana. The serum combines the best components of MB-003 (Mapp) and ZMAb (Defyrus/PHAC). The current process design includes placing the genes for the desired antibodies into two plant viruses to infect tobacco plant cells via the Agrobacterium (known for its ability to transfer DNA between itself and plants) intermediate step. The plant then creates antibodies that are subsequently extracted and purified. The process takes a couple weeks. The entire production cycle is believed to take a few months. This therapy for Ebola virus is discovered by the two most reputed pharmaceutical industry Mapp and another biotechnology based company Defyrus/PHAC with a serum named ZMapp. It is made of two components namely MB-003 (Mapp) and ZMAb (Defyrus/PHAC).A study published in November 2013; found that Ebola virus infected macaque monkeys survived after being given a therapy with a combination of 3 EBOV-GP-specific monoclonal antibodies (ZMAb), within 24 hours of infection. This therapy raised hopes many as when it was administered to two Americans who had been infected with Ebola. Both patients appeared to have had positive results.

PCL 005

SURVIVAL OF PATIENTS WITH SEVERE RENAL FAILURE AND MYELOMA

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Abstract
Myeloma is a clonal B-cell disease of slowly proliferating plasma cell accompanied by monoclonal protein production and lytic bone lesions. Whereas renal failure in which kidney fails to adequately filter waste products from blood. Renal failure with multiple myeloma is called 'Myeloma Kidney'associated with shortened survival. Renal failure was recognised within 2 months of diagnosis of myeloma in 75% of patients. Drug treatment for multiple myeloma includes chemotherapy with melphalan and prednisone and for chronic renal failure Aspirin and Acetaminophen. Melphalan chemically alters thrrough alkylation of the Dinucleotide nucleic acid nucleotide guanine and causes linkages between strands of Dinucleotide nucleic acid .This chemical alterations inhibits Dinucleotide nucleic acid synthesis and Ribo nucleic acid synthesis, functions necessary for cell survival. Used to treatmultiple myeloma, ovarian cancer, AL amyloidosis, and malignant melanoma. Melphalan is currently being used to treat ocular retinoblastoma,a pediatric solid tumor.

PCL 006

APTAMERS: A PROMISING LIGAND TARGETING TUMOR CELLS

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Abstract
Aptamers are single stranded oligonucleotides DNA or RNA having ability to bind to many target molecules inside the body such as cell surface proteins peptides and many organic and inorganic molecules. They are developed by very popular chemical process called as in vitro systematic evolution of ligands by exponential enrichment (SELEX) libraries. They can be tailored to execute a variety of functions based on the high specificity and high affinity to the target and ability to disrupt interaction between proteins and inactivate them and thus are helpful in the treatment of certain types of cancers and aids. It also inhibits chronic viral infections. Unlike many other drug molecules use of oligonucleotides like aptamers like therapeutic aids gives rise to specific action against the drug target. Chances of side effects are minimized. Using them untouched diseases can also be targeted. Proofs that aptamers can specifically inhibit bio-medically relevant proteins and modify cellular metabolism augur well for future drug development.

PCL 007

SYSTEMIC REVIEW OF EVOTAZ: A NEWLY APPROVED HIV-1 DRUG

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Abstract

The human immunodeficiency virus (HIV) is a lentivirus (a subgroup of retrovirus) that causes HIV infection and acquired immunodeficiency syndrome (AIDS).Human immunodeficiency virus is its high genetic variability. HIV can be divided into two major types, HIV-1 and HIV-2. HIV-1 is the most common and pathogenic strain of the virus. Many antiretrovirals are used in the treatment of HIV-1. But, recently USFDA approved the fixed dose combination of Atzinaivr(300mg) and Cobicistat(150mg) which is sold under the brand name "Evotaz". It was approved on 29th January 2015 by Bristol-Myers Squibb FDA based on comparative Phase III trial data with 692 participants. It is the only protease inhibitor boosted by Cobicstat with such a low virologic failure rate as low as 6%. Apart from these benefits Evotaz has very low side effects when compared to other HIV-1 drugs Aptivus and Crixivan. The tolerability profile of the fixed dose-combination of Evotaz is more effective to that of the two agents taken separately. None of the participants developed resistance to Protease inhibitors. The safety profiles in the two arms of the study were comparable. Apart from the benefits there are fewer side effects. It doesn't mean that the combinations have no effect but it has an improved efficacy when compared to the individual antiretrovirals used. Hence Evotaz increases the possibility of providing HIV suppression by combining reduced pill burden with a low rate of virologic failure and zero protease inhibitor mutations and Prezcobix is a combo pill for effective suppression of HIV-1 with less side effects.

PCL 008

THE TREATMENT OF METASTATIC NON SMALL CELL LUNG CANCER IN A NEW ERA OF PERSONALISED MEDICINE

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Abstract

Non Small Cell Lung Cancer (NSCLC) is a heterogeneous, complex and challenging disease to treat. It remains the leading cause of cancer-related death accounting for approximately 87% of cases worldwide. Systemic Chemotherapies have been used to treat metastatic NSCLC for decades. In recent years, personalized medicine has begun to bring new hope to people with lung cancer, especially Non Small Cell Lung Cancer. In the metastatic setting, the addition of the anti-vascular endothelial growth factor monoclonal antibody, bevacizumab, to chemotherapy improves overall survival. The oral Epidermal Growth Factor Receptor (EGFR) tyrosine kinase inhibitors, Gefitinib and Erlotinib, prolong progression-free survival in patients selected for the presence of an EGFR activating mutation. The monoclonal antibody to EGFR, Cetuximab, improves survival in patients with metastatic NSCLC, and the inhibitor of the echinoderm microtubule-associated protein-like 4-anaplastic lymphoma kinase (EML4-ALK) fusion protein, Crizotinib, has resulted in an unprecedented overall survival advantage in patients harboring the EML4-ALK translocation. The realm of personalized lung cancer therapy also includes the study of chemotherapy selected on the basis of the pharmacogenetic profile of a patient's tumor. Recent advances in molecular genomics have revolutionized cancer management and, specifically, epidermal growth factor receptor (EGFR) mutation has become a potent biomarker for lung cancer, which predicts tumor response and prolonged duration of disease control by EGFR tyrosine kinase inhibitors (TKI).

PCL 009

HUMAN HEART ON A CHIP REPLACES ANIMALS IN DRUG TESTING OF HEART MEDICATION

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Abstract

When using animals to test human heart medication, aren't merely ethical -- such concerns about lab animals rarely enter scientific discussions. Rather, there are some serious physiological problems -- namely, that drugs designed for humans will not have the same effect on a species that is biologically different from a human. Such differences often result in inefficient and costly experiments that do not provide accurate answers about the toxicity of a drug in humans. It takes about $5 billion on average to develop a drug, and 60 percent of that figure comes from upfront costs in the research and development phase. Using a well-designed model of a human organ could significantly cut the cost and time of bringing a new drug to market. Human heart chips were created using heart muscle grown in a lab from adult human induced pluripotent stem cells -- stem cells that can be coaxed to grow into many other types of cell. Then carefully designed the structure to be similar to the geometry and spacing of connective tissue fiber in a living human heart. On combining the genetic background of human cells with appropriate biophysical tissue architecture and "tissue-like" drug gradients would recapitulate a minimal organoid of the human myocardium sufficiently to allow accurate prediction of the cardiotoxicity of drugs. The tissue remains functional for several weeks, allowing each cell matrix to be reused to test multiple drugs. It is possible, patient's own cells to test an individual's responses to various drugs, allowing treatments to be tailored. It could also be modified to model human genetic diseases.

PCL 010

INNOVATIONS IN THE TREATMENT OF DIABETES MELLITUS

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Abstract

Diabetes mellitus is widespread disease prevalence and incidence of which increases worldwide. The introduction of insulin therapy represented a major breakthrough in type 1 diabetes; however, frequent hyper- and hypoglycemia seriously affects the quality of life of these patients. New therapeutic approaches, such as whole pancreas transplant or pancreatic islet transplant, stem cell, gene therapy and islets encapsulation. Regarding type 2 diabetes, therapy has been based on drugs that stimulate insulin secretion (sulphonylureas and rapid-acting secretagogues), reduce hepatic glucose production (biguanides), delay digestion and absorption of intestinal carbohydrate(alpha-glucosidase inhibitors) or improve insulin action(thiazolidinediones).This review is also focused on the newer therapeutically approaches such as incretin-based therapies, bariatric surgery, stem cells and other emerging therapies that promise to further extend the options available. Gene-based therapies are among the most promising emerging alternatives to conventional treatments. Some of these therapies rely on genetic modification of non-differentiated cells to express pancreatic endocrine developmental factors, promoting differentiation of non-endocrine cells into β-cells, enabling synthesis and secretion of insulin in a glucose-regulated manner. Alternative therapies based on gene silencing using vector systems to deliver interference RNA to cells (i.e. against VEGF in diabetic retinopathy) are also a promising therapeutic option for the treatment of several diabetic complications. In conclusion, treatment of diabetes faces now a new era that is characterized by a variety of innovative therapeutic approaches that will improve quality-life and allow personalized therapy-planning in the near future.

