One Day Seminar on

"INNOVATIONS IN PHARMACEUTICAL RESEARCH- 2017

AND

ORAL PRESENTATIONS"

On 19th August 2017

ABSTRACTS

Organized By

G. PULLA REDDY COLLEGE OF PHARMACY

Mehdipatnam, Hyderabad

and

INDIAN PHARMACEUTICAL ASSOCIATION

Telangana State Branch

Mehdipatnam, Hyderabad – 500 028. Phone : 040-23517222, 23515513;
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G. PULLA REDDY COLLEGE OF PHARMACY

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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 & Post-graduate students shall be groomed as responsible & highly acclaimed professionals in the Pharmaceutical Arena.

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EAMCET CODE: GPRP

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B. Pharm

M. Pharm - Pharmaceutical Chemistry
Pharmaceutics
Pharmacology
Pharmaceutical Analysis
Pharmacognosy

Pharm. D

KEYNOTE ADDRESS

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DRUG DISCOVERY IN INDIA: A MYTH OR A REALITY?

In a true scientific sense drug discovery will start with identifying a physiological receptor or a pathological marker or understanding molecular basis of a patho-physiological mechanism of a disease and thereby intervening in these mechanisms with a chemical entity. With time the developments in molecular biology, cell biology, genetic information etc. paved way to understand in depth the patho-physiological events of disease. All these have facilitated the advent of molecular pharmacology. Basing on these foundation brick work lot many molecules have been identified and their interactions with receptors or with patho- physiological events have been followed via computer aided drug design. Based on this and by using the knowledge of thermodynamic principles best fit molecules via docking studies have been identified, synthesized, tested, clinically evaluated and released as medicine into the market. However, unfortunately these inventions are getting saturated and no more chemical drug molecules seems to be appearing to make any impact on drug therapy after 2020. It is well known that we do not have any blockbuster molecules beyond this date which can make significant contribution to drug therapy. This is leading to a chaotic situation for drug market in India and abroad. Hence, alternatively industries are looking out for bio-similars, neucleo-similars and peptide-protein drugs. But these being cleared rapidly in a bio system the drug delivery research has become the focus of attention for everybody. My talk will cover broadly drug discovery and delivery discovery aspects which will help the industry to evergreen their existing markets and look for new bio molecules in future.

CHIEF GUEST PROFILE

Dr.D.Rambhau
Director - Technical
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Dr. Devraj Rambhau is presently working as Director (Technical), Nanoceutica Laboratories of Pulse Pharma, Hyderabad. Currently he is engaged in design, development and production of nanotechnology based drug delivery systems for various therapeutic agents to create value-added innovative and affordable products. In addition, he is working as Chief Scientific Advisor for Zydus Cadila to design novel peptide delivery systems and NATCO pharma as an advisor for NDDS division to produce generic nano-formulations. During 2009-11, he was Advisor to United Therepeutics USA for developing Liposomal broad-spectrum antiviral injectables. Previously for 6 years he worked as Advisor -Novel Drug Delivery Systems at Natco Research Centre, Natco Pharma Limited, Hyderabad. During this tenure, he was engaged in proposing delivery strategies for anticancer agents using liposomal (Doxorubicin) and albumin bound nanoparticulate (Paclitaxel) technology platforms. He was instrumental in developing these techonology from R&D to production scale. Besides, he has given several inputs for their quality control and protocol desigining for in vivo testing at pre-clinical and clinical levels. For a short period of six months, he was consultant to Relisys India to design nanoparticle-coated stents.

Two nanotechnology-based anticancer products developed by him are in pipeline for release into Indian/ International market. ALBUPAX is the first nanotechnology based anticancer drug (Paclitaxel) from India, and first generic version of Abraxane, USA. DOXNAT is first pegylated nanoliposomal product of doxorubicin from Indian pharma industry, and is the first generic version of DOXIL (CAELYX). Several other products such as Liposomal Amphotericin, Microparticulate depot injections of hormones and some more are in the development under his guidance. His expertise lies in designing research methodologies to realize innovative ideas into commercially viable products. His objective is to apply nanotechnology to design safer, more effective and affordable drug products of several therapeutic agents for the benefit of common man.

Dr. Rambhau obtained B. Pharm, M. Pharm & Ph.D degrees from Nagpur University and became professor in pharmacy at University College of Pharmaceutical Science, KU at the age of 39years. He has 35 years of teaching and research experience during which he has published 125 research papers in national and international journals. He guided and produced 27 Ph.D's and 69 M.Pharm theses in Pharm sciences.

Prof. Rambhau was Head, Principal, Chairman B.O.S. & Dean of Faculty of Pharmaceutical Sciences, KU during his tenure at Kakatiya University starting from 1980-2005. He has held prestigious positions such as Incharge Vice-Chancellor Kakatiya University, Executive Council member of KU and member of Senate and Academic Council. He rendered his services to the government of A.P and India as PCI Member and Inspector, UGC and AICTE evaluator of Research projects and Expert member of UPSC and APPSC. Received Rs. 1.67 Crores research grants from UGC, CSIR, DST & AICTE.

* He was visiting professor to Frei University Berlin, Germany, 1986, School of Phamacy, Otago University, Newzealand, 2004, Al. Arab. Medical University, Libya, 1997, School of Phamacy, Addisababa, Ethiopia, 2003.
* He has received neumerous awards like "Prof. G P Shrivastava Memorial Life Time Achievement Award (2010)", "Shri Mandlekar Memorial Gold Medal by CIPPRA (Central india Pharmacy Promotion and Research Association) (2009)", "Kakatiya University Pharma-Alumini NRI Chapter USA Best research Paper Gold Medal (2003)", "Kakatiya University Research Promotion Gold Medal (2002)", "Letter of appreciation from American Rheumatological society (1989)", "Best teacher Award of A.P State (1992)", "Out standing 'Telugu personality'Award from Delhi, Telugu Academy (1992)", "Welcome foundation of UK Award (1986)", "3rd Chronopharmacology conference Award (1986)", "Best Research paper Award of IPA *(1977)", & "American Cosmetics / Toiletries Award (1977)".

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BEGINNING & EVOLUTION OF GMP AND REGULATIONS

Good Manufacturing Practice (GMP) is a set of regulations, codes, and guidelines for the manufacture of drug substances and drug products, medical devices, in vivo and in vitro diagnostic products, and foods.The instances of 300 people killed due to sulfathiazole tab tainted with Phenobarbital and 1962 Kefauver-Harris Drug Amendments due to Thalidomide tragedy led to evolution of GMP. Pharmaceutical products are for the benefit of human health, each year new pharmaceutical products are introduced in to market place in addition to the existing drugs. These have to be regulated to ensure safety, quality and efficacy of the products. Current Good Manufacturing Practices (CGMP) is pertinent to quality assurance and it has evolved from the tragedies faced by the humankind from the pharmaceutical products. The curtain raiser for implementation of the CGMP is the exposure of unsanitary conditions in meat processing units; series of events have strengthened the norms of the CGMP incorporating "Biological control act in 1902" to "Infant formula act in 1980". The major regulatory authorities framing CGMP guidelines include World Health Organization (WHO), United States Food and Drug Administration (USFDA), European Medical Agency (EMEA) and Health Canada. As a major manufacturer and exporter of the pharmaceutical products Indian pharmaceutical industries has to strengthen its CGMP and adhere to the regulatory guidelines.

GUEST OF HONOUR PROFILE

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Mr. S.B.M.P. Halakatti working as Vice President of QA/QC in M/S Hetero Labs, Hyderabad. Has rich experience of changing the non-compliance operational facility into highly regulatory compliant company. Associated with manufacture of pharmaceutical products both API and Finished dosages for around 35yrs. Worked in companies who have presence in over 60 countries world over and in highly regulated markets. Handled multiple locations and integrated quality systems among all sites.

He is part of success story in Granules India from 230 Crores in 2009 to 1100 Crores in 2014. Granules is 100% EOU unit with presence over sixty countries. His contribution was reduced NCs and worked through team to update dossiers so as to meet compliance without disturbing daily production schedules. Building up customer relationship. Mr.Halakatti had rich hand on experience in handling of quality complaints, audits, development of vendors, regulatory filings, invent new system to suite the large scale operations. In Sri Krishna Group (Sri Krishna Pharmaceuticals and Sri Krishna Drugs Ltd.,) he was responsible for building of FD/PFI facility till it is commissionable. In Gilman Laboratories Pvt Limited which is an SSI unit selling products on promotional basis he was responsible for entire operations of formulations manufacturing of tablets, liquid orals and capsules.

He is very familiar with International GMP requirements as per ICH Q7, 21 CFRs,TGA,Eudralex, etc., Filed several changes in Process, Equipment, and Changes to facility and got approvals from Regulatory agencies. Introducing Risk Based Approach and implement Lean Approach in Qualification/ validation, Calibration. Trend analysis of all critical product specifications. He has directly handled around 15 US FDA,8 TGA,7 France AFSSAPS inspections and AIFA Italy, Infarmed Portugal, and German Health Agencies. Also conducted WHO, ISO, HACCIP, Kosher certifications.

Mr. Halakatti obtained B.Sc in Chemistry, Physics, and Zoology, M.Sc. in Microbiology from Karnataka University. Published research papers on Waste Water Management.

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Programme Schedule

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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CONTENTS

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PHARMACEUTICS

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OPCEU002

ACCUDEP TECHNOLOGY FOR ORAL MODIFIED DRUG RELEASE

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Accudep technology is a new advanced technique ideally suited to pharmaceutical dosage form manufacturing. Accudep technology is a single continuous automated process which is being applied to a range of product areas including intermediate-release dosage forms, super generic products and novel controlled-release formulations. The technology is a highly-controlled electrostatic deposition process. The key steps in the process are attachment of film substrate to a patterned receiving module, controlled deposition of pure pharmaceutical powder onto the patterned regions on the substrate film, dose measurement, lamination to second film and processing into final dosage form. The goal is to identify highly flexible delivery designs that will accommodate many drugs of diverse physiochemical characteristics, dose ranges and facilitate engineering of immediate as well as controlled-release of pharmaceutical active powder. The system design differs from currently marketed controlled-release products in that it avoids the conventional pharmaceutical processes such as mixing, blending, granulation, drying, sizing and compression. Instead, the proposed system utilizes active drug moieties as pure active ingredient and achieves controlled-release through the use of polymeric film of various release characteristics. It provides several benefits to the pharmaceutical industry including lower manufacturing costs,more precise dosing,a cleaner manufacturing environment and fewer waste materials. Hence Accudep technology can be used to prepare low dose,potent drug with known content uniformity and stable immediate release dosage forms.

KEY WORDS: Accudep technology, controlled-release, electrostatic-deposition, pharmaceutical active powder.

OPCEU004

Nanotechnology: A future medicine for TB therapy

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Tuberculosis is the chronic infectious disease causing 9.6 million deaths worldwide every year and 2.2 million deaths in india . It is about 40% of deaths every year and represents a principle cause of mortality resulting from bacterial infection. Nanotechnology based rational targeting may improve therapeutic success by limiting adverse effects and requiring less administration regimens, ultimately resulting in higher patient compliance and thus attain higher adherence levels. Nanoparticulate system have unique and comparatively more effective drug delivery carriers, including liposomal– medicated drug delivery, polymeric nanoparticals/ microparticles, solid lipid nanoparticals, nanosuspensions, nanoemulsions, niosomes, dendrimers, metal/cyclodextrin inclusion complexes and other nanosystems exploting the extraordinary properties of matter at the nanoscale. Nanoparticles show significant improvements in diagnosis. Treatment and prevention and provide the flexibility of selecting the invasive and non-invasive route of delivery for chemotherapy of tuberculosis.

Key Words: Nanoparticals, Nanosuspensions, Nanoemulsions

OPCEU005

FORMULATION AND *IN-VITRO* EVALUATION OF TRANSDERMAL DRUG DELIVERY SYSTEM OF CAPTOPRIL BY EMPLOYING NATURAL POLYMERS

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The present study was to design and develop suitable matrix type transdermal drug delivery systems of Captopril using different natural polymers, to prepare and evaluate Matrix type Transdermal patches of Captopril using natural polymers Carrageen gum, Moringa gum, Chitosan, Xanthum Gum and Guar gum. Different polymeric patches containing Captopril were prepared and evaluated for physicochemical, in vitro drug release and Kinetic studies. The IR spectral analysis and DSC of Captopril showed that the principal peaks and for the mixture of Captopril with different polymers additional to the principal peaks, some additional peaks were observed with physical mixtures, which could be due to the presence of polymers. The presence of all the characteristic bands due to functional groups in polymer mixtures suggests that there is no interaction between the drug and polymers used in the present study. The prepared transdermal patches were evaluated for their physiochemical characteristics such as physical appearance, weight uniformity, thickness, folding endurance; moisture content, drug content were suitable. Transdermal patches with Carrageen gum showed better release than patches with Guar Gum. The release rate was increased with an increase in Carrageen gum content. The research work gives a rational guideline for formulating a controlled release transdermal delivery system F7 for effective therapy of Hypertension.

Key Words: Transdermal Patches, natural polymers, Chitosan, guar gum, captopril

OPCEU006

OVERVIEW ON BUCCAL DRUG DELIVERY SYSTEMS

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The buccal region of the oral cavity is an attractive target for administration of the drug of choice, particularly in overcoming deficiencies associated with the latter mode of administration. Problems such as high first-pass metabolism and drug degradation in the gastrointestinal environment can be circumvented by administering the drug via the buccal route. Moreover, rapid onset of action can be achieved relative to the oral route and the formulation can be removed if therapy is required to be discontinued. It is also possible to administer drugs to patients who unconscious and less co-operative. To prevent accidental swallowing of drugs adhesive mucosal dosage forms were suggested for oral delivery, which included adhesive tablets, adhesive gels, adhesive patches and many other dosage forms with various combinations of polymers, absorption enhancers. Natural polymers have recently gained importance in pharmaceutical field. Mucoadhesive polymers are used to improve drug delivery by enhancing the dosage form's contact time and residence time with the mucous membranes. Mucoadhesion may be defined as the process where polymers attach to biological substrate or a synthetic or natural macromolecule, to mucus or an epithelial surface. When the biological substrate is attached to a mucosal layer.This phenomenon is known as mucoadhesion. The substrate possessing bioadhesive polymer can help in drug delivery for a prolonged period of time at a specific delivery site. The studies of Mucoadhesive polymers provide a good approach of mucoadhesion and some factors which have the ability to affect the mucoadhesive properties of a polymer. Both natural and synthetic polymers are used for the preparation of mucoadhesive buccal patches. In addition to this, studies have been conducted on the development ofcontrolled or slow release delivery systems for systemic and local therapy of diseases in the oral cavity.