PCL 011

HORMONE OF DARKNESS PAVING LIGHTS FOR CANCER TREATMENT

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Abstract

Melatonin [n-acetyl-5-methoxytryptamine] is a hormone which is secreted by pineal gland. It is also known as "hormone of darkness" as it is secreted when it is dark. It has been found to be involved in numerous aspects of biological and physiologic regulation. It regulates sleeping and waking cycle (blind), circadian rhythm. It acts as soporific agent chronohypnotic, chronobiotic, anticoagulant and immune suppressant. Numerous studies have established melatonin as one of the most effective anti-cancer treatments in existence. It inhibits cancer cell growth and proliferation; it destroys cancer cells, stops angiogenesis, and prevents harmful forms of estrogen from stimulating cancer cell growth especially in breast, endometrial, ovarian and uterine cancers. Melatonin functions to destroy cancer in multiple ways. First, because it is toxic to cancer cells, it induces apoptosis. It also slows tumor growth by inhibiting epidermal growth factor receptors on cancer cells. Melatonin also stimulates the immune system and increases the cancer-killing activity of macrophages, monocytes, natural killer cells, T-helper cells and eosinophils, all of which are involved in cancer cell destruction. Finally, as an antioxidant, melatonin reduces inflammation, a condition that enables cancer's survival, and it scavenges free radicals so that they don't damage normal cells and make them vulnerable to further genetic mutations. It is therefore an effective natural treatment that not only helps to prevent cancer, but which also plays an integral role in healing the body from it. The characteristics of melatonin's oncostatic actions, comprising different aspects of tumor biology as well as the physiological doses at which the effect is accomplished, give special value to these findings and encourage clinical studies on the possible therapeutic value of melatonin in cancer treatment.

PCL 012

POLYCYSTIC OVARIAN SYNDROME (PCOS)

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Abstract

Polycystic ovary syndrome (PCOS) is of clinical and public health importance as it is very common, affecting up to one in five women of reproductive age. It has significant and diverse clinical implications including reproductive (infertility, hyperandrogenism, hirsutism), metabolic (insulin resistance, impaired glucose tolerance, type 2 diabetes mellitus, adverse cardiovascular risk profiles) and psychological features (increased anxiety, depression and worsened quality of life). Importantly, PCOS has unique interactions with the ever increasing obesity prevalence worldwide as obesity-induced insulin resistance significantly exacerbates all the features of PCOS. Furthermore, it has clinical implications across the lifespan and is relevant to related family members with an increased risk for metabolic conditions reported in first-degree relatives. Therapy should focus on both the short and long-term reproductive, metabolic and psychological features. Given the aetiological role of insulin resistance and the impact of obesity on both hyperinsulinaemia and hyperandrogenism, multidisciplinary lifestyle improvement aimed at normalizing insulin resistance, improving androgen status and aiding weight management is recognised as a crucial initial treatment strategy. Modest weight loss of 5% to 10% of initial body weight has been demonstrated to improve many of the features of PCOS. Management should focus on support, education, addressing psychological factors and strongly emphasizing healthy lifestyle with targeted medical therapy as required. Monitoring and management of long-term metabolic complications is also an important part of routine clinical care.

PCL 013

IBANDRONATE PREVENTS SKELETAL-RELATED EVENTS, REDUCES BONE PAIN IN MULTIPLE MYELOMA

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Abstract

Patients with multiple myeloma (MM) or metastatic bone disease (MBD) experienced significantly lower incidence of skeletal-related events (SREs) and bone pain with ibandronate compared to placebo, a systematic review and meta-analysis has shown. To measure the incidence of SREs and change in bone pain scores, researchers evaluated randomized controlled trials (RCTs) that compared ibandronate with placebo or zoledronate in the treatment of MM or MBD. The meta-analysis included 10 RCTs involving 3,474 patients. Secondary outcomes measured were the occurrence of diarrhoea, nausea, renal toxicity, jaw osteonecrosis and fatigue. The use of ibandronate (6 mg intravenously every 3-4 weeks or 50 mg orally every day) was associated with a significantly lower risk of SREs compared to placebo (risk ratio (RR) 0.80, 95% Cl, 0.71 to 0.90; p=0.002). At 96 weeks, ibandronate showed a significant reduction in bone pain from baseline compared to placebo (weighted mean difference -0.41, 95% Cl, -0.56 to -0.27; p<0.001). The incidence of SREs was similar between ibandronate and zoledronate (RR 1.02, 95% Cl, 0.82 to 1.26; p=0.87).

The incidence of diarrhoea, nausea and renal toxicity was similar between ibandronate and placebo. Similarly, ibandronate and zoledronate showed similar incidence of nausea, jaw osteonecrosis and fatigue.

PCL 014

NANOROBOTS IN BLOOD CIRCULATION

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Abstract

The nanorobot detects the cause of your fever, travels to the appropriate system and provides a dose of medication directly to the infected area. Surprisingly, we're not that far off from seeing devices like this actually used in medical procedures. They're called nanorobots and engineering teams around the world are working to design robots that will eventually be used to treat everything from hemophilia to cancer. Properly realized, nanorobots will be able to treat a host of diseases and conditions. While their size means they can only carry very small payloads of medicine or equipment, many doctors and engineers believe the precise application of these tools will be more effective than more traditional methods. Nanorobots can be detected by ultrasonic rays, X-rays, and MRI. Nanorobots could get power directly from the bloodstream. It uses small appendages to grip and crawl through blood vessels. The scientists manipulate the arms by creating magnetic fields outside the patient's body. Future nanorobots will be so small you'll only be able to see them with the help of a microscope. The two biggest challenges and concerns scientists have regarding these small tools are making them effective and making it safe in nanorobots. In the future, nanorobots could revolutionize medicine. Doctors could treat everything from heart disease to cancer using tiny robots the size of bacteria, a scale much smaller than today's robots. Robots might work alone or in teams to eradicate disease and treat other conditions.

PCL 015

CERVICAL CANCER: A PREVENTABLE DEATH.

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Abstract

Cervical cancer kills 260,000 women annually and nearly 85% of these death occurs in developing nations where it is a leading cause of cancer death in women millions of women worldwide never undergo cervical cancer testing and die as a result of a very preventable death despite the availability of low cost and relatively simple technique for cervical cancer early detection and treatment absence of screening and for follow up treatment is one of the main reason for cervical cancer mortality so high as in developing countries where women present with advanced cases that are less responsible to treatment .A number of barriers have been identified to account for this high burden of cervical cancer worldwide these includes poverty, ignorance, lack of health care and access and beliefs in local myths, fear of using western treatment etc. Our work will focus on the preventable measures for cervical cancer so as to bring a awareness to all the women.

PCL 016

SCREENING OF ANTI- ULCER ACTIVITY OF ALPRAZOLAM IN EXPERIMENTALLY INDUCED ULCER MODELS IN RATS

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Abstract

Introduction: Alprazolam is a derivative that belongs to a group of drugs called benzodiazepines. Benzodiazepines are mainly used as anxiolytic, sedative, hypnotics and have a high therapeutic index. They inhibit vagal mediated acid and pepsinogen secretion in stomach and so alprazolam may also be used for the treatment of gastric ulcers. This anti- ulcer activity of alprazolam is determined in the present study. To evaluate the anti- ulcer activity of a benzodiazepine derivative alprazolam with maximum therapeutic benefit and minimum side effects. Wistor albino rats (150-200g) were divided into four groups each consisting of 6 animals and induced with gastric ulcers by oral administration of 200mg/kg aspirin in 0.5%W/V CMC and 200mg/kg ethanol in 0.5%W/V CMC for 3 days individually. Anti-ulcer activity of alprazolam (0.5mg/kg and 1mg/kg orally) was observed in combination with aspirin (200mg/kg in 0.5%W/V CMC orally) or ethanol (1ml/100g body weight orally). Ranitidine was used as a standard drug for the comparison of anti- ulcer activity of alprazolam. The stomach of the rats was examined for gastric ulcer, ulcer index, free and total acidity. Alprazolam at doses of 0.5mg/kg and 1mg/kg body weight significantly reduced volume of gastric juice, free and total acidity and ulcer index and raised the gastric p^H in both aspirin and ethanol induced ulcers. Among the two doses of alprazolam 1mg/kg showed result very close to standard drug ranitidine which is statistically more significant than alprazolam 0.5mg/kg dose in both aspirin and ethanol induced ulcers. On the basis of the present study and of available reports, it may be concluded that the anti- ulcer activity of benzodiazepine derivative alprazolam could be mainly due to combination of sedative, anxiolytic and antisecretory actions.

PCL 017

ACTINIC KERATOSIS

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Abstract
Actinic keratoses are a skin disease caused by long-term sun exposure, and their lesions have the potential to develop into squamous cell carcinoma. Treatments for actinic keratoses are sought for cosmetic reasons, for the relief of associated symptoms, or for the prevention of skin cancer development. Detectable lesions are often associated with alteration of the surrounding skin (field) where subclinical lesions might be present. The interventions available for the treatment of actinic keratoses include individual lesion-based (e.g. cryotherapy) or field-directed (e.g. topical) treatments. These might vary in terms of efficacy, safety, and cosmetic outcomes. Actinic keratoses ("AKs") most commonly present as a white, scaly plaque of variable thickness with surrounding redness; they are most notable for having a sandpaper-like texture when felt with a gloved hand.Skin nearby the lesion often shows evidence of solar damage characterized by notable pigmentary alterations, being yellow or pale in color with areas of hyperpigmentation; deep wrinkles, coarse texture, purpura and ecchymosed, dry skin, and scattered telangiectasias are also characteristic. Photoaging leads to an accumulation of oncogenic changes, resulting in a proliferation of mutated keratinocytes that can manifest as AKs or other neoplastic growths. With years of sun damage, it is possible to develop multiple AKs in a single area on the skin. The lesions are usually asymptomatic, but can be tender, itch, bleed, or produce a stinging or burning sensation. AKs are typically graded in accordance with their clinical presentation: Grade I (easily visible, slightly palpable), Grade II (easily visible, palpable), and Grade III (frankly visible and hyperkeratotic).

PCL 018

TAURINE - A NATURAL MAGIC BULLET

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Abstract
ATaurine (2-Aminoethane Sulphonic Acid) is one of the most important amino acid in mammals. It demonstrates multiple cellular functions including cell volume regulation, prevention of cell death, maintaining the structural integrity of the membrane, in regulating calcium transport, as an osmolyte, as a neuromodulator, neuroprotectant and also as a neurotransmitter. Because of its many functional properties and its functional significance in cell developments, nutrition and survival Taurine is undoubtedly one of the most essential substance in the body. It is found mostly in brain, retina muscle tissue and other organs throughout the body. It is also present in all occular tissues especially vitreous, lens, cornea, iris and ciliary body. Taurine deficiency can lead to cardiomyopathy, renal dysfunction, developmental abnormalities and severe damage to retinal neurons. In retina it is important for photoreceptor development and acts as a cytoprotectant against stress related neuronal damage and other pathological conditions. Taurine exerts its neuroprotective function against the glutamate induced excite-toxicity by reducing glutamate-induced increase of intracellular calcium levels by shifting the ratio of bcl-2 and Bacl ratio in favour cell survival and by decreasing endoplasm reticulum stress. It is also found that Taurine is useful in the treatment of CHF; which improves heart failure because of decreased blood pressure and it calms sympathetic nervous system which responds to stress. Animal studies suggest that Taurine may play a therapeutic role in management of epilepsy and diabetes
Keywords: Taurine, Neuroprotectant, Neuromodulator, Neurotransmitter, Cardiomyopathy

PCL 019

REVIEW ON COMPARING THE LONG-TERM COST-EFFECTIVENESS OF REPAGLINIDE PLUS METFORMIN VERSUS NATEGLINIDE PLUS METFORMIN IN TYPE 2 DIABETES PATIENTS WITH INADEQUATE GLYCAEMIC CONTROL

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Abstract

The cost-effectiveness of repaglinide/metformin combination therapy versus nateglinide/metformin for treatment of individuals with type 2 diabetes with an inadequate response to sulphonylurea, metformin, or fixed dose glyburide/metformin.The Diabetes Model was used to simulate long-term outcomes for a cohort of individuals with type 2 diabetes treated with either repaglinide/metformin or nateglinide/metformin. HbA1c changes for each regimen were taken from a comparative study. At the end of the study, changes in HbA1c from baseline were -1.28% points and -0.67% points for repaglinide/metformin and nateglinide/metformin, respectively. Median final doses were 5.0 mg/day for repaglinide, 360 mg/day for nateglinide and 2000 mg/day metformin in each treatment arm. Costs were calculated as the annual costs for drugs plus costs of complications (US Medicare perspective) over a 30-year period. Life expectancy (LE) and quality-adjusted life expectancy (QALE) were calculated. Outcomes and costs were discounted at 3% annually.With repaglinide/metformin, improved glycaemia control led to projected decreases in complication rates, improvement of LE and QALE by 0.15 and 0.14 years respectively, and total cost savings of 3,662 dollars/person over the 30-year period. Repaglinide/metformin had a 96% probability that the incremental costs per quality-adjusted life year gained would be 20,000 dollars or less, and a 66% probability that repaglinide/metformin would be cost-saving compared to nateglinide/metformin. Sensitivity analyses supported the validity and reliability of the results.In the health economic context, repaglinide/metformin combination was dominant to nateglinide/metformin. The Diabetes Model is a tool to help third-party reimbursement payers identify treatments for type 2 diabetes that are good value for money.

PCL 020

NEUROPHARMACOLOGICAL EVALUATION OF "BERBERINE" ON CHRONIC UNPREDICTABLE MILD STRESS MODEL OF DEPRESSION: BEHEVIORAL AND BIOCHEMICAL EVIDENCES.

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Abstract

Involvement of oxidative stress play a major role for the development of stress induced depression. Excessive Reactive oxygen species (ROS) production can cause oxidative damage to macromolecules including lipids, proteins, and DNA, culminating in neuronal dysfunction and depression. Berberine, an isoquinoline alkaloid of the protoberberine type found in an array of plants, has a wide spectrum of biological and pharmacological activities like antioxidant, anti-inflammatory, antitumor, cardioprotective, antidepressant and Neuroprotective activity. However till date no studies have been reported on protective effect of Berberine on chronic unpredictable mild stress model of depression in mice. The aim of this study was to evaluate the effect of Berberine on chronic stress induced changes in behavioural and brain oxidative stress parameter in mice. Animals are acclimatized for a period of 1 week and they were trained to consume 1% (w/v) sucrose solution before the start of chronic unpredictable mild stress (CUMS) protocol. Three days later baseline sucrose preference test was performed. Later they were randomly divided into five groups (n=6): Group I- served as normal control received vehicle, Group II- served as disease control received vehicle+CUMS. Group III & IV received

Berberine (10&20 mg/kg, p.o respectively) +CUMS. Group V received fluoxetine HCL (20mg/kg p.o) +CUMS respectively for two weeks. At the end of the treatment period all the animals were subjected to Forced swim test and Sucrose preference test. On 15th day all the animals were sacrificed under euthanasia and the brain was excised for Biochemical estimations. Induction of CUMS significantly ($p<0.05$) increased duration of immobility and decreased Sucrose intake, by concurrent increase ($p<0.001$) in MDA, a by-product of lipid peroxidation and significant ($p<0.001$) decrease of GSH when compared to normal control. Treatment with Berberine (10&20 mg/kg) significantly ($p<0.001$) decreased the duration of immobility when compared to disease control group and these changes were more pronounced than normal value in dose dependent manner. Similarly treatment with berberine significantly increased the sucrose intake and the effect was in dose dependent manner when compared to disease control. On the other hand there was significant restoration of altered levels of MDA and GSH observed by treatment with berberine. In conclusion present study suggests that treatment with Beberine has shown protective effect on chronic unpredictable mild stress-induced depression and this may be due its neuroprotective and antioxidant properties.

PCL 021

CIRCADIAN RHYTHM

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Abstract
Circadian rhythm is a biological process that displays an endogenous, oscillation of about 24 hours rhythms are driven by a circadian clock, located in the suprachiasmatic nucleus of the hypothalamus shown to promote alertness during the day. Circadian rhythms are widely observed in plants, animals, fungi, and cyanobacteria. Sleep disorders arise when there is a misalignment between the timing of the endogenous circadian rhythms and the external environment. The primary synchronizing agents of the circadian system are light and melatonin. Exposure to bright light and administration of melatonin is often used in the treatment of circadian rhythm sleep disorders. Such as: delayed sleep phase, advanced sleep phase, irregular sleep wake, jet lag and shift work It is important to consider circadian rhythms in pharmacokinetics and cell responses to therapy in order to design proper protocols for drug administration. Experiments in animals and in humans have shown that all organisms are organised according to circadian rhythms these cycles influence different physiological functions. Pharmacokinetics of a drug can be modified according to the time of drug administration. Examples are anticancer, cardiovascular, anti-ulcer, allergic rhinitis, peptic ulcer, asthma, hypertension, arthritis, diabetes, drugs absorption gets influenced. Our body doesn't respond to medications in the same way at different times of the day so Chronotherapy: advocates syncing your medication regimen with your circadian rhythm to maximize effectiveness and minimize side effects

PCL 022

IMPACT OF BIOFILIMS ON MEDICAL DEVICES

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Abstract
Microorganisms universally attach to surfaces and produce extracellular polysaccharides, resulting in the formation of a biofilm. Biofilms pose a serious problem for public health because of the increased resistance of biofilm-associated organisms to exhibit dramatically decreased susceptibility to antimicrobial agents. This susceptibility may be intrinsic or acquired and the potential for these organisms to cause infections in patients with indwelling medical devices. In nature, microorganisms exist primarily by attaching to and growing upon living and in animate surfaces. The common feature

of this attached growth state is that the cells develop a biofilm, polymers that facilitate attachment and matrix formation, resulting in an alteration in the phenotype of the organisms with respect to growth rate and gene transcription. Many bloodstream infections and urinary tract infections are associated with indwelling medical devices and, therefore, (in most cases) biofilm associated. Partial listings of medical devices have been shown to develop biofilms. Evidence of the occurrence of biofilms on medical devices has come from studies in which the devices either were examined upon removal from the patients or were tested in animal or laboratory systems .Impact of biofilims on various medical devices will be discussed in detail in this presentation.