Key words: Mucoadhesive buccal patch, Natural polymer, Bioadhesive polymers, Buccal formulations, Buccal Mucosa, first-pass effect, permeation enhancers

OPCEU007

NANOROBOTS – A CANCER THERAPY

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Nano-robots are the robots that are simply known as that controllable machine at the nano (10-9) meter or molecular scale, composed of nano-components. More specifically, nano robotics refers to the still largely hypothetical. Nanotechnology engineering discipline of designing and building nano robots. Even though the field of nano robotics is fundamentally different from that of the macro robots due to the differences in scale and material, there are many similarities in design and control techniques that eventually could be projected and applied. Due to the modern scientific capabilities, it has become possible to attempt the creation of nano robotic devices and interface them with the macro world for control. There are countless such machines which exist in nature and there is an opportunity to build more of them by mimicking nature. Nowadays these nano robots play a vital role in the field of Bio Medicine. Especially in the treatment of cancer, Cancer can be successfully treated with current stages of medical technologies and therapy tools. However, a decisive factor to determine the chances for a patient with cancer to survive is: how earlier it was diagnosed; what means, if possible, a cancer should be detected at least before the metastasis has began .

Another important aspect to achieve a successful treatment for patients is the development of efficient targeted drug delivery to decrease the side effects from chemotherapy. Considering the properties of nano robots to navigate as blood borne devices, they can help on such extremely important aspects of cancer therapy.

KEY WORDS : Nano robots,nanotechonology, nano components.

OPCEU 008

NANOTECHNOLOGY FOR EPICUTANEOUS DELIVERY OF VACCINE

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In vaccine development, nanotechnology plays a significant role. In the formulation of vaccine, the nano particles are used to permit immunogenicity and improved antigen stability . the nanoparticles having the property of slow release & targeted drug delivery . However, due to fundamental understanding, the behaviour of nanoparticles in vivo conditions enhances antigen processing and immunity. When comparing to present vaccines the nanotechnology based vaccines might have potential to open therapeutic avenues for treating infections, In this topic, a broad overview of recent advances in prophylactic nano vaccinology is discussed. The study of nanotechnology for epicutaneous delivery of pharmaceuticals and vaccines is increasing rapidly.due to concerns about the weak intrinsic instability in vivo, toxicity, immunogencity of these vaccines. The need for multiple administrations, improvements of convential vaccines advancements are undoubtely required. To overcome these problems, vaccine devolpment has been incooperated with nanotechonolgy platforms. The formulations that boost antigen effectiveness are increasingly needed, where as vaccine development orientates toward less immunologic mimalist compositions. Polystyrene nanoparticles can conjugate to a variety of antigens as they can be surface-modified with various functional grade. These nanoparticles have been used in the preparation of various vaccines including HBV, new castle diseases vaccines, DNA vaccines. A great assortment of synthetic polymers are used to prepare nanoparticles . natural polymers based on polysaccharide have also been ued to prepare nanoparticules adjuvant, such as pullulan, alginate, inulin and chitosan.

Key words :- Vaccine, nanoparticle, adjuvant, vaccine delivery.

OPCEU010

STUDIES ON FORMULATION AND EVALUATION OF SUSTAINED RELEASE MATRIX TABLETS OF GLIPIZIDE BY EMPLOYING SYNTHETIC AND NATURAL POLYMERS

Syed Abdul Azeez Basha, Humera Haneef *

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The aim of the present study was to formulate and evaluate sustained release matrix tablets of glipizide, using different synthetic polymers like Ethyl cellulose, Hydroxy propyl methyl cellulose and natural polymers like Carragenan, Chitosan, Gum karaya and Bhara gum which are suitable for delivering the drug for sufficient long time and reduce frequency of dose. The concept of formulating sustained release tablets using different polymers offers a suitable and practical approach of susutainity in release and dissolution characteristics. Glipizide is comes under BCS class-II of sulfonylurea agent. The tablets were prepared by direct compression method and evaluated for precompression parameters like angle of repose, bulk density, tapped density, Carr's index and postcompression parameters like the hardness, friability and weight variation, and *IN VITRO* dissolution studies. Among the various sustained release tablets of Glipizide matrix tablets prepared, the formulation F10 shows maximum release of drug in 12hrs, which is considered as best formulation for sustained release tablets of Glipizide. Optimized formulation F10 (drug to polymer ratio 1: 4.5) which includes carragenan gum and chitosan has successfully sustained the drug release and the drug release pattern was similar to theoretical release profile. The formulation F10 best fitted into zero order release process and shows Fickian diffusion mechanism. FTIR and DSC studies show that there is compatibility between drug and excipients for the developed matrix tablets.

Key words: Glipizide, sustained release, HPMC, carragenan, chitosan, bahara gum, karaya gum, Polymers, matrix tablets.

OPCEU012

NOVEL OCULAR SUSTAINED RELEASE FLURBIPROFEN INSITU GELS DEVELOPMENT AND IN-VITRO EVALUATION

Abdul Mannan, Zeba Begum and Khizra Nishat

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Insitu gelation is a process of gel formation at the site of application, like ocular region. Insitu gel phenomenon based upon liquid solution of drug formulation and converted into mucoadhesive semi-solid. So that it can overcome the drawbacks of conventional eye drops like poor therapeutic response, because of high tear fluid flow dynamics. And also the high frequency of eye drop instillation is associated with patient non-compliance. In the present project, insitu gels were prepared by utilising various concentrations of pH responsive gelling agents like carbopol 934, sodium alginate, chitosan, and viscosity modifier agent HPMC K4M is used. From the nine formulation trails F1-F9, formulation F6 containing 0.8% of HPMC K4M and 0.5% of Carbopol 934 was found to be optimised. The developed optimised formulation was tested for various in-vitro quality control tests and was found to sustaining the drug release upto 8 hours, was stable, non-irritant and found to be sterile in the performed tests. The developed system thus could be a viable alternative to the conventional eye drops.

Keywords: Insitu gelling, flurbiprofen, sustained delivery.

OPCEU014

DESIGN AND EVALUATION OF ACECLOFENAC GEL CONTAINING FIXED OIL AS PERMEATION ENHANCERS

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The objective of study was to prepare and evaluate aceclofenac transdermal gel with different permeation enhancers. Aceclofenac gels were prepared by dispersion method using natural polymer (xanthum gum 2% and carbopol 934 p 1%) as gelling agents. Different permeation enhancers (olive oil, coconut oil and sesame oil) with two different concentrations 1% and 5% were used. FTIR studies revealed the compatibility between drug and permeation enhancers. Solubility studies revealed aceclofenac solubility was highest with sesame oil (0.86±0.03mg/ml).The prepared gels were evaluated for pH, drug content, extrudability, Spreadability, viscosity, in-vitro studies, ex-vivo studies, skin irritation studies. In-vitro diffusion studies concluded that AXC1, ACC1, AXP1, ACP1, AC05, AXF5, ACS5 and ACI5 have shown more than 90% drug release for 8hrs, in comparison to control gels (AXCON and ACCON) which have shown 48.1% and 52.5% of drug release for 8 hrs respectively. Ex-vivo permeation studies revealed that ACC1, AXP1, AXF5 and ACS5 have shown better release of aceclofenac in 4 hrs with Q8 of 1675.6, 2256.267, 2213.98 and 1684.56 µg/cm^2 respectively; flux of 206.94, 286.99, 300.467 and 207.67 µg/cm^2/hr respectively; permeability coefficient of 27.6, 38.5, 40.1 and 27.7cm/ hr×10^{-3} respectively and enhancement ratio of 5, 6.3, 6.7 and 5 respectively, in comparison to control gels (ACCON and AXCON) which have shown Q8 of 355.68 and 401.92 µg/cm^2 respectively and flux of 41.24 and 45.34 µg/cm^2/hr respectively. Skin irritations studies have shown ACC1, AXP1, AXF5 and ACS5to be nonirritant. It was concluded that the ACC1, AXP1, AXF5 and ACS5 formulations which containing virgin coconut oil (1%), parachute oil (1%), Figaro olive oil (5%) and sesame oil (5%) as permeation enhancers can provide good permeation of aceclofenac.

Keywords: Accelofenac, sesame oil, permeability coefficient

OPCEU015

DESIGN AND OPTIMIZATION OF THERMOREVERSIBLE NASAL IN-SITU GEL OF ATOMOXETINE HYDROCHLORIDE USING TAGUCHI METHOD

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The present investigation was aimed to develop a thermo reversible nasal in-situ gel of atomoxetine hydrochloride using Taguchi DOE method to improve the residence time and targeting the brain through nasal mucosa. In situ gel was prepared using cold method reported by Schmolka, using thermo reversible polymer Poloxamer 407 (18%, 19%, 20%) and mucoadhesive agents Carbopol 934P (0.3%, 0.5%) and HPMC K100 (0.3%, 0.5%). Optimization of formulations was done by Taguchi L9 OA experimental design. The mechanism of in situ gel is by temperature-triggered ionic gelation. In-situ gel formulation F4 having 20% Poloxamer 407 & 0.3% Carbopol 934P and formulation F6 having 20% Poloxamer 407& 0.3% HPMC K100 were optimized based on gelation temperature, mucoadhesive strength, *in vitro* drug diffusion and permeation. Drug release studies were conducted with three membranes viz; dialysis membrane, egg membrane and goat nasal mucosa. The gelation temperature of F4 and F6 was found to be 37^0C ± 0.4 & 37^0C ± 0.2, drug content 98.34% &98.33% and drug release was 83.18%, 82.4% in 4 hrs with a flux of 436.9 & 428.1 µg.cm^2/hr respectively. The release pattern of drug followed first order kinetics with Higuchi release mechanism. The value of 'n' from Korsmeyer equation indicated the anomalous diffusional drug release. This study concluded that use of atomoxetine hydrochloride as a nasal in situ gel, increased nasal residence time and thus may improve the bioavailability of the drug through nasal route and avoids first pass metabolism. Drug release from in-situ gels through different membranes was found to be in the order viz-a-vis; dialysis membrane > egg membrane> nasal mucosa.

Key words: Atmoxetine hydrochloride, DOE method, diffussional drug release, nasal route.

OPCEU016

MICROENCAPSULATION TECHNOLOGY IN TREATMENT OF OSTEOARTHRITIS AND TUBERCULOSIS

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Microencapsulation may be defined as the process of enveloping the substance within another substance on a very small scale, yielding capsules or particles ranging from one micron to several hundred microns. Microparticles offer various significant delivery systems including:(1) an effective protection of the encapsulated active agent against enzymatic degradation,(2) the possibility to accurately control the release of the incorporated drug,(3) an easy administration,(4) desired Pre- Programmed drug releases profiles can be provided which match the therapeutic needs of patients. Drug discovery and delivery to retard the degeneration of joint tissues are challenging. Current treatment of arthritis involves the administration of ideal Non-steroidal Anti Inflammatory Drugs (NSAIDs) mainly by oral and parental route.Frequent dosing of NSAIDs often leads to the patient noncompliance. Among several novel drug technologies Microencapsulation is one of the novel plot technology employed to sustain the drug release and reduce the gastrointestinal irritation, dose intake and ultimately improve the patient compliance in the pharmacotherapy of arthritis. Indian sub-continent has one of the highest reported Tuberculosis (TB) cases. Recently multi drug resistant (MDR) and totally drug resistant (TDR) TB strain has been also reported in India which is resistant to all 1st and 2nd line of TB drugs. Many of the current antibiotics are ineffective in eradicating the bacteria once infection is established. Micro Particles with aerodynamic diameters of 1-5 micrometers deposit in the periphery of lungs and are phagocytized by alveolar macrophages, the primary site of Mycobacterium tuberculosis infection.

Key words : Microencapsulation, multidrug resistant, NSAIDs, tuberculosis.

OPCEU018

FORMULATION AND EVALUATION OF POLYHERBAL MOUTHWASH AND ITS COMPARETIVE STUDIES WITH MARKETED CHLORHEXIDINE MOUTHWASH

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Mouthwashes have a key role as adjuncts to daily home care, preventing and controlling supragingival plaque, gingivitis and oral malodor and is used prior to and after oral surgery procedures such as tooth extraction. The present mouthwashes in the market have high alcohol content up to 27% and alcohol is harmful for oral health and causes oral cancer and dry mouth, thus the need for preparing 100% alcohol free mouthwashes has gained significance in recent years and our present study focus on the same. We have prepared a 100% alcohol free mouth wash by the extraction of essential oils (cinnamon clove and ginger oils as key ingredients) and to compare the effect of antimicrobial activity (against Streptococcus mutants) of polyherbal mouth wash with the chlorhexidine. Scientific investigations including anti microbial activity, palatability, isothermal stability, PH and viscosity tests have been performed. In our studies we found that the formulation (F3) with essential oils concentration ratio of 2:2:1 respectively is a stable formulation and has shown promising antibacterial activity and has shown greater zone of inhibition when compared with that of marketed chlorhexidine formulation. Thus our herbal mouthwash preparations have potent action and minimal side effects when compared with the marketed Chlorhexidine mouthwash, hence there is need for increased usage of herbal preparations to avoid various adverse effects.

Keywords- Supragingival plaque, Gingivitis, Oral malodor, *Streptococcus mutants.* Cinnamon, Clove and Ginger oils, Polyherbal Mouthwash, Chlorhexidine.

OPCEU019

TEMPERATURE AND PH STIMULI RESPONSIVE POLYMER AND THEIR APPLICATIONS IN CONTROLLED AND SELF REGULATED DRUG DELIVERY.

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In the field of controlled drug delivery system and self regulated drug delivery system stimuli responsive polymers are gaining interest, stimuli responsive polymers are those which display significant physiological changes upon small change in their environmental condition such as change in temperature, PH, ionic factors, magnetic field. The changes in environment cause trigger at the disease site that could be exploited with stimuli responsive polymer or smart polymer and these smart polymer return to their initial stage after trigger is removed. With greater understanding of the difference between normal and pathological tissues, cells and also parallel development in material design there is highly promising role of stimuli responsive polymer for drug delivery.

Key words: Stimuli responsive polymer, temperature, PH.