PCL 023

IMMUNOTHERAPY: FUTURE TREMENDOUS POTENTIAL FOR CANCER TREATMENT

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Abstract
Immunotherapy is the treatment of disease by inducing or enhancing or suppressing an immune response. It is designed to elicit or amplify an immune response. Because of the immune system's unique properties, these therapies may hold greater potential than current treatment approaches to fight cancer with fewer side effects. Healthy immune systems work by detecting antigens, the by-products of bacteria, viruses and other pathogens. Once these antigens are detected, the immune system produces antibodies to fight off and destroy the disease. Unfortunately, cancer has a way of evading the immune system. But with this form of immunotherapy, the researchers were able to use the genetically altered T cells to spot cancer and avoid evasim. Cell based immune therapies are proven to be effective for some cancers. Immune effector cells such as lymphocytes, macrophages, dendritic cells, natural killer cells etc. west together to defend the body against cancer by targeting abnormal antigens expressed on the surface of tumor due to mutation. It is committed for publishing high quality, innovative research that is focused on the entire range of preclinical, transitional and clinical cancer therapeutics. Specific areas of interest include preclinical and transitional research in development of novel small molecules and targeted therapies, mechanisms of drug sensitivity, mechanisms of cellular drug resistance, biomarkers of response, novel experimental model systems and technologies relating to cancer therapeutics, pharmacogenomics etc. and novel approaches to radiation therapy either alone or in combination with chemotherapy for cancer.

PCL 024

NUTRIGENOMICS

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Abstract
Nutrigenomics is a branch of nutritional genomics and is the study of the effects of foods and food constituents on gene expression. This means that Nutrigenomics is research focusing on identifying and understanding molecular-level interaction between nutrients and other dietary bioactives with the genome. Nutrigenomics has also been described by the influence of genetic variation on nutrition,by correlating gene expression or SNP's with a nutrients absorption,metabolism,elimination or biological effects. By doing so, nutrigenomics aims to develop rational means to optimise nutrition with respect to the subject's genotype.

PCL 025

SCAFFOLDING TECHNOLOGY IN THE FIELD OF BONE TISSUE ENGINEERING

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Abstract

The developing field of tissue engineering, more specifically the field of bone and cartilage aims to regenerate damaged tissues by combining cells from the body with highly porous scaffolds, which act as templates for tissue regeneration and to guide the growth of new tissue. To restore function and to regenerate damaged tissue, a scaffold is necessary that acts as a temporary matrix for cell proliferation and extracellular matrix deposition with subsequent ingrowths until the tissues are completely restored or regenerated.

A number of biodegradable and bioresorbable scaffold designs have been experimentally and or clinically studied.

A scaffold should have the following characteristics:

i. Three-dimensional and highly porous
ii. Biocompatible and bioresorbable
iii. Suitable surface chemistry
Iv. Mechanical properties to match those of the tissues at the site of implantation.

Various fabrication techniques have been designed to process bio degradable materials into 3-D porous scaffolds that include fiber bonding, particulate leaching, solvent lasting etc.

Therefore, application of scaffolding technology has opened a new realm in the field of bone tissue engineering, thus saving countless number of lives.

PCL 026

INNOVATIONS IN INDUSTRIAL MICROBIOLOGY

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Abstract

Industrial microbiology has achieved spectacular new growth and interest in the recent years, mainly as a result of global interest in biofeuls. This Presentation reviews the drivers for this growth spurt. In India, the interest has mainly derived from the desire for energy independence, and biofeuls production has benefited from a wide range of policy support mechanisms, as well as massive public spending. In Europe there has been more support in maintaining a competitive chemical Industry. Over 70 countries now have Bioenergy Targets. The drivers vary from stimulation of rural environment, to concerns over climate change, to fossil fuel price volatility. It is also clear that Asia will have a major role in future development of Industrial Microbiology. Industrial Biotechnology cannot simply grow by developing technology for commercial scale industrial production. Now is a time unprecedented in the life sciences and Industrial Biotechnology benefits from advances in a range of core technologies in molecular Biology, especially throughout genomics. The approach is being used to investigate microbial life in extreme environments such as deep oceans. Other technologies that can be used to modify and improve genes and enzymes are metabolic engineering and directed evolution. All of these technologies seem to come together in the new discipline of synthetic biology, which although already a billion dollar business, is in its infancy. Synthetic biology offers the prospect of creating synthetic life forms and enzymes that either make new materials more efficient or can create completely new products in a single organism that were previously not possible.

PCL 027

DRUG PRODUCTS PRODUCED BY ASEPTIC FILLING PROCESS

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Abstract:
Ideally, injectable drugs are sterilized in their final containers by a foolproof method like autoclaving. This is not possible for biological like monoclonal antibodies (mAbs), and Vaccines so they must be manufactured aseptically, sterilized by filtration and then filled into sterile vials or ampoules. The final filling procedure is the most critical aseptic process and should be done in a very clean environment because these products are prone to contamination by bacteria, fungi and Viruses. Microbial contaminations have a huge impact on biological product manufacture as they introduce product variability and can cause loss of potency due to degradation or modification of product by microbial enzymes, changes in impurity profiles, and an increase in the levels of bacterial endotoxins. In addition, the investigations of microbial contaminations can result in lengthy shutdown periods and delays in manufacturing operations that in turn, may sometimes result in shortages of essential drug products hence automatic machines, controlled environments are used for large production processes and eliminate the risk of contamination associated with manual processes. vials are washed and depyroginated in tunnel and closures are washed sterilized, and the filling has to be carried out in a very strictly controlled environment, because the vials are open throughout the process and are only stoppered and sealed in a second step.

PCL 028

PHARMACOLOGICAL ASPECTS OF LENVATINIB: A BRIEF REVIEW

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Abstract
Lenvatinib, discovered and developed by Eisai, is an oral multiple receptor tyrosine kinase (RTK) inhibitor with a novel binding mode that selectively inhibits the kinase activities of vascular endothelial growth factor (VEGF) receptors (VEGFR1 (FLT1), VEGFR2 (KDR) and VEGFR3 (FLT4)), in addition to other proangiogenic and oncogenic pathway-related RTKs (including fibroblast growth factor (FGF) receptors FGFR1, 2, 3 and 4; the platelet-derived growth factor (PDGF) receptor PDGFRα; KIT; and RET) involved in tumor proliferation.It was approved on February 2015 by US FDA manufactured by Eisai Co. In particular, the agents simultaneously inhibit VEGFR, FGFR and also RET which are especially involved in tumor angiogenesis and proliferation of thyroid cancer. Lenvatinib showed promising results in a phase I clinical trial in 2006 and is being tested in several phase II trials as of October 2011, for example against hepatocellular carcinoma. After a phase II trial testing the treatment of thyroid cancer was completed with modestly encouraging results, the manufacturer launched a phase III trial in March 2011.The FDA has granted approval to lenvatinib (Lenvima) as a treatment for patients with progressive, radioactive iodine (RAI)-refractory differentiated thyroid cancer (DTC).The current study is about brief review about the pharmacology and clinical study of the drug.

PCL 029

NEW STRATEGIES IN THE TREATMENT OF CEREBRAL VASOSPASM FOLLOWING ANEURYSMAL SUBARACHNOID HAEMORRHAGE.

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Abstract

Cerebral vasospasm is a condition of morphologic narrowing of cerebral arteries that is most commonly seen following aneurysmal subarachnoid haemorrhage (SAH) , but may also follow other intracranial hemorrhages, like intraventricular haemorrhage from arteriovenous malformations (AVM). In large part, this poor prognosis is due to the significant death and disability associated with vasospasm. Approximately 50% of patients with symptomatic vasospasm will develop infarctions, and 15–20% will develop a disabling stroke or die of ischaemia. Therapies directed at the treatment of cerebral vasospasm vary widely in both the intended target and the effect. These therapies can be broadly categorised into four groups according to the mechanism by which they are designed to reduce vasospasm, although no treatment has been found to be universally efficacious. These groups include therapies that prevent arterial narrowing, reverse arterial narrowing, enhance cerebral perfusion and protect against and rescue from cerebral ischaemia. In order to treat vasospasm aggressively one must first treat the ruptured aneurysm itself, ideally within the first two days after aneurysmal rupture.4 Once the aneurysm is secured, the treating physician has the complete armamentarium available for the treatment of vasospasm. Aneurysmal SAH is a potentially devastating condition with significant associated morbidity and mortality. Significant advances – with both open surgical techniques and endovascular techniques – have allowed the vast majority of intracerebral aneurysms to be treated effectively. Despite improved treatment for ruptured aneurysms, a significant proportion of patients who experience aneurysmal rupture will suffer additional injury secondary to cerebral vasospasm regardless of the effectiveness with which the aneurysm is treated.