OPCEU020

PHARMACOKINETIC/PHARMACODYNAMIC -DRIVEN DRUG DEVELOPMENT – AN OVERVIEW

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Drug discovery and development involve the utilization of in vitro and in vivo experimental models. PK/PD modelling will play an increasingly important role in drug development, because it will identify key properties of a drug in vivo, allowing the characterization and prediction of the time course of drug effects under physiological and pathological conditions (intensity and duration). It has developed from a descriptive to a mechanism-based approach, taking the relevant processes on the causal path between drug administration and drug effect into account. A factor in the assessment of safety during early drug development is the pharmacokinetic profile of the compound. This allows safety data to be considered in the light of systemic drug exposure and therefore permits a quantitative assessment. The pharmacokinetic (PK) / pharmacodynamic (PD) properties of a drug well defines in order to make informed decisions regarding appropriate dosing recommendations. Characterizing the relationship between the pharmacokinetics (PK, concentration vs. time) and pharmacodynamics (PD, effect vs. time) is an important tool in the discovery and development of new drugs in the pharmaceutical industry. Effective PK/PD study design, analysis, and interpretation can help scientists elucidate the relationship between PK and PD, understand the mechanism of drug action, and identify PK properties for further improvement and optimal compound design. Additionally, PK/PD modeling can help increase the translation of in vitro compound potency to the in vivo setting, reduce the number of in vivo animal studies, and improve translation of findings from preclinical species into the clinical setting. This review will address past and current deficiencies in how PK studies are conducted and offer new strategies that might bridge the gap between preclinical and clinical trials.

Keywords: drug development, drug discovery, pharmacokinetics, pharmacodynamics, study design

OPCEU021

EFFECT OF COMPRESSION FORCE ON DISINTEGRATION TIME OF MOUTH DISSOLVE TABLET OF ATENOLOL

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Fast disintegrating dosage forms or mouth dissolving tablets are those which dissolve or disintegrate quickly in the oral cavity, resulting in a solution or suspension. The drug selected for this study is atenolol (25mg). The aim of the present study is to develop the mouth dissolving tablets by simple, cost effective method by utilizing the existing pharmaceutical machinery. The study was also aimed at assessment of feasibility of direct compression method for mouth dissolving tablets. Different disintegrants were mixed with the drug at different ratios, compressed, studied for the granule properties and different parameters were evaluated. The developed formulation of atenolol showed good palatability and dispersed within 40 seconds. Direct compression method was successfully developed for mouth dissolve atenolol tablets. This method avoids the time and efforts involved in other techniques.

key words : Mouth dissolve tablet, atenolol, direct compression, super disintegrants.

OPCEU023

FORMULATION AND EVALUATION OF FLOATING MATRIX TABLETS OF ROSUVASTATIN

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In present investigation, an attempt was made to develop gastro retentive tablets of Rosuvastatin using Hydroxyl Propyl Methyl Cellulose (HPMC) as release retarded material. Rosuvastatin is an orally administered falls in therapeutic class of antilipidemic. Rosuvastatin has a elimination half-life 16-18Hrs and possesses chemical, enzymatic stability and absorption profiles in acidic pH which makes Rosuvastatin suitable candidate for formulating it as gastro retentive dosage form for improved bioavailability. Sodium bi carbonate was used to get desired floating properties. The tablets so designed were evaluated and found to have acceptable physicochemical properties. Formulation S2 containing HPMC: drug (3.0 : 1.0) and $NaHCO_3$ (12% w/w), which was exposed to acetone vapors for a period of 6 hrs has shown optimum floating properties and better dissolution profile i.e. 97.3% in 27 hrs. Hence, S2 formulation was considered as optimized formulation. The in vitro release data of optimized formulation was treated with mathematical equations and was concluded that drug release followed zero order kinetics (0.9599) with anomalous transport mechanism (0.5331). Based on the results it can be concluded that Matrix floating tablets of Rosuvastatin containing HPMC and $NaHCO_3$ provides a better option for controlled release action and improved bioavailability.

Key words: Rosuvastatin, HPMC, gastro retentive floating tablets

OPCEU024

EFFECT OF CHEMICAL ENHANCERS ON SKIN PERMEATION

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The objective of this study was to prepare and evaluate itraconazole transdermal gel with different permeation enhancers. Itraconazole transdermal gels were prepared by dispersion method using natural polymer (Tara gum 2% and Kondagogu gum 4%) as gelling agents. Different permeation enhancers such as fatty acids (oleic and stearic), organic acids (citric, acetic, maleic and succinic), sulfoxides (dimethyl sulfoxide) with two different concentrations 1% and 2.5% were used. The prepared gels were evaluated for physicochemical properties, in-vitro, ex-vivo, skin irritation and stability studies. All formulations have shown good physicochemical properties. In-vitro diffusion studies concluded that ITC1, ITM1, ITSU1, IKC1, IKM1 and IKSU1 have shown more than 90% drug release for 4-7 hr. Ex-vivo permeation studies of the ITM1 has shown better release of itraconazole in 8 hr with Q8 of 2319.109±5.91µg/cm^2; flux of 281.12±0.98 µg/cm^2/hr; permeability coefficient of 110.199±0.98 cm/hr×10^{-3} and enhancement ratio of 6.428±0.12. Skin irritations studies have shown ITM1 to be non irritant. ITM1 formulation was found to be stable for one month at room temperature. Based on results, it can be concluded that ITM1 formulation with maleic acid (1%) as permeation enhancer can provide good permeation of itraconazole for the treatment of basal cell carcinoma.

Keywords: Itraconazole, tara gum, kondagogu gum, basal cell carcinoma, organic acids

OPCEU025

FORMULATION AND EVALUATION OF EXTENDED RELEASE MATRIX TABLET OF SKELETAL MUSCLE RELAXANT

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The objective of this study was to formulate and evaluate extended release matrix tablet of Baclofen using HPMC K100M, K4M and Eudragit RSPO as a release modifier. Nine batches were prepared by using HPMC K100M, K4M, and Eudragit RSPO in concentration of 20%, 30% and 40% alone. The precompressional parameters showed satisfactory flow properties and compressibility. Matrix tablet were prepared by direct compression method and were evaluated for weight variation, thickness, friability, hardness, assay, in vitro dissolution, stability study and IR spectroscopy. All nine formulations showed acceptable pharmacopoeial standards. Among all the formulation studied, formulation F5 containing HPMC K100M having concentration of 30% showed extended release of drug for 12 hrs with cumulative percent release 99.50%. The kinetic treatment showed optimized formulation follows higuchi release kinetic model, governed by diffusion through swollen matrix showing fickian transport. No chemical interaction between drug and polymer was seen as confirmed by IR studies. It concluded that extended release matrix tablet of Baclofen containing 30% of HPMC K100M provide better option for extended release of drug.

Key words: Extended release, HPMC K100M, HPMC K4M, eudragit RSPO, baclofen

OPCEU026

AFREZZA TO TREAT DIABETES (INHALENT TECHNOSPHERE INSULIN)

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"AFREZZA" is a recent discovery which is the inhalant form of recombinant human insulin (RHI). It is available in unit doses packed in ampoules. These ampoules are placed in inhaling device through which the powder form of insulin is inhaled. This inhalation has to be taken 5 minutes before the meal. Mankind approved or accepted this formulation after many clinical trials. It was approved in 2013 after the third submission. US approved AFREZZA in 2014 under US Food & Drug Administration. And approved by Mankind for marketing in 2016. The results of clinical trials revealed that it had no inferiorities when compared to other form of insulin formulations like subcutaneous insulin injections as it was easy to administer as it is in the form of inhalation. It also showed rapid onset of action compared to other formulations that is within 45 minutes. It also had maximum bioavailability. Metabolism of this formulation was easy & fast. But, clinical trials of this formulation on patients suffering with pulmonary disorders like asthma & chronic obstructive pulmonary disorder showed adverse affects on long term usage, like pulmonary cancers. In other short term clinical trials, some of the patients (20%-25%) showed hypoglycemic conditions due to uncontrolled dose.

Manufacturing company of AFREZZA is "Sanofi". It was marketed by Sanofi in the year 2016. It showed better results compared to conventional insulin & it is widely accepted for treating diabetes worldwide.

Key words: Afrezza, technosphere insulin, recombinant human insulin , diabetes , hypoglycaemia , pulmonary , mannkind

OPCEU027

PREPARATION AND EVALUATION OF ORAL FILMS USING ATOMOXETINE HYDROCHLORIDE

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The aim of the study was to develop a fast releasing oral polymeric film, prepared by using the solvent casting method, with good mechanical properties, instant disintegration and dissolution, an acceptable taste in the oral cavity. Atomoxetine hydrochloride , was incorporated to treat Attention deficit hyperactivity disorder(ADHD).different batches of films with drug were prepared using different combinations of polymers and plasticizers , HPMC LV grades, sodium alginate , guargum ,and plasticizers like PVA , SSG, CCS are used. The resultant films are evaluated for weight variation, content uniformity, assay, folding endurance, thickness, in vitro dissolution and in vitro disintegration. The formulations from preliminary trails were analyzed using Taguchi OA experimental design, which was applied to optimize the type of polymer, concentration of polymer, plasticizer, and sweetener based on their disintegration data at different levels. The optimized films disintegrated in less than 30s, releasing 90-100% within 5mins. The percentage release varied with type of polymer and concentration of polymer. The films made with combinations of HPMC and sodium alginate released 100% of drug release within 5mins, which was best among all.

Key words: Attention deficit hyperactivity disorder(ADHD),fast dissolving films, Atomoxetine hydrochloride, oral thin films

OPCEU028

ADVANCEMENT IN DRUG REPURPOSING AND REPOSITIONING

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The traditional approach to drug discovery involves de novo identification and validation of new molecular entities (NME), which is a time-consuming and costly process. Despite huge investment in drug discovery and development and explosive advancement in biological/informational technologies during past decades, the number of new drugs introduced into the clinic has not increased significantly. Drug repositioning or drug repurposing (terms often used interchangeably) is the process whereby alternative uses or indications are identified for a drug. Repurposing can encompass the pursuit of novel use of a drug during its normal development cycle or after a drug has been approved and marketed. More recently the term drug repositioning has been specifically applied to the use of compounds previously discontinued from development for novel indications. The increasing costs of drug development and reduced output in the pharmaceutical industry have led to renewed interest in drug repurposing as a potentially viable strategy to speed the delivery of new medicines to patients with unaddressed needs. Digoxin is a cardiac glycoside isolated from foxglove. It has a long history of use in the treatment of various heart conditions including heart failure and arrhythmia. From early 1980s, a few cohort studies with a small group of breast cancer patients have shown that the use of digoxin decreased the breast cancer recurrence and aggressiveness.

Key words : Drug repurposing, drug repositioning, digoxin, breast cancer

OPCEU029

ENHANCEMENT OF SOLUBILITY OF TELMISARTAN USING VARIOUS METHODS AND CARRIERS

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The aim of this study was to enhance the solubility of telmisartan for which solid dispersions with different carriers were prepared by hydrotropy, physical mixture and solvent evaporation method. The interaction studies of solid dispersions showed no interaction between the drug and the carrier. Hydrotropic solid dispersions prepared with urea showed enhancement in solubility by l7.42 folds and 99.14±0.69% release in 60 minutes in distilled water. The physical mixture of telmisartan and cross povidone showed enhancement in solubility by 9.71 folds and 68.38±1.47% release in 60 min in distilled water. The solvent evaporation method showed an increase in solubility by 12.28 folds and 99.76±1.95 % release in 60 minutes in distilled water and 99.78% release in 45 min in 0.1N HCL. The hydrotropic agent, urea was successful in improving the dissolution rate of telmisartan by hydrotropy method and crosspovidone improved the dissolution rate of telmisartan by solvent evaporation method.

Key words: Solid dispersion, solubility, carrier, hydrotropy

OPCEU030

PREPARATION AND EVALUATION OF BUCCAL BILAYERED TABLETS OF OLANZAPINE

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To develop bilayer buccal tablets of OLANZAPINE to enhance its bioavailability and reduce its dosing frequency. A batch prepared with ratio of Citric acid, pvp, Carbopol, peg6000 100mg drug layer and ethyl cellulose, methyl cellulose and precirol as backing layer compressed using tablet compression machine. The tablets were evaluated for invitro drug release, weight variation, thickness, surface ph and mucoadhesive strength. The optimized batch s11 has shown the maximum drug release of 98% within 2 hrs. Bilayered buccal tablet of Olanzapine have enhanced bioavailability. The different polymers used have shown good mucoadhesive strength, invitro drug release, and good mucoadhesive time. Keywords: Bilayer buccal tablet, olanzapine, mucoadhesive strength.

Key words: Olanzapine, bilayered tablets, mucoadhesive

OPCEU031

DRUG DELIVERY WITH CARBON NANOTUBES FOR IN VIVO CANCER TREATMENT

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Chemically functionalized single-walled carbon nanotubes (SWNT) have shown promise in tumor-targeted accumulation in mice and exhibit biocompatibility, excretion, and little toxicity. Here, we show in vivo SWNT drug delivery for tumor suppression in mice. We conjugate paclitaxel (PTX), a widely used cancer chemotherapy drug, to branched polyethylene glycol chains on SWNTs via a cleavable ester bond to obtain water-soluble SWNT-PTX conjugate. SWNT-PTX affords higher efficacy in suppressing tumor growth than clinical Taxol in a murine 4T1 breast cancer model, owing to prolonged blood circulation and 10-fold higher tumor PTX uptake by SWNT delivery likely through enhanced permeability andretention. Drug molecules carried into the reticuloendothelial system are released from SWNTs and excreted via biliary pathway without causing obvious toxic effects to normal organs. Thus, nanotube drug delivery is promising for high treatment efficacy and minimum side effects for future cancer therapy with low drug doses.

Key words: - SWNT (Single Tubed Nano Tubes), PTX- (Paclitaxel), EPReffect, PEG-PTX (Pegylated Paclitaxel), taxol, tumor targeted, novel drug delivery.

OPCEU032

USE OF NANOPARTICLES IN ORGAN TRANSPLANTATIONS

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Using Nanoparticles in drug-delivery system could reduce organ transplant complications by hiding the donated tissue from the recipient's immune system. Many organ transplants are performed each year, despite significant advances in the field, short-term and long-term organ rejection still poses a risk. T cells, the white blood cells that identify and attack foreign bodies, are reason for organ rejection. The most potent of these, known as effector memory T cells, are activated by a group of proteins known as human leukocyte antigens (HLAs) on the surface of endothelial cells lining the donated organ's blood vessels. Modern research can silence the proteins with small interfering RNA (siRNA), a double-stranded RNA that hinders the expression of targeted genes, however, the effects of siRNA last only a few days. A transplanted organ from a donor typically needs weeks to "heal" and reduce the risk of rejection. To give the siRNA more staying power, polymer-based nanoparticles carrying siRNA to the site of the graft and slowly releasing the drug can be used in drug delivery system. Nanoparticles can also be introduced into the donor organ before it is transplanted, so that only the organ is treated, not the whole body. Nanoparticles designed to have a slight positive charge to interact with the negative charge of the siRNA's nucleic acid are used. The nanoparticles present in the donated tissue significantly silenced the proteins' expression up to six weeks after transplantation. Additionally, there is no damage to the endothelial cells of untargeted organs.

Key words: Nanoparticles, T-Cells, human leukocyte antigens, siRNA, polymer-based nanopartcles, graft.

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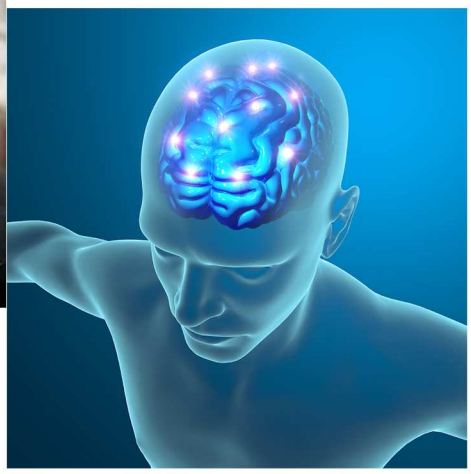

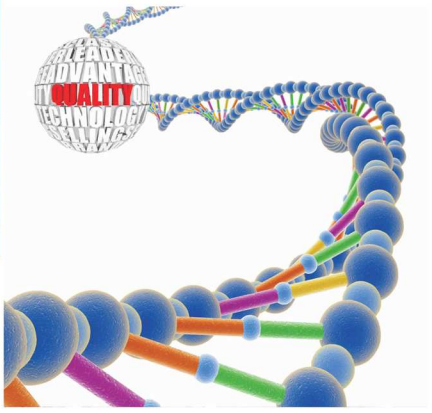

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OPCL001

PHYTOCHEMICAL INVESTIGATION AND PHARMACOLOGICAL SCREENING OF POLY HERBAL FORMULATION FOR ANTI DIABETIC ACTIVITY

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The present study was undertaken to evaluate the phytochemical and anti diabetic activity of ethanolic extract of *Nigella sativa, Syzygium cumini* and *Cyamopsis Tetragonaloba,* its *poly herbal formulation* in Streptozotocin induced diabetic rats. These ingredients are subjected to extraction with ethanol. These extracts are subjected to phytochemical investigations. The formulations are screened for Streptozotocin induced hyperglycemic activity at dose of 200 mg /kg and 400 mg / kg for 28 days. The blood glucose level measured on 0, 7^{th}, 14^{th}, 21^{st} and 28^{th} day of the experiment. The various parameters measured in anti-diabetic study included estimation of Total Cholesterol, Triglycerides, VLDL, HDL and LDL. Diabetes induction caused significant ($P<0.001$) hyperglycemia in all diabetic groups, oral administration of the extract and glipizide for 21 days significantly ($P < 0.001$) lowered the hyperglycemia of the experimental groups. The fasting blood glucose of the group treated with 400 mg/kg body weight extract lowered the glucose level from 290.68mg/dl to 179.17mg/dl and glipizide from 295.32mg/dl to 148.56mg/dl representing 78.15% and 73.83% reductions respectively. The effect on the fasting blood glucose is dose dependent. The ethanol extract of poly herbal formulation was tested on streptozotocin induced diabetes in Wister albino rats. Administration of extract produced a significant reduction in serum glucose, total protein, total cholesterol, triglycerides in STZ-induced diabetic rats. The presence of flavonoids and phenols is the possible reason for significant and dose dependent antidiabetic activity.

Keywords: Anti hyperglycemic, poly herbal formulation, diabetes mellitus

OPCL002

HYPERVITAMINOSIS – D, AN UNCOMMON REALITY!!!

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Just like any other disease, nutritional deficiencies pose a significant threat to a man's survival. Over the past decade, Vitamin D deficiency has taken a surge in India, contributing to significant burden on the healthcare sector. This has set off a trend among medical practitioners to prescribe vitamin D supplements empirically. Of late, the use of Vitamin-D supplements has increased because of its benefits; not knowing the effects of its intoxication. Physicians take a notice of Vitamin-D toxicity, only when hypercalcemia does not resolve. Fortunately, there exists a large gap between its therapeutic and toxic dose. As the cost of establishing laboratory confirmation is high, people are vulnerable to its toxic effects and exposure to highly untoward scenarios. As the prevalence of Vitamin-D in a developing country like ours is very high, and as not everyone can bear the expenses incurred by the laboratory investigations, empirical therapy should not involve prescribing high doses of Vitamin-D. Moreover, serum calcium levels of at least those who are at high risk should be monitored. Vitamin D deficiency, though common and known, still face several challenges among the medical community in terms of proper diagnosis and correction. However, the possibility of hypervitaminosis-D can be prevented by routine and careful monitoring of patients and assuming judicious approaches, which would ultimately reduce the risk of this complication.

Keywords: Vitamin D, hypercalcemia, hypervitaminosis D, supplements.

OPCL003

ANTI-LEUKEMIC ACTIVITY OF METHANOLIC EXTRACTS OF SEEDS OF *NIGELLA SATIVA* ON BENZENE-INDUCED LEUKEMIA IN FEMALE WISTAR RATS.

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Leukemia is a malignant progressive disease in which the bone marrow and other blood-forming organs produce increased numbers of immature, abnormal leucocytes. Female wistar rats were used to study the activity of Methanolic extract of seeds of *Nigella sativa* [MENS] on benzene induced leukemia. Five groups of rats were taken [normal, control group, standard group, and higher and lower dose group]. Each group contains 4 rats. In this study we have employed benzene for induction of leukemia. Benzene was injected intravenously in rats (tail) on every 2nd day, for 21 days. Cyclophosphamide (10mg/kg) was used as the standard drug, injected intraperitoneally into rats on alternate days for 21 days in standard group. After complete phytochemical screening of seeds of *Nigella sativa*, its Methanolic extract was selected because of its richness in flavonoids and phytosterols (anticancer agents). A higher and lower dose of MENS (500 mg/kg and 1000 mg/kg) was calculated by carrying out the acute toxicity studies on albino mice (as per OECD guidelines), which were administered by gavage every day, for 21 days to two different groups of rats. After thorough evaluation of all the hematological parameters of rats, it was found that MENS have successively treated leukemia in rats up to considerable extent.

Keywords: MENS (Methanolic extract of seeds of Nigella sativa), cyclophosphamide.

OPCL004

NECROTIZING FASCIITIS

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Necrotizing fasciitis (NF), commonly known as flesh-eating disease, is an infection that results in the death of the body's soft tissue. Necrotizing fasciitis has been described since the time of Hippocrates and first came into use in 1952. Group A strep is considered the most common cause of necrotizing fasciitis. The symptoms of necrotizing fasciitis usually occur within the first 24 hours of infection. Typically the infection enters the body through a break in the skin such as a cut or burn. It is a severe disease of sudden onset that spreads rapidly and the symptoms include red or purple skin in the affected area, severe pain, fever and a fast heart rate. Medical imaging is helpful to confirm the diagnosis. Prevention is by good wound care and handwashing. It is usually treated with surgery to remove the infected tissue and use of intravenous antibiotics. Often a combination of antibiotics such as penicillin G, clindamycin, vancomycin, and gentamicin are used for NF. Delays in surgery are associated with a higher risk of death. Surgical debridement is the mainstay of treatment for necrotizing fasciitis. Hyperbaric oxygen treatment (HBOT) is sometimes used to treat necrotizing soft tissue infection in combination with antibiotics and debridement.The literature suggests that HBOT can reduce mortality when used as part of an aggressive treatment regimen for necrotizing fasciitis. Based on the result it can be concluded that maintaining strict asepsis during any surgical procedure and regional anaesthesia techniques is vital in preventing the occurrence of the disease.

Key words: Flesh-eating disease, group A, streptococcus (group A strep), surgical debridement, hyperbaric oxygen treatment (HBOT).

OPCL005

MITOCHONDRIAL REPLACEMENT THERAPY-"THREE PARENT BABY"

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The mitochondria contained in eukaryotic cells have their own DNA and heritable mutations in mitochondrial DNA (mtDNA) can cause a variety of disorders in humans. The bulk of mother's genome is tangled in the egg's nucleus, but separate strands of DNA floating in the egg cell build the body's energy generators, Mitochondria. A new therapy, Mitochondrial Replacement Therapy (MRT) is currently being developed to address these mitochondrial disorders by eliminating the mutated DNA Mutations in mitochondrial DNA passed down by mother can cause life- threatening diseases in her child. By combining the nuclear DNA of mother with the unmutated mtDNA from an egg donor, it might be possible to prevent a child from inheriting the disease. The two main MRT techniques are pronuclear transfer and spindle-chromosomal complex transfer. In pronuclear transfer, the pronuclei from zygote affected by mtDNA mutation are transferred to an enucleated normal zygote. In spindle-chromosomal complex transfer, the genetic material from an oocyte affected with mtDNA mutation is inserted into the cytoplasm of a donar oocyte than contains healthy mitochondria. A third method, polar body genome transfer, attempts to increase the efficiency of above two techniques by using polar bodies to supply the genetic material. While MRT is legally and ethically controversial, it has recently been implemented successfully in clinical setting.

Keywords: Pronuclear transfer, spindle-chromosomal complex transfer, polar body genome transfer.

OPCL007

HEMORRHOIDS

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Hemorrhoids are swollen, inflammed veins around the anus or lower rectum. It is commonly known as piles. They are either inside the anus or under the skin around the anus. They often result from straining to have a bowel movement. Multiple factors have been claimed to be the etiologies of hemorrhoidal development, including constipation and prolonged straining. Other factors include pregnancy, aging and chronic constipation or diarrhea. Hemorrhoids are very common in both sexes, peak prevalence occurred between age 45-65 years. Therapeutic treatment of hemorrhoids ranges from dietary and lifestyle modification to radical surgery, depending on degree and severity of symptoms. In most instances, hemorrhoids are treated conservatively, using many methods such as lifestyle modification, fiber supplement, suppository-delivered anti-inflammatory drugs, and administration of venotonic drugs. Non-operative approaches include sclerotherapy and, preferably, rubber band ligation. An operation is indicated when non-operative approaches have failed or complications have occurred. Several surgical approaches for treating hemorrhoids have been introduced including hemorrhoidectomy and stapled hemorrhoidopexy, but postoperative pain is invariable. Some of the surgical treatments potentially cause appreciable morbidity such as anal stricture and incontinence.

Keywords: Hemmorrhoids, constipation,hemorrhoidopexy.

OPCL008

PYLORIC STENOSIS

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Infantile hypertrophic pyloric stenosis is a relatively common condition which causes narrowing of the opening from the stomach to the first part of the small intestine (the pylorus), and there is some recent evidence that the incidence is increasing in this country. This manifests with projectile vomiting, which if persistent could lead to further complications like dehydration, metabolicalkalosis, change in bowel movements etc.

The causes of pyloric stenosis are unknown, but genetic and environmental factors like consumption of alcohol, erythromycin in the last stages of pregnancy might play a role. It usually isn't present at birth and probably develops afterward the problem is more common in baby boys. Diagnosis is made on the basis of physical examination and ultrasound. Treatment involves administration of oral atropine and surgery. Operation has now superseded medical treatment as the treatment of choice but assessment and correction of fluid and electrolyte imbalance is essential. As the exact cause is unknown, focus should be more on prevention and there is a need of further research to be made in this area to provide timely care and prevent any casualities.

Keywords: Stenosis, metabolic alkalosis.

OPCL010

PROFILE OF NERATINIB AND ITS POTENTIAL IN THE TREATMENT OF BREAST CANCER.

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The HER (ErbB) receptor tyrosine kinase receptors are implicated in many cancers and several anti HER treatment are now approved .In recent years, a group of compounds that bind irreversibly to adenosine triphosphate binding pocket of HER receptor have been developed. One of these compounds, neratinib, as passed preclinical phase and is currently undergoing various clinical trials .This manuscript reviews the preclinical as well as clinical data on neratinib. As per pan HER inhibitor, this irreversible tyrosine kinase inhibitor, binds and inhibits the tyrosine kinase activity of epidermal growth factor receptors, EGFR (or HER1), HER2 and HER4, which leads to reduced phosphorylation and activation of downstream signaling pathways. Neratinib has been shown to be effective against HER2over expressing or mutant tumour in -vitro and In- vivo. Neratinib is currently being investigated in various clinical trials in breast cancer and other solid tumours including those due to mutation. Earlier studies have already shown promising clinical activity for neratinib .However, more translational research is required to investigate biomarkers that could help to predict response and resistance for selection of appropriate patients for treatment with neratinib, either as mono therapy or in combination with other drugs.

Keywords: Neratinib ,HKI 272,pan-HER inhibitor, irreversible tyrosine kinase inhibitor , HER (ErbB) ,breast cancer.

OPCL011

DELAFLOXACIN: DESIGN, DEVELOPMENT AND POTENTIAL PLACE IN THERAPY.

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Delafloxacin (DLX) is a new fluoroquinolone approved in june 2017, which has shown a good in-vitro and in-vivo activity against major pathogens associated with skin and soft tissue infections and community –acquired respiratory tract infections.DLX also shows good activity against abroad spectrum of micro-organisms, including those resistant to other fluoroquinolones, as methicillin-resistant Staphylococcus aureus. Its pharmacokinetic properties and excellent activity in acidic environments make DLX an alternative in the treatment of these and other infections. In this manuscript, a detailed analysis of this new fluoroquinolone is performed, from its chemical structure to its in vivo activity in recently published clinical trials. Its possible place in the current antimicrobial outlook and in other infectious models is also discussed.

Keywords: Delafloxacin, fluoquinolones, methicillin-resistant staphylococcus aureus, therapy.

OPCL012

FOOD - DRUG INTERACTIONS.