PCL 030

REVIEW ON TYPE 2 DIABETES MELLITUS DRUGS NEW APPROACHES

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Abstract

Insulin resistance in liver and muscle tissue, together with beta-cell secretory defects, leads to overt type 2 diabetes mellitus. Repaglinide, fast-acting insulin secretagogue with a short duration of action, reduces postprandial hyperglycaemia when taken shortly before meals. Other novel antidiabetic agents are currently under development, including pramlintide an amylin analogue and glucagon-like peptide. Pramlintide slows gastric emptying and delays glucose absorption, and glucagon-like peptide is potent endogenous stimulator of glucose-induced insulin release. Recent advances in type 2 diabetes therapy have seen development of thiazolidinediones which improve insulin resistance in patients whose diabetes is poorly controlled by diet and exercise therapy. Thiazolidinediones bind to peroxisome proliferator-activated receptor-gamma and act through process involving gene regulation at transcriptional level. Troglitazone, first approved drug in class, has been shown to decrease plasma glucose levels as monotherapy but is more effective in combination with sulphonylureas, metformin, or insulin .Troglitazone has been associated with severe idiosyncratic hepatocellular injury. There have been more than 150 spontaneous reports of serious hepatic events, including at least 25 instances in which patients died or required liver transplant. Rosiglitazone, potent thiazolidinedione, is still in clinical development, as is pioglitazone. Rosiglitazone has been shown to have no reported cases of

idiosyncratic drug reactions leading to jaundice and no clinically significant drug interactions with cytochrome P450 3A4-metabolized drugs such as nifedipine Combination therapy is increasingly important in type 2 diabetes management following failure of monotherapy because complementary mechanisms of action of different classes of oral agents demonstrate synergistic effects when used in combination.

PCL 031

TREATMENTS OF SCHIZOPHRENIA WITH ATYPICAL ANTIPSYCHOTICS: A CRITICAL REVIEW.

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Abstract

Schizophrenia is a typical mental disorder often characterized by abnormal social behavior and failure to recognize what is real. Common symptoms include false beliefs, unclear or confused thinking, auditory hallucinations, reduced social engagement and emotional expression, and lack of motivation. The treatment of schizophrenia has evolved over the past half century primarily in the context of antipsychotic drug development. Although there has been significant progress resulting in the availability and use of numerous medications, these reflect three basic classes of medications (conventional (typical), atypical and dopamine partial agonist antipsychotics) all of which, despite working by varying mechanisms of actions, act principally on dopamine systems. Many of the second-generation (atypical and dopamine partial agonist) antipsychotics are believed to offer advantages over first-generation agents or traditional antipsychotics in the treatment for schizophrenia and leads to lowering the risk of Extra pyramidal symptoms. Moreover, the efficacy of antipsychotic drugs is limited prompting the clinical use of adjunctive pharmacy to augment the effects of treatment. The current study is about the review on the pharmacological actions of atypical antipsychotics in neutralizing the negative symptoms of schizophrenia.

PCL 032

CHEMICAL RESCUE OF MALARIA PARASITES LACKING AN APICOPLAST DEFINES ORGANELLE FUNCTION IN BLOOD-STAGE PLASMODIUM FALCIPARUM

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Abstract

Plasmodium spp parasites harbor an unusual plastid organelle called the apicoplast. Due to its prokaryotic origin and essential function, the apicoplast is a key target for development of new anti-malarials. Over 500 proteins are predicted to localize to this organelle and several prokaryotic biochemical pathways have been annotated, yet the essential role of the apicoplast during human infection remains a mystery. Previous work showed that treatment with fosmidomycin, an inhibitor of non-mevalonate isoprenoid precursor biosynthesis in the apicoplast, inhibits the growth of blood-stage *P. falciparum*. Herein, its demonstrated that fosmidomycin inhibition can be chemically rescued by supplementation with isopentenyl pyrophosphate (IPP), the pathway product. Surprisingly, IPP supplementation also completely reverses death following treatment with antibiotics that cause loss of the apicoplast. Its shown that antibiotic-treated parasites rescued with IPP over multiple cycles specifically lose their apicoplast genome and fail to process or localize organelle proteins, rendering them functionally apicoplast-minus. Despite the loss of this essential organelle, these apicoplast-minus auxotrophs can be grown indefinitely in asexual blood stage culture but are entirely dependent on exogenous IPP for survival. These findings indicate that isoprenoid precursor biosynthesis is the only

essential function of the apicoplast during blood-stage growth. Moreover, apicoplast-minus *P. falciparum* strains will be a powerful tool for further investigation of apicoplast biology as well as drug and vaccine development. This approach made by biotechnology science created marked effect in malaria eradiction.

PCL 033

HORMONAL REPLACEMENT THERAPY

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Abstract
Hormone replacement therapy (HRT) is any form of hormone therapy wherein the patient, in the course of medical treatment, receives hormones, either to supplement a lack of naturally occurring hormones, or to substitute other hormones for naturally occurring hormones. Hormonal replacement therapy based on idea that prevents discomfort caused by decrease hormone levels in blood circulation like estrogen, progesterone, thyroxin, insulin…etc. By this therapy we can prevent maximum diseases caused by deficiency of them like menopause, thyroidism and diabetes. This therapy using in now a day's mostly by women's to prevent osteoporosis, uterine cancer, ovarian cancer, cervical cancer, gout…etc. HRT will reduce the problems related to decrease hormone level in blood by induce them in to patient body in regular periodical level to live sustained live even after aging and also treated to premature aging. Even though side effects are present they are ignored by the benefits of therapy.

PCL 034

CURRENT ADVANCES IN TREATMENT OF DIABETES

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Abstract
Diabetes mellitus affect 382 people worldwide. It is one of the leading causes of mobility and mortality worldwide. A figure estimates that 8.3% of total adult population in the world is diabetic. In 2014 around 4.9 million deaths were estimated by International diabetes federation. Whereas it was around 1.5 million in 2012.Making it the 8th leading cause of death. It was estimated by IDF more than 80% of diabetes deaths are usually found in low and middle income countries. India is the home for more than 50 million diabetes individuals hence called the diabetes capital of the world. According to a study presented at the national diabetes submit, 2013 held in Amritsar, Punjab, India has the second highest number of individuals diagnosed with diabetes all over the world. The study also predicted that the number of diabetics in India is expected to reach 101.2 million by the year 2030. The alarming rate at which diabetes is flourishing worldwide poses a great challenge to the health care industry. Although the pharmaceutical market is flooded with a wide range of drugs for the treatment of diabetes a few limitations have led to the development of new and improved drugs. The current use of medication are intended to boost insulin production ,lower insulin resistance, reduce the production of glucose by the liver or slow down the absorption of carbohydrates by the intestine. These drugs may effectively restore normal blood sugar level but they do not have any effect on the progression of the disease and reduce in efficacy over time. More over some drugs do have certain severe side effects that further worsen co-morbid conditions. Apart from the clinical limitation, one of the major reasons critical to the development of innovative treatment is the failure of diabetics to comply with drug therapies. As diabetes progresses and medication becomes less effective, diabetic patients will seek other alternatives therapeutic approaches. Therefore, latest innovations in diabetes treatment are mainly targeted towards alternating the progression of the disease. This presentation deals with the recent advances in the management and treatment of Diabetes.

PCL 035

PROTECTIVE EFFECT OF RANOLAZINE ON URETHANE INDUCED LUNG CANCER IN BALB/C MICE

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Abstract
Lung cancer is a malignant lung tumor characterized by uncontrolled cell growth. Ranolazine is an anti-anginal drug which shows its effect by inhibiting latent sodium channel. Urethane a potent lung carcinogen is used as inducing agent in the present study. The aim of this study was to evaluate the Protective effect of Ranolazine on Urethane induced lung cancer in BALB/c mice. In vitro MTT assay was assessed against A549 & HepG2 cell lines to corroborate, in vivo study was done where Urethane was administered 0.5mg/gm i.p twice a week for a period of 4 weeks, Ranolazine 50mg/kg, 100mg/kg p.o daily as low and high dose respectively and Methotrexate as standard 0.5mg/kg p.o. toward the end of 5th week various parameters like MDA, GSH, CAT, SOD, ALT, AST, ALP were estimated. In vitro MTT revealed higher Cytotoxicity in A549 (IC_{50} 209.43 µg/ml) compared to HepG2 (IC_{50} 236.87 µg/ml) In the present study on treatment with Ranolazine (50 & 100mg/kg,p.o) marker such as AST, ALT, ALP and antioxidant parameters like MDA, GSH, CAT, SOD were significantly altered. In conclusion present study suggests that treatment with Ranolazine has shown protective effect on Urethane induced lung cancer in mice.

PCL036

SCHIZOPHRENIA- A MENTAL DISODER AND ADR

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Abstract
Schizophrenia is a mental disorder that affects the way a person behaves, thinks and sees the world. They usually have an perception of reality. There was a misconception that it was a multiple personality disorder / split personality disorder.Symptoms includes positive symptoms (auditory hallucination, delutions, disorganised speech) negative symptoms (absence of normal behaviour) and cognitive symptoms. Several attempts were done to know its mechanism and the important ones are dopamine hypothesis and glutamate hypothesis. Schizophrenia is classified into five types – paranoid schizophrenia, disorganised schizophrenia, catatonic schizophrenia, residual schizophrenia and schizoaffective disordes. It may be caused by several factors like genes and environment, different brain chemistry and structure. It can be diagnosed by psychiatic evaluation, medical history and exam laboratory tests. There is no medicine to cure schizophrenia but antipsychiotics can be used to reduce its symptoms. Typical antipsychotics are the first drugs develepod in 1950s. They include: chlorpromazine, haloperidol, thiothixene, trifluoperazine, perphenazine, thioridazine. Atypical antipsychotics were developed in 1990s. They include: risperidone, olanzapine, quetiapine, ziprasidone, clozapine. Regular excersize has a positive effect on the physical and mental health of the patient. Antipsychotics have many adverse reactions. More importance should be given to its ADR. Olanzapine, risperidone, clozapine have more adr than other antipsychotics. Severity of adr of second generation antipsychotics are serious. Few adr include dizziness, constipation, weight gain, cardiac problems, blurred vision, etc.