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The effect of drug on a person may be different than expected because that drug can interact with another drug (drug-drug interaction) ,food ,beverages, dietary supplements the person is consuming (drug-nutrient / food interactions)or disease the person has (drug-disease interaction).A drug interaction is a situation in which a substance affect the activity of a drug, i.e. the effects are increased or decreased, or they produce a new effect that neither produces on its own. These interactions may occur out of accidental misuse or due to lack of knowledge about the active ingredients involved in the relevant substances regarding food-drug interactions. Physicians and pharmacists recognize that some foods and drugs ,when taken simultaneously, can alter the body's ability to utilize a particular food or drug ,or cause serious side effects. Clinically significant drug interactions, which pose potential harm to the patient, may result from changes in pharmaceutical, pharmacokinetic or , pharmacodynamic properties. Some may be taken advantage of, to the benefit of patient, but more commonly drug interaction result in adverse drug events. Therefore it is advisable for patients to follow the physician and doctors instructions to obtain maximum benefit with least food-drug interactions. The literature survey was conducted by extracting data from different review and original articles on general or specific drug interactions with food. This review gives information about various interactions between different foods and drugs and will help physicians and pharmacists prescribe drugs cautiously with only suitable food supplement to get maximum benefit for the patient.

Keywords: Food-drug interaction, cytochrome P450,drug, chelation.

OPCL013

MILTEFOSIN– ALEISHMANIAC DRUG

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Leishmaniasis, one of the most dangerous neglected disease caused by over 20 different species of the protozoan parasite genus leishmania, host factors and immunodeficiency responses. It is a complex of diseases with clinical and epidemiological diversity. There is an epidemic of cutaneous Leishmaniasis in Afghanistan and Pakistan and of visceral leishmania in India and Sudan. It is noticed in 88 tropical and subtropical countries, 350 million people at risk and accounts 2 million cases annually all over the world. There are significant differences in the sensitivity of those 20 species both to the standard drugs; for ex: pentavalent antimonials and miltefosin and those on clinical trial, for ex: paramomycin . Over 60% of patients with visceral Leishmaniasis in Bihar state, India , do not respond to treatment with pentavalent antimonials , due to acquired resistance .This disease can be potently treated by many drugs but the most effective and first line drug whose side-effects can be remissible is miltefosin. Miltefosin, originally formulated and registered as a topical treatment for cutaneous cancers. On further research it was proved that miltefosin was using in the treatment of 3 main forms of Leishmaniasis. The drug is widely distributed in body organs and not metabolized by Cytochrome P450 enzymes in vitro. The drug is embryo toxic and fetotoxic in rats and rabbits and teratogenic in rats but not in rabbits. It is therefore contraindicated for use during pregnancy and contraception is required beyond the end of treatment in women in Child-bearing age.

Keywords: Cutaneous, visceral miltefosin , pentavalent , cytochrome .

OPCL015

BRAIN CELLS FOUND TO CONTROL AGING

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Scientists of medicine have found that stem cells in the brains hypothalamus governs how fast ageing occurs in the body. The findings made in mice, could lead to new strategies for warding off age-related diseases and extending lifespan. The hypothalamus was known to regulate important processes including growth, development, reproduction, and metabolism. Researchers found that it also regulates ageing throughout the body. In animals, the treatment slowed or reversed various measures of ageing. Now the researchers are trying hard to identify particular populations of mRNAs and perhaps other factors secreted by stem cells that are responsible for anti-ageing effects. A first step towards possibly slowing ageing process and age related diseases. The researchers extracted mRNA-containing exosomes from hypothalamic stem cells and injected them into the cerebrospinal fluid of two groups of mice: middle-aged mice whose hypothalamic stem cells had been destroyed and normal middle-aged mice. This treatment significantly slowed aging in both groups of animals.

Keywords: Stem cells, mRNA-containing exosomes, anti-ageing effects, Extending lifespan.

OPCL016

LIFE AFTER HEART ATTACK

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Myocardial infarction (MI), commonly known as a heart attack occurs when blood flow decreases or stops to a part of the heart, causing damage to the heart muscle. The most common symptom is chest pain or discomfort which may travel into the shoulder, arm, back, neck, or jaw. Often it is in the center or left side of the chest and lasts for more than a few minutes. The discomfort may occasionally feel like heartburn. Other symptoms may include shortness of breath, nausea, feeling faint, a cold sweat, or tired feeling. Some studies prove that women are more likely to get a heart attack than compared to that of men. Women (85%) experience early symptoms than men (72%). Risk factors include high blood pressure, smoking, diabetes, lack of exercise, obesity, high blood cholesterol, poor diet, and excessive alcohol intake, among others. The complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI. The chances for a second attack may depend on lifestyle and age of a person. Physical activity can reduce the risk of cardiovascular disease. Keeping a healthy weight, drinking alcohol within the recommended limits, and quitting smoking reduce the risk of cardiovascular disease. Fortunately, MI is a preventable medical condition. Therefore, individuals with high risk should be informed about the probability of getting one and ways to identify before they actually become its victim. It is noteworthy that MI sends warning signal one week before and as not many are aware, it's the physicians duty to educate the patient. Nevertheless this should be a part of continuing medical education (CME) for the doctors too.

Keywords: Chest pain, Heartburn, Atherosclerotic plaque , Continuing medical education (CME).

OPCL018

ANIMAL MODELS

(MOUSE AND ZEBRA FISH)

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An animal sufficiently like humans in its Anatomy, Physiology or response to pathogen to be used in medical research in order to obtain results that can be extrapolated to humans medicines. Current examples of animal research in medicines are Mouse for the study of Diabetes, Paralysis and Cancer and also the emerging Zebra fish for the study of TB, Muscle dystrophy and Epilepsy. Although every animal has its own specificity but whenever possible we can go for the substitution of animal models in order to make the research easier and economical.

Keywords: Tuberculosis (TB), Zebra fish ,Epilepsy (Seizures).

OPCL020

TEIXOBACTINA RESISTANT TO ANTIBIOTIC RESISTANCE

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Antibiotics serve as a potential source for killing of bacteria which causes infectious diseases. Bacteria fights with each other or with drugs by secreting chemicals which make them resistant to antibiotics, Hence environmental microbes serves as a rich source of antibiotics but most of the bacteria are unable to grow in laboratory conditions. Due to this the science of antibiotics had not been moving forward due to lack of techniques for the development of antibiotic and rapid emergence of antibiotic resistance since decades. Thus we need special techniques to grow bacteria outside their natural environment. One such novel technique which has developed now is Chip technology which led to discovery of new antibiotic "Teixobactin" from soil bacteria and the discovery of teixobactin presents a promising opportunity to treat chronic infections and for the development of other potential antibiotics. The most remarkable features of this antibiotic which we focus here are its excellent way of isolation from *Eleftheria terrae* which grows in soil using iChip technology, its effectiveness against Mycobacterium tuberculosis, Methicillin-resistant *Staphylococcus aureus*, *Clostridium difficile*, and other dangerous pathogens, most importantly its resistance to antibiotic resistance and finally few limitations of teixobactin.

Key words: Teixobactin, iChip technology, *Eleftheria terrae*, Antibiotic resistance.

OPCL021

GENE THERAPY THROUGH SKIN

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The introduction of normal genes into cells of skin in place of missing or defective ones in order to correct genetic disorder is called gene therapy through skin. Gene therapy through skin could treat many diseases, like diabetes, obesity using CRISPR and skin grafts. In case of diabetes due to this insulin levels are decreased resulting in reducing weight, and helping in solving many other diseases. In case of obesity engineered epidermal progenitor cells can correct diet-induced obesity and diabetes," can prove that they survive long term in wild-type mice with intact immune systems in which more than 80 percent success rate with skin transplantation is observed .Diabetes is more focused because it is a common non-skin disease . It can be treated by the strategic delivery of specific proteins. The researchers inserted the gene for glucagon-like peptide 1 (GLP1), a hormone that stimulates the pancreas to secrete insulin. This extra insulin removes excessive glucose from the bloodstream, preventing the complications of diabetes. Thus cutaneous gene therapy with inducible expression of GLP1 can be used for the treatment and prevention of diet-induced obesity and pathologies. Skin progenitor cells are a perfect fit for gene therapy. Human skin is the largest and most accessible organ in the body. It is easy to monitor. Transplanted skin can be quickly removed if necessary. Skins cells rapidly proliferate in culture and can be easily transplanted. The procedure is safe, minimally invasive and inexpensive. This is review of an article which has been experimented in University of Chicago Medical Centre, USA. Article published on August 3, 2017.

Key words: Progenitor c n8ells, engineered skin graft, GLP-1.

OPCL022

SCOPE OF TIDEGLUSIB IN TREATMENT OF OSTEOPOROSIS AND CLEIDOCRANIAL DYSPLASIA

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Osteoporosis and Cleidocranial dysplasia are the major disorders related to bone. Both of these disorders are characterized by either reduction in density, size or shape of the bone. Tideglusib is a potent GSK-3β inhibitor used in the treatment of Alzheimer's disease and progressive supranuclear palsy. Sustained oral administration of the compound to a variety of animal models decreases tau hyperphosphorylation, lowers brain amyloid plaque load, improves learning and memory and prevents neuronal loss. However recent studies demonstrated the ability of tideglusib to inhibit GSK-3β near teeth thereby enhancing the reformation of dentine. Further testings has outlaid the role of GSK-3β in diminishing the activity of Runx-2 enzyme leading to cleidocranial dysplasia which was reversed by GSK-3β inhibitor. It was also observed that GSK-3β inhibitor when given to Alzheimer's patients suffering with osteoporosis showed its therapeutic action on Alzheimer's by inhibiting synthesis of Tau protein and osteoporosis by an unknown mechanism. Based on these facts, further studies are being progressed to analyze the scope of tideglusib in treatment of Alzheimer's associated and non associated osteoporosis and in cleidocranial dysplasia.

Key words: Tideglusib, GSK-3β, Alzheimer's, Cleidocranial dysplasia, Runx-2, Osteoporosis.

OPCL023

CONVERSION OF ANY BLOOD INTO UNIVERSAL DONOR TYPE BY USING a-GALACTOSIASE ENZYME OF GREEN COFFEE BEANS

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In the year 1900, Karl Landsteiner discovered why certain blood transfusions were negative while the others could be unsuccessful. He discovered the ABO system of blood group by mixing the red cell and serum of each of his staff. In transfusion medicine, the ABO blood group system is considered as one of the most important blood group system. A and B antigens play a very important role in the blood system as the differences in the blood groups are majorly due to these antigens. Antigens are nothing but the different glycoproteins present on the red blood cells of the individuals based on their blood group. The 'O' blood group is compatible with any blood group as it has no antigens and it is known as the universal donor. Today many lives are lost due to these incompatibilities in blood groups because of the shortage of a particular group of blood. We can save their lives, if we are able to remove the antigens on the A, B and AB blood groups and convert them to O blood group, as it is the universal donor. The a-galactosidase enzyme in the green coffee beans is capable of consuming the glycoprotein moiety on the red blood cells. As a result, there are no antigens present and the blood group turns to O. Thus A, B and AB blood group can be converted to O blood group. This can save many lives mainly of those suffering from thalassemia and haemophilic disorders.

Key words: Transfusion, antigens, glycoproteins , a-galactosidase.

OPCL024

NEW THERAPEUTIC APPROACHES TO THE MANAGEMENT OF RHEUMATOID ARTHRITIS.

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Rheumatoid arthritis (RA) is a common disease that affects up to 1% of the population, and causes significant morbidity and early mortality. Current therapies have various degrees of efficacy, but toxicity frequently limits their long-term use. The etiology of RA is unknown; however, in the last 10 to 15 years significant advances in molecular technology have provided a greater understanding of the pathogenesis of the disease. This has led to the development of new approaches to the treatment of RA. The objective of this review is to describe the different therapeutic approaches with biological agents that are either being utilized or are under development. Some of these products reflect the evolving capacity for the biotechnology industry to synthesize and humanize therapeutic agents: anti-tumor necrosis factor (TNF), cyclooxygenase type 2 inhibitors, adhesion molecules, T cells, B cells, cytokine/receptor, chemokines, angiogenesis, oral tolerance antigens, co stimulatory molecules, new disease-modifying anti-rheumatic drugs, bioelectric therapy, alpha monoclonal antibodies (moab). Anti-cytokine treatment include other interesting approaches to interfere with on-going inflammatory processes, such as the use of recombinant human interleukin (IL)1 receptor antagonist, or recombinant human IL10. . Continuing research into the pathogenesis of RA will undoubtedly identify even more effective therapeutic approaches for the management of this disease in the future. T cell co-stimulatory blockade, induction of apoptosis in the synovial tissue, and gene therapy could represent future strategies in rheumatoid disease.

Key words: Rheumatoid Arthritis, anti-TNF, Adhesion molecules, Bioelectric therapy.

OPCL025

BCG: A POTENTIALGAME CHANGING TYPE I DIABETES VACCINE

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Type I diabetes mellitus (Type I DM) is a metabolic disorder characterized by chronic hyperglycemia which is the result of irreversible destruction of insulin secreting beta islet cells. It is suggested that autoimmune mechanisms, which occurs in any time with the effect of triggered environmental factors, play role in the pathogenesis, in patients with genetic predisposition. Until now, there is no way to control blood glucose level except; insulin, diet and exercise, so that the protective methods are more important. In pursuit of finding better remedy, recent study suggested that bacillus camlets Guerin (BCG) vaccine was primarily used as a prophylaxis for Tuberculosis showed a significant role in the treatment of diabetes type-1 (IDDM). Diabetes type-1 is an auto immune disorder in which the production of insulin is hindered due to the damage of pancreatic cells by the rogue T lymphocytes. Tumour Necrosis Factor (TNF) is a well-known cytokine released from Mycobacterium tuberculosis present in BCG vaccine and causes destruction of T lymphocytes. In animal models , It was observed that BCG vaccine when injected produced TNF which destroyed the rogue T lymphocytes resulting in decrease of high blood sugar levels there by acting as immune suppressing agent in treatment of auto immune Type -1 diabetes. Further studies are being designed to analyze the role of BCG vaccine in treatment of T- cell lymphoblastic leukemia, a resultant of abnormal increase in T-lymphocytes.

Key words: Type-1 diabetes, BCG vaccine, TNF, T-lymphocytes, T-cell lymphoblastic leukemia.