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PAQ 001

RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF ASPIRIN, ATORVASTATIN AND CLOPIDOGREL IN PHARMACEUTICAL DOSAGE FORMS

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Abstract

A simple, accurate, rapid and precise isocratic reverse phase high performance liquid chromatographic method has been developed and validated for simultaneous determination of aspirin, atorvastatin calcium and clopidogrel bisulphate in capsules. The chromatographic separation was carried out on an Inertsil ODS analytical column (250×4.6mm,5µm) with a mixture of phosphate buffer (pH 3.15 adjusted with o-phosphoric acid); Acetonitrile: methanol (40:40:20 v/v/v) as mobile phase, at a flow rate of 1.0 ml/min. UV detection was performed at 240 nm. The retention times were 2.4, 3.5 and 4.5 for atorvastatin, aspirin and clopidogrel respectively. The method was validated according to ICH guidelines and the acceptance criteria for accuracy, precision, linearity, robustness, limit of detection, limit of quantification and ruggedness were met in all cases. The % RSD values for atorvastatin, aspirin and clopidogrel were found to be 0.101%, 0.547% and 0.515% respectively. The linearity of the calibration curve for each analyte in the desired concentration range is good (r^2>0.99). The high recovery and low relative standard deviation confirm the suitability of the method for routine determination of aspirin, atorvastatin and clopidogrel in pharmaceutical dosage forms.

PAQ 002

STABILITY INDICATING ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF ALISKIREN HEMIFUMARATE AND VALSARTAN IN BULK DRUG AND TABLET DOSAGE FORM USING HPTLC

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Abstract

Aliskiren Hemifumarate is a Renin Inhibitor and Valsartan belong to the category of Angiotensin II receptor Antagonists; they are manufactured as a tablet under the brand name of Valturna by Novartis Pharma Ltd. A New sensitive, selective and specific analytical method was developed using Camag HPTLC. After a thorough literature survey it was concluded that this is the first HPTLC method developed for this combination, and we analysed the method under several Stress conditions also. After several trials, Chloroform: Glacial acetic acid: Methanol (8.5: 1:0.5 v/v/v), was chosen as the mobile phase and TLC plates, which gave good resolution and acceptable peak parameters. Other chromatographic conditions like chamber saturation time, run length, sample application volume, sample application positions, distance between tracks, detection wavelength, were optimized to give reproducible R_f values and symmetrical peak shape for the drug peak.The method was validated as per standard ICH guidelines . Linearity for Aliskiren was observed between 50-500 ng/ml and that of Valsartan was from 50-300 ng/ml. Precision study, LOD and LOQ was determined. Percentage recovery study was performed and was determined at 99.41 % and 99.17 % for Aliskiren and Valsartan respectively. Stress degradation was carried out and the method was found to be accurate and sensitive for impurities and bulk drug.

PAQ 003

ANALYTICAL QUALITY BY DESIGN (AQbD): A NEW PARADIGM FOR ANALYTICAL METHOD DEVELOPMENT

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Abstract
Quality of a finished product is gauged by compliance of certain predetermined specifications.This is ascertained by validated analytical procedures carried out by quality control personnel and laid down by the Quality Assurance (QA) department of a pharmaceutical company. In the present scenario, testing of the finished product alone is not sufficient, but emphasis is on 'Total Quality Management' through in-process testing and analysis. To achieve this goal, Quality by Design (QbD) concept has already been introduced and practised by all countries following guidelines of International Conference on Harmonization (ICH guidelines).Other features like Quality Risk Management, Pharmaceutical Quality System and Process Analytical Technology (PAT) guidelines are also being now introduced and integrated into analytical method development processes. They are very popularly accepted as AQbD (Analytical Quality by Design) concepts by the industry. Though not officially circulated, this new paradigm has attracted appreciation from all concerned and is evident by increasing publications in this field. Certain observations and suggestions are compiled and presented through presentation.

PAQ 004

STABILITY INDICATING ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF ALISKIREN HEMIFUMARATE AND VALSARTAN IN BULK DRUG AND TABLET DOSAGE FORM USING HPTLC

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Abstract
Aliskiren Hemifumarate is a Renin Inhibitor and Valsartan belong to the category of Angiotensin II receptor Antagonists; they are manufactured as a tablet under the brand name of Valturna by Novartis Pharma Ltd. A New sensitive, selective and specific analytical method was developed using Camag HPTLC. After a thorough literature survey it was concluded that this is the first HPTLC method developed for this combination, and we analysed the method under several Stress conditions also. After several trials, Chloroform: Glacial acetic acid: Methanol (8.5: 1:0.5 v/v/v), was chosen as the mobile phase and TLC plates, which gave good resolution and acceptable peak parameters. Other chromatographic conditions like chamber saturation time, run length, sample application volume, sample application positions, distance between tracks, detection wavelength, were optimized to give reproducible R_f values and symmetrical peak shape for the drug peak.The method was validated as per standard ICH guidelines . Linearity for Aliskiren was observed between 50-500 ng/ml and that of Valsartan was from 50-300 ng/ml. Precision study, LOD and LOQ was determined. Percentage recovery study was performed and was determined at 99.41 % and 99.17 % for Aliskiren and Valsartan respectively. Stress degradation was carried out and the method was found to be accurate and sensitive for impurities and bulk drug.

PAQ 005

QUALITY BY DESIGN

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Abstract

Quality by Design is an innovative approach that aims to ensure the quality of medicines by employing statistical, analytical and risk-management methodology in the design, development and manufacturing of medicines. It is a systematic approach to development that begins with predefined objectives and emphasizes product and process understanding and process control, based on sound science and quality risk management. QBD attempts to provide guidance on pharmaceutical development to facilitate design of products and processes that maximizes the product's efficacy and safety profile while enhancing product manufacturability.

The concept was outlined by quality expert Joseph M. Juran. Juran believed that quality could be planned, and that most quality crises and problems relate to the way in which quality was planned. Juran points out that that the word "quality" incorporates two meanings:

1. The presence of features that create customer satisfaction;
2. Freedom from failures of those features is also needed. In short, failures in features create dissatisfactions.

While Quality by Design principles have been used to advance product and process quality in every industry, it has been particularly implemented in the U.S. Food and Drug Administration (FDA) as a vehicle for the transformation of how drugs are discovered, developed, and commercially manufactured. The focus of this concept is that quality should be built into a product with an understanding of the product and process by which it is developed and manufactured along with a knowledge of the risks involved in manufacturing the product and how best to mitigate those risks.

PAQ 007

NANOSCALE ATOMIC AND INFRARED SPECTROSCOPY - A NEW TECHNIQUE

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Abstract

The combination of atomic force microscopy (AFM) and infrared (IR) spectroscopy, AFM-IR is one of the most important recent developments in the field of IR micro spectroscopy and chemical imaging. The importance of IR spectroscopy to our scientific infrastructure needs no introduction given the size of the industry and the breadth of its application. However, the fundamental physical limit imposed by diffraction has prevented the use of this technique in applications requiring high spatial resolution, which is the case for many applications in polymers and the life sciences. AFM-IR uses an AFM probe as the IR absorbance sensor and hence breaks through the diffraction limit to attain spatial resolution improvements of up to two orders of magnitude over traditional IR spectroscopy**.** This combination of measurement capabilities creates a multifunctional tool that provides nanoscale structure, chemical, mechanical, and thermal properties. In this presentation, principles and applications of this technique will be discussed.

PAQ 008

DEVELOPMENT OF NEW SPECTROPHOTOMETRIC METHOD FOR ESTIMATION OF TENOFOVIR DISOPROXIL FUMERATE USING NQS REAGENT

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Abstract

Visible spectrophotometric method has been developed for the determination of tenofovir disoproxil fumarate in pure and dosage form using chromogenic agent. This method is based upon reaction of drug with NQS reagent in alkaline medium to yield reddish brown coloured chromogen exhibiting absorption maximum at 453nm. Beer's Law is obeyed in the concentration range of 20-100ug/ml with coefficient of determination [r2] as 0.9915. The limit of detection and limit of Qauntitation were found to be 7.55ug/ml, 22.8ug/ml resp. The developed method has been validated as per ICH Q2 [R1] guidelines. The results demonstrate that the method is linear, precise, accurate and rugged. The proposed method was successfully applied for the determination tenofovir disoproxil fumerate in pharmaceutical dosage form [tablets] with good recovery and reproducibility.