OPCL026

CAR T CELLS – (LIVING DRUGS)

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The immune system evolved to distinguish non-self cells from self cells to protect the organism. As cancer is derived from our own cells, immune responses to disregulated cell growth present a unique challenge. This is compounded by mechanisms of immune evasion and immune-suppression that develop in the tumor microenvironment. The modern genetic toolbox enables the adoptive transfer of engineered T cells to create enhanced anticancer immune functions where natural cancer-specific immune responses have failed. Genetically engineered T cells, so-called 'living drugs', represent a new paradigm in anticancer therapy. Recent clinical trials using T cells engineered to express chimeric antigen receptors (CARs) or engineered T cell receptors (TCRs) have produced stunning results in patients with relapsed or refractory hematological malignancies. In this Review we describe some of the most recent and promising advances in engineered T cell therapy with a particular emphasis on what the next generation of T cell therapy is likely to entail.Adoptive transfer of T cells genetically modified to express chimeric antigen receptors (CARs) targeting CD19 has produced impressive results in treating patients with B-cell malignancies. Although these CAR-modified T cells target the same antigen, the designs of CARs vary as well as several key aspects of the clinical trials in which these CARs have been studied.

Key words: CAR Living drugs, T Cell receptors

OPCL027

RAPID ARC THERAPY FOR CANCER TREATMENT

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Rapid arc is newly evolving state of the art of Stereotatic Radiotherapy; Rapid arc is also called as Volumetric Modulated arc. Radiotherapy,Photos rays are used for treating cancer. It treats the cancer eight times faster than the conventional ones and it sees the location of tumor in 3D before treatment and identifies tumors as small as 2mm, It is a "Image Guided, Intensity Modulated Radiation Therapy (IG-IMRT)",it delivers precise treatments in shorter times than conventional IMRT(Intensity Modulated Radiation Therapy), In IMRT the linear accelerator stops several times to deliver waves while rotating whereas Rapid arc does not stops the radiation waves, Rapid arc freely rotates 360 degrees around the patient , enabling the very small beams with varying intensity to be aimed at the tumor from multiple angle, Higher doses of radiations are delivered to hit the tumor harder and less radiations to surrounding healthy tissues, It is especially valuable for radiating tumors adjacent to vital organs. It is simple,fast, accurate, Time is reduced , Although it is costly but affordable. It is very effective and also assures that the tumor re-occurence is not seen.

Keywords: Rapid -arc therapy, cancer treatment, stereot radiotherapy, intensity modulated radiation therapy

OPCL028

AGE RELATED MACULAR DEGENARATION

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The term macular degeneration generally refers to age-related macular degeneration (AMD or ARMD), while similar changes that affect younger individuals are referred to as some macular dystrophies. Macular degeneration is a medical condition in which there is deterioration in the macula area of the retina, leading to a corresponding loss in central vision, which entails the ability to see fine details, to read, or to recognize faces. The macula area entails the light-sensitive cells at the center of inner lining of the eye (retina). In macular degeneration, this area of the retina may suffer thinning, atrophy, and in some cases, bleeding. This can result in loss of central vision. Macular degeneration is predominately found in elderly adults and is the leading cause of central vision loss (blindness, although not loss of peripheral vision) in the United States today, for those over the age of fifty years, as well as an important cause of blindness worldwide in the elderly. Other causes of decreased vision in the elderly include presbyopia (age related changes), cataracts, glaucoma, and diabetic retinopathy. Aspirin, as an anti-inflammatory agent, could prevent the inflammation and decrease the inflammatory damage, and might act as a deterrent for the progression of AMD. However, aspirin is an anticoagulant which might increase the risk of ocular hemorrhage in AMD patients. Decades ago, the use of aspirin was reported associated with decreased rates of CNV among AMD patients nevertheless recently, the association between aspirin use and increased risk of neovascular AMD was identified. Therefore, these current results should be challenged and acknowledged by well-designed, large-scale and long term follow-up studies. A consultation might be needed when aspirin is used in the neovascular AMD patients.

Keywords: Age related macular degeneration, Aspirin, neovascularization

OPCL029

KERATIN-THE SAVIOUR

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Keratin proteins from hair and wool fibers over the past century have led to the development of a keratin based biomaterials platform. They possess many distinct advantages over conventional bio-molecules, including a unique chemistry afforded by their high sulfur -content, remarkable biocompatibility, propensity for self-assembly and intrinsic cellular recognition. Likely-derived bio-molecules, keratins have intrinsic biological activity and biocompatibility. The spontaneous self-assembly of keratin solutions has been studied extensively at both the micro-scale and macro-scale levels. This phenomenon of self-assembly is evident in the highly conserved superstructure of the hair fiber and, when processed correctly, is responsible for the reproducible architecture, dimensionality and porosity of keratin-based materials In addition, extracted keratins are capable of forming self-assembled structures that regulate cellular recognition and behavior. These qualities have led to the development of keratin biomaterials with applications in wound healing, drug delivery, tissue engineering, trauma and medical devices. The ability of extracted keratin proteins to self-assemble and polymerize into complex three dimensional structures has led to their development as scaffolds for tissue engineering. Keratin hydro-gels derived from human hair have been shown to act effectively as a haemostatic agent in a rabbit model of lethal liver injury. This discusses the history of keratin research and the advancement of keratin biomaterials for biomedical applications. Thus research on keratin proteins may become savior in the near future.

Keywords: keratin; human hair protein, natural biomaterial, protein film, scaffold

OPCL 031

SCOPE OF CHELIDONIC ACID IN TREATMENT OF DEPRESSION, INFLAMMATION AND CANCER.

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Depression is usually accompanied by neuro-inflammatory reactions. Chelidonic acid, in particular, has shown anti-inflammatory effects. The objective of this study was to evaluate the anti-depressant effects of chelidonic acid and to discuss the potential mechanisms of a forced swimming test. Chelidonic acid was administered orally once a day for 14 days. On the 14th day, chelidonic acid resulted in a significant decrease in immobility time during the forced swimming test without alteration of locomotor activity, in an open field test. Chelidonic acid also increased the number of nissl bodies in the hippocampus. Brain-derived neurotrophic factor expression and extracellular signal-regulated protein kinase phosphorylation in the hippocampus were up-regulated by the administration of chelidonic acid. Chelidonic acid administration significantly increased the mRNA expression of hippocampal estrogen receptor-β. The levels of hippocampal interleukin (IL)-1β, IL-6, and tumor necrosis factor-α were effectively attenuated by the administration of chelidonic acid. In addition, chelidonic acid significantly increased the levels of 5-hydroxytryptamine (serotonin), dopamine, and norepinephrine compared with those levels for the mice that were administered distilled water in the hippocampus. These results suggest that chelidonic acid might serve as a new therapeutic strategy for the regulation of depression associated with inflammation.

Keywords: Depression, chelidonic acid, brain-derived neurotrophic factor, estrogen receptor-β, serotonin.

OPCL 033

BEVACIZUMAB IN OVARIAN CANCER: A CRITICAL REVIEW OF PHASE III STUDIES

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Bevacizumab (BV) is a humanized monoclonal antibody targeting vascular endothelial growth factor and it is the first molecular-targeted agent to be used for the treatment of ovarian cancer (OC). Randomized Phase III trials evaluated the combination of BV plus standard chemotherapy for first-line treatment of advanced OC and for platinum-sensitive and platinum-resistant recurrent OC. The trials reported a statistically significant improvement in progression-free survival but not in overall survival. Furthermore, BV effectively improved the quality of life with regards to abdominal symptoms in recurrent OC patients. Bevacizumab is associated with adverse events such as hypertension, bleeding, thromboembolism, proteinuria, delayed wound healing, and gastrointestinal events. However, most of these events can be adequately managed. The latest evidence for BV treatment of OC and selection of patients for personalized treatment.

Keywords: Ovarian cancer, thromboembolism, proteinuria

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OPAQ001

A NEW RP-UPLC METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF ATAZANAVIR AND COBICISTAT IN PHARMACEUTICAL FORMULATION.

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The proposed work describes the development and validation for the simultaneous estimation of the Anti-HIV Atazanavir and the pharmacokinetic enhancer Cobicistat by using reverse phase ultra performance liquid chromatography. Efficient separation was achieved during a run time of 3mins with BEH Waters of column C_{18} (2.4 x 50mm, 1.8 mm) using 0.1% ortho phosphoric acid buffer and a mobile phase combination of 25% buffer: 75% methanol with a flow rate of 0.3 ml per min and detected using PDA detector at a wavelength of 242 nm, using Empower software. The retention times were 0.4, and 0.61 for Cobicistat and Atazanavir respectively. The developed RP-UPLC method was validated as per International Conference of Harmonization (ICH) guidelines with respect to system suitability, specificity, precision, accuracy, linearity, robustness, limit of detection and limit of quantitation. The %RSD values for Atazanavir and Cobicistat were found to be 1.368% and 0.421% respectively. The linearity of the calibration curves for both the analytes were in the desired concentration range (r^2>0.99). The method was also found to be stability indicating achieving all the parameters. Hence this RP-HPLC method can be used in the routine analysis of the drug combinations Atazanavir and Cobicistat in pharmaceutical formulations.

Keywords: RP-UPLC, Atazanavir, Cobicistat

OPAQ002

RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE ESTIMATION OF LENVATINIB IN SPIKED PLASMA

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A simple, accurate, rapid and precise isocratic RP-HPLC method was developed and validated for the estimation of the anti-cancer drug lenvatinib (used in thyroid cancer) in API and pharmaceutical formulation in spiked plasma. The analyte was extracted from plasma using acetronitrile by using LLE method. The instrument was WATER HPLC auto sampler, separation module 2695, photo diode array detector 996, Empower-software version-2. Chromatographic conditions were developed for the separation of lenvatinib in plasma by using YMC C18 Column (4.6×150mm), flow rate was 1ml/min, mobile phase ratio was (70:30 v/v) ACN: 0.1% OPA buffer pH 3. Detection wavelength was 240nm. The retention time was found to be 4.6. The % purity of lenvatinib was found to be 99.82%. The analytical method was validated according to ICH guidelines (ICH, Q2 (R1). and the acceptance criteria for accuracy, precision, linearity, robustness, limit of detection, limit of quantification and ruggedness were met in all cases. The linearity study of lenvatinib was found in concentration range of 100µg-500µg and correlation coefficient was found to be 0.999, % recovery was found to be 99.60% . Hence the developed RP-HPLC method can be used for routine analysis of lenvatinib in plasma in API and Pharmaceutical dosage forms.

Keywords: Lenvatinib, HPLC, Spiked Plasma.

OPAQ003

DETERMINATION OF SELECTED ANTIBIOTICS IN CHICKEN MUSCLE AND LIVER

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India is the fourth largest broiler producer after China, US and Brazil. There has been a phenomenal increase in broiler production use of between 2002 to 2012. Chicken is the most common type of poultry in the world. It is one of the most common and widespread domestic animals, with a total population of more than 19 billion as of 2011. Thus, indicating tremendous business opportunity in the market. But unfortunately this has lead to the unconstitutional production to gain profits; by increasing the quantity but not the quality of the chicken. The project was based on detection of Tetracycline, Fluoroquinolone in chicken muscle and liver sample. The major Tetracycline (oxytetracycline ,doxytetracycline,doxycycline) and Fluoroquinolone (ciprofloxacin, enrofloxacin) was characterized by using Chromatographic methods:

1) Thin layer chromatography 2) High performance liquid chromatography

The chicken samples from a region was collected and tested for Tetracycline and Fluoroquinolone some sample was found to be contain a small amount of ciprofloxacin. Hence these residues are greater than the levels set by EU.

Keywords :- Tetracycline, Fluoroquinolone, Ciprofloxacin, HPLC

OPAQ005

REVERSED PHASED CHROMATOGRAPHY AT ELEVATED PH BY KROMASIL (KR 100) COLUMN CASE STUDY - FACTORS FOR SUCCESS

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The modern need to analyze and purify basic pharmaceutical compounds is increasing day today in separation sciences. This creates a demand for silica based stationary phases to withstand long-term use at high pH. Performance and function of a Kromasil® C18 stationary phase have been evaluated during extended periods of time at elevated pH conditions.It is well known in reversed phase chromatography that the uncharged form of a compound is best suited for troubleless HPLC. Most basic drugs have pKa values of around 9.5. To keep basic substances uncharged they must be kept in an environment with pH higher than its pKa value. It is common practice to use a mobile phase pH that is up to two units higher that the pKa value of the analyte. Effort was made to confirm that 0.5-1.0 unit above the target dissociation constant indicates the best results simultaneously to separation technique and stabilized enhancement in long durability of stationary phases.

Keywords: HPLC , Kromasil ,PH

OPAQ006

HYPHENATED TECHNIQUE-IMMUNO CHROMATOGRAPHY

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Lateral flow assays (LFAs) are the technology behind low-cost, simple, rapid and portable detection devices popular in biomedicine, agriculture, food and environmental sciences. This type of assay has recently attracted considerable interest because of its potential to provide instantaneous diagnosis directly to patients. The lateral flow assay (LFA) is a paper-based platform for the detection and quantification of analytes in complex mixtures. The principle behind the LFA is: a liquid sample (or its extract) containing the analyte of interest moves without the assistance of external forces (capillary action) through various zones of polymeric strips, on which molecules that can interact with the analyte are attached.In recent years, the major advances in LFA development have included novel signal-amplification strategies, applications of new labels, improved quantification systems and simultaneous detection**.**

Keywords : Lateral flow assays, Analytes, quantifications, low cost, rapid process

OPAQ008

DEVELOPMENT AND VALIDATION OF CHEMOMETRIC ASSISTED FTIR SPECTROSCOPIC METHOD FOR SIMULTANEOUS DETERMINATION OF MONTELUKAST SODIUM AND FEXOFENADINE HYDROCHLORIDE IN PHARMACEUTICAL DOSAGE FORMS

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A simple, economic, eco-friendly and reliable method has been developed for the simultaneous estimation of montelukast sodium and fexofenadine hydrochloride in pharmaceutical dosage forms by using chemometric assisted Fourier Transform Infrared (FTIR) Spectroscopy. IR spectroscopy is most often used for qualitative identification, but quantitative determination by using FTIR is an economic, rapid technique which is cost effective as there is less consumption of solvents and chemometrics helps to identify and understand patterns in large or complex data sets easily in the analysis. The method involves preparation of solid pellets of montelukast sodium and fexofenadine hydrochloride using KBr with the aid of geometric mixing and direct measurement using reduced path length cell. The spectra were measured in absorbance mode and the equipment was configured to collect spectra at 8cm^{-1} resolution. The spectra were collected between 4000cm^{-1} and 450cm^{-1}. The infrared spectra showed different peaks with base line correction, among which intense, clear and proportionate peaks were selected at 1704cm^{-1}, and 3421cm^{-1} corresponding to C-O stretching and OH-group for montelukast and fexofenadine respectively for quantitative estimation were assessed using chemometrics. Beer-Lambert's law was obeyed over the concentration range of 5-25 µg/mg for montelukast and fexofenadine. The developed method was validated according to ICH guidelines. The validation parameters like precision, accuracy, limit of quantitation (LOQ), limit of detection (LOD) were determined and were found to be within the limits. The method can be applied further for the simultaneous estimation of pharmaceutical dosage forms.