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PPR 001

HAEMOVIGILANCE PROGRAMME IN NDIA –CURRENT SCENARIO

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Abstract

For the first time in India on Dec 10, 2012 ,in 60 medical colleges in the first phase along with a well structured programme for monitoring ADR associated with blood transfusion and blood product administration .A centralized haemovigilance programme to assure patient safety and to promote public health. This programme will be implemented under overall ambit of pharmacovigilence pharmacovigilence of India (PvPI), which is being co–ordinated by Indian pharmacopeia commission (IPC).All medical colleges of the country will be enrolled in this programme by the year 2016 in order to have a national centre of excellence for Haemovigilence at NIB which will be act as a global knowledge platform. National institute of biological will be the national coordinating centre for Haemovigilance .This Haemovigilnce programme is being seen in the world context of biovigilance .The ultimate goal of Haemovigilance programme of India is to be part of international Haemovigilance network (IHN) which presently has 28 countries as it members and provides a global forum for sharing best practices and benchmarking of Haemovigilance data.

PPR 002

MEDICATION ERRORS AUDIT AND MEDICATION RECONCILIATION IN A TERTIARY CARE HOSPITAL

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Abstract

Medication errors can be defined as “a failure in the treatment process that leads to, or has potential to lead to harm the patients”. Medication errors include prescribing errors, dispensing errors, medication administration errors. The objective of this study is to determine the nature and rate of the medication errors in a tertiary care hospital. Data was collected during six months from November 2014 to April 2015. A total of 150 prescriptions were collected. Overall errors rate among the prescriptions was found to be 34%. Errors owing to omission 9.3%, dosage errors 0.6%, wrong dose 14%, dose frequency errors 11.3%. Medication errors are more common and have a clinical significance. However, most of the medication errors are unintentional. Focusing on medical history, medication errors during discharge and working on identifying the patients at risk may impart medication safety during the hospital stay and even after discharge.

PPR 003

ASSESSMENT OF MEDICATION ADHERENCE AMONG PATIENTS WITH NON-COMMUNICABLE CHRONIC DISEASES

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Abstract

This study aimed to assess the level of medication adherence among patients with non-communicable chronic diseases. A cross sectional study was conducted among patients with non- chronic diseases, visiting outpatient department in public/private hospitals and clinics. Morisky Medication Adherence Scale was used to collect the data. The descriptive statistics was used to present the demographic and disease related information. Inferential statistics was used to the evaluation relationship among study

variables. All analyses were performed using SPSS 20.0. A total of 505 patients with non- chronic diseases (Diabetes, Hypertension, Heart diseases, Asthma and others) were enrolled for the present study. The mean age of the patients was 44.9 years, majority 304 (60.2%) were females. The proportion of diseases was- diabetes (45.1%), hypertension (26.5%), heart diseases (7.3%), asthma (6.3%) and others (14.7%). A very small proportion of the patients (11.1%) were having good medication adherence while 27.9% were having moderate adherence and 61.0% exhibited poor adherence. The study concluded that level of medication adherence among patients with non- communicable chronic diseases was very poor, efforts should be made to identify the factors associated with non-adherence so that level of adherence should be improved to achieve better therapeutic outcome.

PPR 004

CIPROFLOXACIN INDUCED GENERALIZED FIXED DRUG ERUPTIONS: A CASE REPORT

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Abstract
Ciprofloxacin, a broad-spectrum fluoroquinolone antibacterial agent, is generally considered to be a safe drug. However, occasionally it may have life-threatening complications. It, induces cutaneous adverse drug reactions (ADRs) in about 1–2% cases of treated patients. Urticaria, angioedema, maculopapular exanthems, and photosensitivity are the most frequently documented cutaneous adverse reactions. Fixed drug reaction (FDR) is responsible for about 10% of all ADRs. It is a delayed type of hypersensitivity reaction that occurs as lesions recurs at the same skin site due to repeated intake of an offending drug. In the present case report a 70 years old male patient brought to causality with complaints of red raised scaly lesions rash all over the body. Since 1day, patient was asymptomatic till 5day back, he took treatment for diorrhea then he developed red raised scaly lesions. Immediately the offending drug was withdrawn and started with steroid and antihistamines. After 4 days of treatment, the symptoms subsided and there was regression of skin eruptions. Thus, the present case is presented to alert the clinician to consider, upon occurrence, the suspected drug/(s) should be stopped immediately and the patient should be managed symptomatically. The patients undergoing treatment on an outpatient basis should be counseled for the early recognition of dermatological manifestations. With the similar reports, it can be predicted early case detection and can be prevented the occurrence of similar reactions in future.

PPR 005

BIONIC EYE

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Abstract
India is now home to the world's largest number of blind people. In 37 million people across the globe 15 million blind people are from India. 75% of these are cases of avoidable blindness. On the other hand, while India needs 2.5 lakh donated eyes every year, the country's 109 eye banks in which 5 located in Delhi manage to collect a maximum of just 25,000 eyes, 30% of which can't be used. Meanwhile, shortage of donated eyes is becoming a huge problem. In 15 million blind people in India, three million that is 26% of whom are children who suffer due to corneal disorders. But only 10,000 corneal transplants are being done every year because of shortage of donated eye. The bionic eye aims to restore basic visual cues to people suffering from eye diseases such as retinitis pigmentosa, which is

a genetic eye condition .A video camera fitted to a pair of glasses will capture and process images. These images are sent wirelessly to a bionic implant at the back of the eye which stimulates dormant optic nerves to generate points of light (phosphenes) that form the basis of images in the brain, thus even blind.

PPR 006

GOOGLE GLASS TECHNOLOGY IN PHARMACY PRACTICE

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Abstract

Google glass is one of inventions based on augmented reality it is a wearable technology which is being projected as affordable future technology for healthcare applications, by making use of Eye tap technology. Clinical services are the future of pharmacy, but the pharmacy department is still responsible for managing the medication dispensing process. Similarly, we envision a future in which pharmacy staff could use Google Glass to support the dispensing process. With the wide variety of dispensing workflow in health systems across the country, the ideal use for Google Glass will vary by institution. In general, however, we see opportunities for Google Glass to be used as a wearable scanning tool, with the onboard camera providing scanning capabilities. The connectivity provided by Glass can support dispensing by providing information during scanning and documenting the verification process. A visual record could be created to document preparation of intravenous medications or other medications with complex compounding procedures. The record would consist of a recorded video showing each step as it was performed. This would not necessarily prevent a negative event, but it could be used in training efforts and to investigate medication misadventures. Alternatively, Google Glass could support medication compounding by walking the preparer through each step, using visuals that show exactly what should be compounded, how much should be used, and how the final product should look. The Google glass technology applications can bring significant developments in pharmacy practice and also will increase the segment of safety by delivering precise pharma care to patients.

PPR 007

OESOPHAGEAL CANCER PATIENTS MAY REQUIRE CONTINUED SURVEILLANCE

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Abstract

Oesophageal cancer patients may require continued surveillance for as long as 10 years after resection as they face a constant, although low, risk of recurrence, according to a US-based study.Researchers conducted a retrospective analysis of the medical records of 355 patients with locally advanced oesophageal cancer who underwent an oesophagectomy between January 1988 and September 2009. Most of the patients were men with adenocarcinoma of the lower oesophagus and gastroesophageal junction; 52.9 percent had undergone additional chemotherapy or radiotherapy prior to surgery. [American Association for Thoracic Surgery 2015 meeting]. A total of 140 patients (39 percent) were still alive 5 years after surgery. After a median 41 month follow-up thereafter, the overall survival rate was 86 percent after 7 years, 70 percent after 10 years, and 51 percent after 15 years. Cancer-specific survival rates 7 and 10 years after the 5-year survival date to the point of death from oesophageal

cancer were 88 percent and 84 percent, respectively. Thirty-two (23 percent) of the 140 survivors developed recurrent oesophageal cancer, including 8 who did more than 5 years after surgery. After further treatment with chemotherapy, surgery, or chemoradiation, 11 of these patients survived for a further 5 years and 6 remained disease-free at their last check-up. The annualized risk of recurrence was 1.4 percent per year until year 10. Thus, it is concluded from above study that the oesophageal cancer patients should not immediately withdraw from the therapy and also the physician should advice the patients for a monthly basis checkup or atleast a yearly.

PPR 008

HOMEOPATHY MERE PLACEBO OR GOOD MEDICINE

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Abstract

Homeopathy was pioneered over 200 years ago. Practitioners and patients are convinced it has the power to heal. Today, some of the most famous and influential people in the world, including pop stars, politicians, footballers and even Prince Charles, all use homeopathic remedies. Yet according to traditional science, they are wasting their money. The basic principle of homeopathy is that like cures like: that an ailment can be cured by small quantities of substances which produce the same symptoms. For example, it is believed that onions, which produce streaming, itchy eyes, can be used to relieve the symptoms of hay fever. However, many of the ingredients of homeopathic cures are poisonous if taken in large enough quantities. So homeopaths dilute the substances they are using in water or alcohol. This is where scientists become skeptical - because homeopathic solutions are diluted so many times they are unlikely to contain any of the original ingredients at all. Yet many of the people who take homeopathic medicines are convinced that they work. Has science missed something, or could there be a more conventional explanation?.The placebo effect is a well-documented medical phenomenon. Often, a patient taking pills will feel better, regardless of what the pills contain, simply because they believe the pills will work. Doctors studying the placebo effect have noticed that large pills work better than small pills, and that colored pills work well than white ones. Could the beneficial effects of homeopathy be entirely due to the placebo effect? If so, then homeopathy ought not to work on babies or animals, who have no knowledge that they are taking a medicine. Yet many people are convinced that it does. In my presentation I shall look at various viewpoints to draw a scientific and reasonable conclusion of my topic of study. Thus enabling us to better understand where homeopathy stands.