Keywords: Montelukast, Fexofenadine, FTIR, Chemometrics, Method validation, ICH guidelines.

OPAQ009

HARNESSING OF INDUSTRIAL POLLUTANTS: A NOVEL APPROACH TOWARDS ECO-FRIENDLY INDUSTRIAL PRACTICE

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Air pollution and global warming are the two relative terms which are getting their spin day by day due to human activities in which the exhaust from chimneys from different industries being a major contributing factor. In the process of conversion of raw materials into final products in several industries, many combustion reactions occur resulting in release of various toxic gases (CO_2, $S0_2$, NOx and other pyrolysis products) into the atmosphere which contributes to a majority of health issues. The objective of current research is to design a machine which converts these gases into reusable acids and salts which can be utilized in various domains and thereby providing an unpolluted air for better health standards. The principle involves reaction of gases with water which were dissolved in it by creating temperature and pressure difference to yield respective acids. This principle was proved in laboratory by conducting a demo process of the machine, where, a chimney was setup using coal, firewood and kerosene as fuel. By heating the fuel mixture, gases were evolved which were passed through a condenser for cooling and finally, through a narrow nozzle into chilled water where they got dissolved by reacting with water and forming respective acids. The water was analyzed for its acidity by treating with barium hydroxide solution. Formation of a white precipitate of the salt of respective acids indicated presence of acids. The study suggests a suitable method to harness the common air pollutants and to contain their consequent health hazards. By this industrial practices can be performed in an eco-friendly manner.

Keywords: Air pollution, machine, toxic gases, water, acids.

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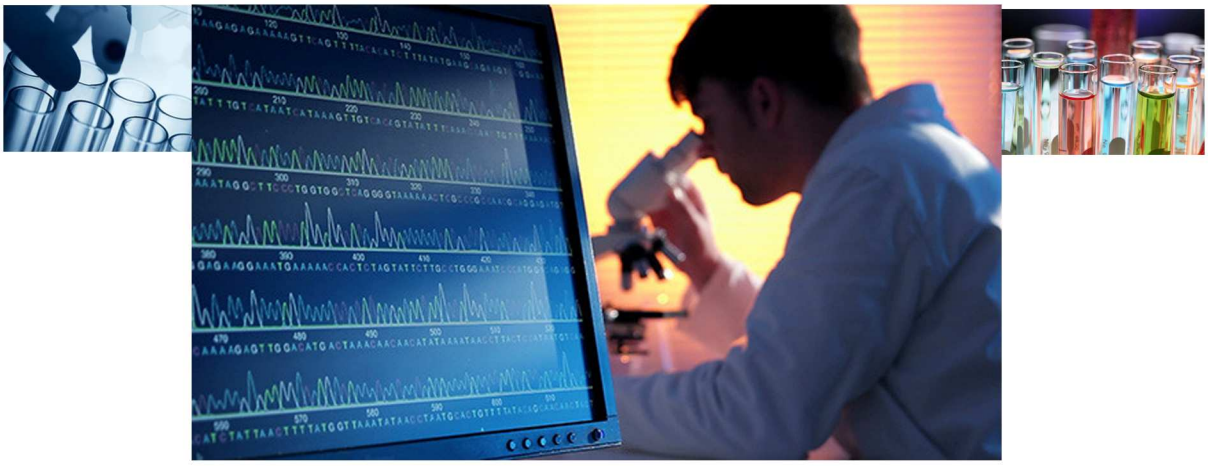
PHARMACEUTICAL CHEMISTRY



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OPCH001

SYNTHESIS, CHARACTERIZATION OF SOME NOVEL THIAZOLE INCORPORATED IMIDAZO [1, 2- A] PYRIDINES FOR ANTI-ANXIETY AND ANTI- INFLAMMATORY ACTIVITIES

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Thiazole in corporated Imidazo [1,2-a] pyridine derivatives have been synthesized by condensing 2-aryl imidazo [1, 2-a] pyridine carbaldehydes with thiosemicarbazide and followed by cyclization with different phenacyl bromides. Hybridization approach was followed while designing the target compounds. Imidazo [1, 2-a] pyridine is a bridge-head heterocycle and is considered to be an important scaffold and is the main heterocycle found in many of the marketed anti-anxiety and anti-ulcer drugs. As per literature survey, thiazole and its derivatives are found to be associated with various biological activities like anti-microbial, anti-inflammatory, anti-retroviral,anti-fungal and anti-neoplastic. As a part of our continuous effort to develop new anti-anxiety and anti-inflammatory agents with enhanced activity with minimum side effects, in the present study, we hereby report novel thiazole incorporated imidazo [1,2-a] pyridine derivatives which were designed through hybridization approach. Vilsmeir-Haack reaction of different2-aryl- imidazo[1,2-a]pyridines 1(a-j) gave 2-aryl-imidazo[1,2-a]pyridine-3-carbaldehydes 2(a-j).The condensation of carbaldehydes with thiosemicarbazide in absolute methanol afforded 2-aryl- imidazo[1,2-a]pyridine thiosemicarbazones 3(a-j) in good yields which on further cyclisation with different phenacyl bromides resulted into 2-aryl- imidazo[1,2-a] pyridine thiazole derivatives 4(a-j).The structures of all the synthesized compounds were confirmed on the basis of physical and spectral data. The compounds were screened for anti-anxiety and anti-inflammatory activities. Compounds 4b, 4d, 4f and 4j exhibited significant anti-anxiety activity while compounds 4a,4e and 4ishowed potent anti –inflammatory activity.

Keywords: Imidazo [1, 2-a] pyridines,imidazo(1,2-a) pyridine carbaldehydes, Thiophen-2-yl hydrazinoimidazo(1,2-a) pyridines, anti-anxiety activity, anti-inflammatory activity.

OPCH002

SYNTHESIS,CHARACTERIZATION OF SOME NOVEL QUINAZOLIN-4-ONE DERIVED SCHIFF BASES FOR ANTI-INFLAMMATORY &ANTI-BACTERIAL ACTIVITIES

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Quinazolinone is one of the important heterocycles found in many of the natural alkaloids and synthetic derivatives of Quinazolinones were shown to have important biological activities such as anti-cancer, analgesic, anti-inflammatory, anti-convulsant and anti-hypertensive. In recent years, they have gained lot of importance in cancer therapy due to their EGFR and VEGFR-2 inhibitor activities.On the other hand,Imidazo[1,2-a]pyridines are bridge-head heterocycles and are considered to be an important scaffolds in medicinal chemistry because of their diverse biological activities like anxiolytic,analgesic and anti-inflammatory , anti-convulsant,CDK1 & CDK2 inhibitor activity, anti-ulcer, anti-bacterialand amoebicidal.In our present study,some novel Quinazolinone derived Schiff bases were synthesized by condensing 4-oxo-3,4-dihydroquinazoline-2-carbohydrazide with imidazo [1, 2-a] pyridine carbaldehydes in DMF. The required 4-oxo-3,4-dihydroquinazoline-2-carbohydrazide was synthesised by condensation of anthranilamide with diethyl oxalate and followed by reaction with hydrazine hydrate(99%).The imidazo [1, 2-a] pyridine carbaldehydeswere synthesised fromimidazo (1,2-a)pyridines byVilsmeier-Haack reaction.The structures of the final compounds were confirmed on the basis of physical and spectral data. The compounds were screened for anti-bacterial and anti -inflammatory activities. Some of the synthesized compounds exhibited significant anti-inflammatory activity that is comparable to Diclofenac.

Keywords: 4-oxo-3,4-dihydroquinazoline-2-carbohydrazide, imidazo(1,2-a) pyridine carbaldehydes,Vilsmeier-Haack reaction, anti-bacterial activity, anti-inflammatory activity

OPCH003

CHEMISTRY OF WHISKY

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Whisky is one of the most popular spirit - based drink made form malted or sacrificed grains. Whisky consists of 40% alcohol. In human body whisky plays a role in maintance of healthy weight ,beneficial reduces risk of cancer, aids in cognitive performance, moderate intake reduce risks of stroke or heart attack, reduce risk of developing dementia and Alzheimer's diseases , useful in preventing illness and improving function of immune system. Whisky rich in ellagicacid, which is a very powerful anti oxidant and is responsible for health benefits form whisky. Because of all above functions made me to study the chemistry of whisky. So many people do not know much about whisky structure, synthesis, mechanismof actions, SAR, adverse effects . The world means water of life. It is also known asbeta-methyl -gama-octalactoneand synthesied commercially from crotonic acid & pentanal. Its mechanism of action mainly on GABA channels.whisky comprised of 100's of different compounds .it can be influenced by type of malt and grain used whilst its impossible to list all the compounds that contributes,here's look at some that impacts whisky s flavour such as whisky lactone ,phenolic compounds, aldehydes esters and other compounds Every coin has two sides whisky also comes under this category. I discussed above its therapeutic uses here the adverse effects of whisky is alcohol poisoning, impaired judgment, cirrhosis, addiction, pregnancy problems, interference with other diseases and medications etc.

Key words: whisky, Ellagicacid, Alzheimer's, dementia, GABA.

OPCH005

SYNTHESIS, MOLECULAR MODELING AND ANTI-CANCER ACTIVITY OF NEW COUMARIN CONTAINING COMPOUNDS

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A series of new coumarin containing compounds were synthesized from 4-bromomethyl coumarin derivatives 2 a,b and different heteroatomic systems 4a-e, 6a-d, 8, 10 via methylene thiolinker. Twenty-four compounds were screened biologically against two human tumor cell lines, breast carcinoma MCF-7 and hepatocellular carcinoma HePG-2 , using 5-fluorouracil as standard drug. Compounds 5h, 7d, 7h, 9a, 13a and 13d will show strong activity against both MCF-7 and HePG-2 cell lines.

Key words : Coumarin, Anti-cancer

OPCH006

ANTI–HIV DRUG DISCOVERY- WHERE DO WE STAND AND WHERE DO WE GO ?

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The human immunodeficiency virus (HIV) has now been established as the causative agent of the acquired immunodeficiency syndrome (AIDS) for over 27 years. During this time an unprecedented success has been achieved in discovering anti-HIV drugs as reflected by the fact that there are now more drugs approved for the treatment of HIV than for all other viral infections taken together. The currently Food and Drug Administration (FDA) approved anti-HIV drugs can be divided into seven groups: nucleoside reverse transcriptase inhibitors (NRTIs), nucleotide reverse transcriptase inhibitors (NtRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), protease inhibitors (PIs), fusion inhibitors (FIs), co-receptor inhibitors (CRIs), and Integrase inhibitors (INIs). This arsenal of drugs, which is used in combinations, has moved the prognosis of HIV patients from that of high morbidity and mortality to, for many at least, a chronic, manageable but still complex disease. However, the use of these drugs has been relatively limited by their toxicity, drug resistance development, and more worryingly, the fact that some newly HIV-infected patients carry viruses that are already resistant to the currently approved AIDS treatments. These issues along with drug-related side effects as well as, in some cases, poor tolerability of these drugs make it apparent that new anti-HIV drugs with acceptable toxicity and resistance profiles and, more importantly, new anti-HIV agents with novel mechanisms of action are clearly needed.

Key words: Anti HIV, FDA, CRI, NRTI

OPCH007

TO BE A DRUG OR NOT TO BE A DRUG: DRUG METABOLISM MAKES A DECISION

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Drug metabolism is one of the types of biochemical reactions. Metabolic reactions degrade the drugs and xenobioticsinto the metabolites usually through a specialized enzymatic system. Cytochrome P450s (CYP3A4, CYP2D6, CYP2C9, CYP1A2 and CYP2C19) are the major drug metabolizing enzymes. Drug metabolism often converts the lipophilic chemical compounds into more readily water-soluble polar products (Scheme 1). The liver is the principal organ of drug metabolism, although all the biological tissues of human body have some ability to metabolize drugs. In many cases, drug metabolism modulates the therapeutic profiles of given drug molecules in the following ways, i.e., (i) drug metabolism retains the therapeutic activity of given drug (e.g., phenacetin) (ii) drug metabolism converts the drug into inactive metabolite (e.g., morphine) (iii) drug metabolism enhances the therapeutic activity of given drug into more active metabolite(e.g. primidone) (iv) drug metabolism activates the inactivate pro-drug into active metabolite (e.g., hexobarbitone) (v) drug metabolism converts the toxic drug molecule into non-toxic metabolite (e.g., terfenadine) (vi) drug metabolism converts the active drug into toxic metabolite (e.g., diclofenac). These examples of drug metabolism indicate that drug metabolism is a decision maker in deciding the given molecule, to be a drug or not to be drug. Further, the basics of drug metabolism, types of metabolic reactions, mechanism, and its importance in drug development will be described during the poster presentation.

Key words: Drug metabolism, Cytochrome P450, Metabolites, Drug development

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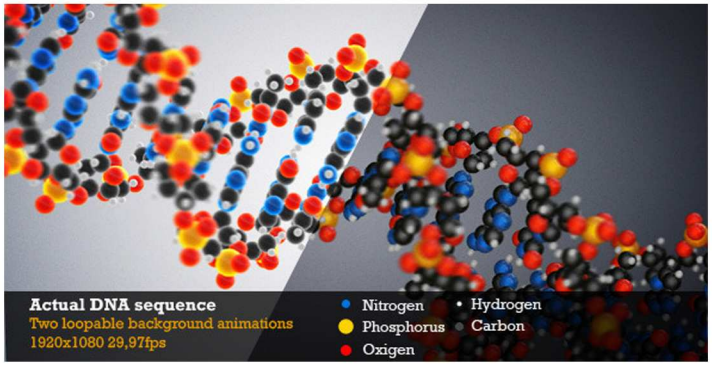

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OPCG001

PHYTOTHERAPY

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Phytotherapy is a science based medical practice and is distinguished from other traditional approaches such as medical herbalism which relies on an empirical appreciation of medical herbalism. This is about flora and fauna and their role in treatment of many diseases such as diabetes, arthritis, cancer and other chronic ailments. The herbal drugs used are raspberries, fenugreek, cranberries and shallots. Increased use of synthetic drugs is presented with many more adverse effects. This review is about eco friendly medical plants.