PPR 009

BIORESORBABLE STENTS: A NOVEL APPROACH IN DRUG DEVELOPMENT TREATMENT FOR CORONARY ARTERY DISEASE

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Abstract

Coronary artery diseases (CAD)/ Coronary heart diseases (CHD) are the most common cause of mortality in general population. India is undergoing a rapid health transition with rising burden of coronary artery disease(CAD) currently accounting for approximately 2.4 million deaths every year Among adults over 20 years of age, the estimated prevalence of CAD is around 3-4% in rural areas and 8-10% in urban areas. Along with conservative treatment like antiplatelets and antihypertensives for patients with CAD, are like coronary angioplasty with metallic stent placement to open the atherosclerosed coronary arteries, as most common interventional procedure been performed nowadays. Bioresorbable stents/medicated stents/Drug eluting stents placement angioplasty represents a novel

approach in treatment of CAD. Bioresorbable stents made of a naturally dissolving material that prevent tissue hyperplasia and restenosis in coronary arteries and which dissolvesthe atherosclerotic plaques over years in blocked vessel wall and thus openup the coronary arteries, without leaving a permanent foreign body in the coronary artery will eventually replace the metallic stents in the coming years. First bioresorbable stent has been launched by Abott pharmaceuticals and many other bioresorbable stents are undergoing clinical or preclinical evaluation. This presentation will focus on current status of development of bioresorbable stents and clinical data/ patient response to these medicated stents available, to date.

PPR 010

NEW USES OF OLD DRUGS BASED ON NOVEL MECHANISM

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Abstract
Introducing a new drug to the market now costs a very huge amount of money and it's a time consuming process. The novel therapeutic option may provide cost effective treatment, especially for the developing countries with limited sources. Since decade's structures, the new drug may prove to be a loss in terms of its manufacturing costs if it produces any unacceptable adverse reactions or toxicity in early years of marketing. In such prevailing conditions, discovering new uses with known adverse drug reaction profile may prove to be beneficial for the uses of patients. The American medical association estimates that 40% to 60% of all prescriptions in the America are written for unapproved/unlabelled purpose. An unapproved use mainly indicates the lack of FDA approval. Many examples can be quoted to prove its benefits. For example, Aspirin approved by the FDA as a pain killer was used to reduce mortality rate among heart attack victims; the drug mytomycin approved for the treatment of gastric pancreatic cancers has been found to be useful in the treatment of lungs, bladder, breast and cervical cancers as well as in certain forms of leukemia. Although a large number of old drugs with new potential uses have been used, still they cannot be claimed to be complete. With advancement in our knowledge in various fields of medical sciences, we can make use of the time-tested drugs in diverse areas of clinical practices. Physician dissatisfaction with the current drugs may be the key factors that contribute to this prescribing trend of drugs for unapproved indications. Unethical promotion for dangerous misuse of drugs can prove to be threat to Medical ethics. Hence there is a need to develop programs to restrict the use

PPR 012

AIR BORNE INFECTION, CONTROL AND HEALTHCARE-INFLUENZA

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Abstract
Airborne diseases are caused by pathogenic microbes small enough to be discharged from an infected person via coughing, sneezing, laughing and close personal contact or aerosolization of the microbe. Transmission of airborne diseases can be greatly reduced by practicing social and respiratory etiquette. Staying home when ill, keeping close contact with an ill person to a minimum, allowing a few feet distance from others while ill, and wearing a mask, covering coughs and sneezes with elbow or tissue can greatly reduce transmission. Influenza, commonly known as "the flu", is an infectious disease caused by the influenza virus. Symptoms can be mild to severe. The most common symptoms include: a high fever, runny nose, sore throat, muscle pains, headache, coughing, and feeling tired. These

symptoms typically begin two days after exposure to the virus and most last less than a week. In children there may be nausea and vomiting but these are not common in adults. The influenza vaccine is recommended by the World Health Organization and United States Centers for Disease Control and Prevention for high-risk groups, such as children, the elderly, health care workers, and people who have chronic illnesses such as asthma, diabetes, heart disease, or are immuno-compromised among others. Reasonably effective ways to reduce the transmission of influenza include good personal health and hygiene habits such as: not touching your eyes, nose or mouth; frequent hand washing (with soap and water, or with alcohol-based hand rubs); covering coughs and sneezes; avoiding close contact with sick people; and staying home yourself if you are sick. Avoiding spitting is also recommended. Although face masks might help prevent transmission when caring for the sick, there is mixed evidence on beneficial effects in the community. Smoking raises the risk of contracting influenza, as well as producing more severe disease symptoms. People with the flu are advised to get plenty of rest, drink plenty of liquids, avoid using alcohol and tobacco and, if necessary, take medications such as acetaminophen (Paracetamol) to relieve the fever and muscle aches associated with the flu.

PPR 013

PAST, PRESENT AND FUTURE OF HARMACOVIGILANCE IN INDIA

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Abstract
While major advancement in the discipline of Pharmacovigilance has taken place in west, not much has been achieved in India. However, with more clinical trials and clinical research activity being conducted in India, there is an immense need to understand and implement Pharmacovigilance. Pharmacovigilance is the scientific process involving the collection, detection, assessment, monitoring and prevention of adverse effect, particularly the long term and short term adverse effect of medicine. Thalidomide played a key role in the origin and development of pharmacovigilance. The collaborative role of WHO caused the global oversight of pharmacovigilance. The scenario of pharmacovigilance in india as well as in west will be presented in the paper. This paper presents the systemic review on pharmacovigilance from its origin to the present scenario and also discusses various strategies and proposals to build, maintain and implement robust pharmacovigilance system in India in the coming years.

PPR 014

PHARMACY AND GLOBAL WARMING

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Abstract
I whole-heartedly believe in the ability of the pharmacy profession to help patients, and I equally believe that our planet has never faced a challenge as large as the global warming challenge. I think all pharmacists should be environmentalists, and here is why. Our over-reliance on fossil fuels is raising our CO2 production higher than at any other time in the earth's history. This leads, eventually, to all the disastrous effects on our weather, temperature, glaciers, and wildlife populations. Furthermore, we are quickly approaching the point at which we have used up more than half of the fossil fuels accessible on this planet. And since the planet is no longer creating oil at any measurable rate, as oil gets rarer, the price of fossil fuels and their derivatives will have to increase. And where do many of the pharmaceutical products that our patients rely on come from?? Oh yeah! Petroleum products! A-ha

there is the link. If fossil fuels reach a point where the market sees them as more rare, the cost of petroleum based products should increase. Leading to drug prices higher than the already high prices we currently see. So instead of saving our earth's petroleum reserves for pharmaceuticals and other products which maintain life and quality of life, we are burning them up and putting them into the air killing the planet and leading to more respiratory disease. It is definitely a more long-term issue, but that is why I believe all pharmacists should be environmentalists.

PPR 015

THE SCIENCE OF PREVENTION OF DRUG ABUSE AND ADDICTION

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Abstract

Addiction is defined as a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences. It is considered a brain disease because drugs change the brain, they change its structure and how it works. These brain changes can be long-lasting, and can lead to the harmful behaviors seen in people who abuse drugs. Drugs are chemicals that affect the brain by tapping into its communication system and interfering with the way neurons normally send, receive, and process information. Some drugs, such as marijuana and heroin, can activate neurons because their chemical structure mimics that of a natural neurotransmitter. This similarity in structure "fools" receptors and allows the drugs to attach onto and activate the neurons. Although these drugs mimic the brain's own chemicals, they don't activate neurons in the same way as a natural neurotransmitter, and they lead to abnormal messages being transmitted through the network. The resulting effects on the brain's pleasure circuit dwarf those produced by naturally rewarding behavior. The effect of such a powerful reward strongly motivates people to take drugs again and again. Addiction is a treatable disease. Research in the science of addiction and the treatment of substance use disorders has led to the development of evidence-based interventions that help people stop abusing drugs and resume productive lives. According to UNODC research shows that combining treatment medications with behavioral therapy is the best way to ensure success for most patients. Treatment approaches must be tailored to address each patient's drug use patterns and drug-related medical, psychiatric, and social problems. Hence the present seminar aims on the theory and science involved in drug addiction and abuse and the novel therapies involved in the withdrawal.

PCG 016

ELECTRONIC PRESCRIPTION

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Abstract

Electronic prescribing or e-prescribing (e-Rx) is the computer-based electronic generation, transmission and filling of a medical prescription, taking the place of paper and faxed prescriptions. E-prescribing allows a physician, pharmacist, nurse practitioner, or physician assistant to electronically transmit a new prescription or renewal authorization to a community or mail-order pharmacy. It outlines the ability to send error-free, accurate, and understandable prescriptions electronically from the healthcare provider to the pharmacy. E-prescribing is meant to reduce the risks associated with traditional prescription script writing. It is also one of the major reasons for the push for electronic medical records. By sharing medical prescription information, e-prescribing seeks to connect the patient's team of healthcare providers to facilitate knowledgeable decision making

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