Key words: Phototherapy, Herbalism.

OPCG 002

MEDICINAL MUSHROOM: PHELLINUS LINTEUS AS AN ALTERNATIVE CANCER THERAPY

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Alternative cancer therapy with nutritional supplements containing a wide variety of herbal products is on the rise in western countries. Recent epidemiological studies have suggested that mushroom *Phellinus linteus* may prevent cancer, and it may have immune modulatory , anti-inflammatory, anti allergic, anti angiogenic and anti-oxidant effects. *Phellinus* mushroom is also known as sang hwang in china, Korea & meshima in Japan. Over 470 species have been identified & the most highly desired medicinal properties exist in just 2 species namely *Phelinus linetus & Phellinus igniarius*. Sang hwang has long been recognized in ancient text as the "mushroom of immorality" and widely used in Japan, Korea & China as a tonic for variety of ailments. The activity of *P.lineus* & its extracts is associated with polysaccharides[which activates innate as well as balance innate & adapative immunity], triterpenoids [increases liver metabolism, prevent brain &heart diseases], polyphenols [which activates anti-oxidant function & protection against aging damage], amino acids [repairs DNA/RNA damaged by age or illness, active free radical scavenging] & organic compounds such as hispolon [which activates anti tumour, anti oxidant, antiviral & apoptosis] and interfungins A [controls blood sugar by preventing protein glycation].

Key words: *Phellinus linetus*, complementary and alternative medicine, cancer.

OPCG 003

GRAPE SEED EXTRACT

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Grape seed extract [GSE] is derived from the ground up seeds of red wine grapes. The scientific name of red wine grapes is *Vitis vinifera*, Family vitacae .The grape seed along with their leaves and sop have been used in traditional treatments in Europe for thousands of years. Grape seed extract was developed in 1970. GSE contains of a natural anti-oxidant compounds i.e., oligomeric proanthocyanidins [opc] which has been studied in a various treatments or therapies for good health. OPCs are found in extracts of grape skin and seeds which are by products of wine preparation from wine industry.Today, GSE is used as a dietary supplement for various conditions, including for venous insufficiency to promote wound healing and reduce the inflammation. GSE is available in market as in form of capsules, tablets & liquid dosage forms. GSE is generally well tolerated well tolerated by human beings when taken in moderate doses. It has been tested up to 14 weeks in clinical studies of healthy people and found that is safe GSE helps for instance, balance of cholesterol, blood pressure, atherosclerosis &molecular degeneration .GSE used to treat tooth decay, protects against pathogens, improves night vision.As possessing wide range of medicinal values, GSE can be used for all individuals except for children and pregnant women & I conclude that better to start production &usage of GSE in India also.

Key words: *Vitis vinifera*, proanthocyanidins

OPCG 004

NEEM COATED UREA AN ECO-FRIENDLY APPROACHES

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"*Azadirachta indica*" (Neem) is a tree that is found in India & Indian sub continental regions. Neem tree can be very easily cultivated in dry, stony soils and requires little quantity of water but too much sunlight. Traditionally many Indian farmers used neem cake as fertilizers in their field. Neem leaves are also used to enrich the soil for crops. There is a lot of difference in neem coated urea and the plain one. In neem coated urea, they coat a layer of neem over the plain urea that increases the land fertility capacity that leads to the higher production of crops. The unwanted urea washed away with the water or gets diluted in the air as nitrogen. Nature neem urea coat is a special formulation of neem oil and humid acid which contains high quality of triterpenes. Use of neem urea coating powder helps to retard the activity and growth of the bacteria responsible for denitrification. It prevents the loss of urea in the soil. Nature Neem urea coat is also available as a dry powdered form of special neem seed cake that enables a free mix with urea. Saving of 10% of the losses of urea would amount to 2 million tons of urea or a reduction in subsidy component to the tune of RS. 1,700 crores per annum, proportional saving in the consumption of naphtha or natural gas, increased crop yields due to better nitrogen utilization, reduction in environmental pollution or ground water. In additional to the entire medical and environment benefits neem tree is also considered as insurance for a way to heaven. Evil spirits are kept away from home by keeping neem leaves at the entrance. Even the newly born babies are laid upon neem leaves so as to give them a protective aura. Thus neem tree indeed is a wonderful tree that has many benefits and without any side effects.

Key words: *Azadirachta indica*, Neem.

OPCG005

CLINICAL PHARMACOGNOSY

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Pharmacy is a branch related to health care services. According to the features of Pharmacognosy and clinical pharmacy two are distinctive and important subjects to pharmacy. "Clinical Pharmacognosy" has been introduced as a new integrated and multidisciplinary features between these two subject named Clinical Pharmacy and Pharmacognosy. Pharmacognosy which literally means studying medications of sources, has been a part of medicine art and sciences. To get a proper perspective about the science, which deals with plants, animals, mineral and other natural medication, it is extremely helpful to investigate the historical aspect of this science and to recognize the pioneers of this field. The study of medicine of plant origin includes the subject of botany, chemistry and pharmacology. The clinical pharmacy required optimum use of medication, therapeutically knowledge, counseling, clinical experience, therapeutic drug monitoring and disease good diagnosis. While clinical pharmacy significantly progressed, gap between this science, herbal and traditional medicine field.

Key words: Clinical Pharmacy, Clinical Pharmacognosy, Therapeutic drug monitoring.

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OPP001

ADVERSE DRUG REACTIONS OF ANTIBIOTICS

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Adverse reactions are the recognized hazards of drug therapy and they can occur with any class of drugs and many studies revealed that the incidence is more in the case of antibiotics. The main aim of this study was to detect and analyze Adverse Drug Reactions of antibiotics in a tertiary care hospital. A prospective observational study was carried out in the Department of General Medicine and Dermatology Venereology Leprosy (DVL) in Osmania General Hospital over a period of six months. A total of 100 ADRs were reported from 100 patients during the study period with the female predominance (72%) over males. The average age of the patients in the study was found to be 55-80 years. The majority of the ADRs occurred in the age group of 51-60 years. Number of ADRs was from General Medicine Departments in which the most affected organ systems were the GIT (22%) and the skin (19%). The antibiotic classes mostly accounted were Cephalosporins (16%), Amino glycoside (13%) followed by other. The severity assessment as per Modified Hart wig scale revealed that most of them were moderate, severe, mild and least significant ADRs reactions. Of the collected ADRs, 30% were definitely preventable (using the modified Shumock and Thornton method), according to Naranjo Scale the probability assessment was done which showed that the reactions were probably (89%), possible (6%). The results from this study show that ADRs in patients are a significant public health issue impose the significant burden on patients through prolongation of patients hospital stay increasing the admission rates, health care cost. Results show that Cephalosporins were extensively used in the Department of General Medicine. The number of drugs prescribed by generic names was low in General Medicine and Dermatology Venereology Leprosy (DVL). Hence effort must be made to encourage prescribing by generic names. Rational usage of antibiotics in the Department of General Medicine and Dermatology Venereology Leprosy (DVL) should be encouraged by following strict Hospital antimicrobial policy.

Keywords: Adverse drug Reactions, Antibiotics, Prospective study.

OPP002

PRECISION MEDICINE: THE PROMISE OF IMMUNOTHERAPY FOR THE TREATMENT OF CANCER

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The choice of therapeutic options for patients with cancer has changed dramatically in the last decade. Advances in understanding the role of driver mutations in mediating tumor growth, coupled with the development of molecular inhibitors for defined mutations has given rise to a new field of cancer therapy, termed as precision medicine or precision oncology. It identifies the right drug, for the right patient, at the right dose, at the right time, which is particularly important in cancer therapy. The variability in response towards the treatment and resistance to medication has been longstanding challenges in oncology, especially for development of new medications. The ability of next-generation sequencing (NGS) to analyze the landscape of genetic alterations can be effective to treat the diseases having highly complex and heterogeneous genetic composition such as cancer.NGS technology allows multiple genes to be analyzed simultaneously in one run and can provide enough depth of coverage to detect minor allele frequencies in a cost-effective manner. The identification of patients with oncogenic driver mutations provides the opportunity to use the genomic information of individual tumors to guide the selection of rational therapeutics that can improve the outcome of patients with advanced cancers. NGS technologies have revealed a more detailed molecular characterization of cancers helping to realize the great promise of precision medicine. Signaling pathway guided cancer therapy has gained success and off-label drug use based on NGS results has been successful. The use of cfDNA has brought new hopes to deliver the drug to patients at the right dose and the right time.

Key words: Precision medicine, cancer therapy, next-generation sequencing, solid tumor.

OPP004

PSYCHOTHERAPY OF DEPRESSION

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Depression is a mental health disorder. Some patients may experience different feelings. The patients who are untreated and undiagnosed can lead to complications and suicidal thoughts. This can interfere in their daily routine. Most of the people are affected by depression due to stress, emotional and physical problems. Now-a-days people are more affected by depression. Adults are effected with this condition called bipolar disorder, mood swings. They are hopeless and not interested in day to day activities. Anti depressant agents are used in treatment of depression. Psychotherapy & behavioral therapy are used to treat the patients. This can increase the success rate of treatment and is also reported to be more effective than treating with medication alone. Psychotherapy helps patients to understand the behaviors , emotions and ideas that contribute to his or her depression. It can play major role in treating bipolar disorder and schizophrenia. Psychotherapy is used as an alternative therapy because the evidence is clear that psychotherapy is an effective choice. Pharmacists play a major role in counseling depressive patients.

Key words: Depression, Psychotherapy, Behavioral therapy.

OPP005

HORRIFIC AILMENTS

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These are the list of diseases which are absolutely real which include stonemen syndrome (fibrodysplasia ossificans progressive), tree men syndrome (epidermodisplasia verruciformis), Butcher's warts, and trypophobia(fear of holes).These are mainly caused due to allergic reactions /some deficiency syndrome/adulteration in our daily diet. These disorders are treated by some cognitive behavioral psychotherapy, neurolinguistic programme.

Key words: Stonemen syndrome, Treemen syndrome, Butcher's warts and trypophobia.

OPP006

DRUG ADDICTION AND ABUSE

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Among the social and medical ills of the twentieth century, substance abuse ranks as on one of the most devastating and costly. The drug problem today is a major global concern. Almost all addictive drugs over stimulate the reward system of the brain, flooding it with the neurotransmitter dopamine. Euphoria and heightened pleasure produced is so compelling that the brain wants that feeling back again and again. However repetitive exposure induces widespread adaptive changes in the brain. As a consequence drug use may become compulsive. An estimated 4.7% of the global population aged 15 to 64 or 184 million people, consume illicit drug annually. Heroin use alone is responsible for the epidemic number of new cases of HIV/AIDS, Hepatitis and drug addicted infant born each year. Department of narcotic control (DNC) in Bangladesh reported in June 2008 that about 5 million drug addicts in the country & addicts spend at least 17 (Seventeen) billion on drugs per year. Among these drug addicts, 91% are young and adolescents population. Heroin is the most widely abused drugs in Bangladesh. For geographical reason like India, Pakistan and Myanmar; Bangladesh is also an important transit root for internationally trafficking of illicit drug. Drug abuse is responsible for decreased job productivity and attendance increased health care costs, and escalations of domestic violence and violent crimes. Drug addiction is a preventable disease.

Keywords*:* Drug abuse, drug addiction.

OPP007

USE OF SMARTPHONES AND SOCIAL MEDIA IN PHARMACY PRACTICE

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For healthcare organizations, social media can be used primarily for community engagement activities such as fund raising, customer service and support, the provision of news and information, patient education and advertising new services. The study also found that the widely used social media venues for physicians were online communities can read news articles, listen to experts, research new medical developments, network and communicate with the colleagues regarding patient issues. Patients can benefit from the social media through education, obtaining information, networking, performing research, receiving support, goal setting and tracking personal progress .Future research should further examine other financial, technological, Informational, ethical, legal and privacy issues surrounding the social media in health care. The use of mobile devices by health care professionals (HCPs) has transformed many aspects of clinical practice. Mobile devices have become common place in health care settings, leading to rapid growth in medical software applications (apps) for these platforms. Numerous apps are now available to assist HCPs with many tasks such as: information and time management; health record maintenance and access; communications and consulting; reference and information gathering; patient management and monitoring; clinical decision making; and medical education and training. Mobile devices and apps provide many benefits for HCPs, perhaps most significantly increased access to point-of-care tools, which has been shown to support better clinical decision making and improved patient outcomes.

Key words: Social media**,** health care professionals.

OPP009

GOOGLE GLASS TECHNOLOGY IN PHARMACY PRACTICE

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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.

Key Words: Google-Glass, Wearable computing, Eye-Tap Technology, Telemedicine.

OPP010

DEPRESSION-SILENT KILLER

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Depression is a state of prolonged sadness with symptoms like feelings of pessimism, hopelessness, Insomnia, Overeating or appetite loss, digestive problems etc. Etiology include several factors like genetic, emotional or environmental. According to WHO, depression is the most common illness worldwide and the leading cause of disability. Globally, the proportion of the population with depression is estimated to be 4.4%. As per NMHS(2015-16) in India, one in 20 (5.25%) people over 18 years of age have ever suffered (at least once) from depression amounting to a total of over 45 million persons in 2015. Between 2005 and 2015, the number of people living with depression worldwide increased by an estimated 18.4%. People with depression are 1.52 times more likely to die than the general population, as in the case of farmer suicides. Suicide is the second leading cause of death in 18-29 years age group. Recognition and appropriate diagnosis is imperative for prompt treatment to take place. The WHO report also said that inaccurate assessment was another barrier to effective care. "In countries of all income levels, people who are depressed are often not correctly diagnosed, and others who do not have the disorder are too often misdiagnosed and prescribed anti-depressants," it added. Patients should be suggested to consult psychiatrist. A suicide assessment should be performed for all depressed patients. Although there are effective treatments for depression, fewer than half of those affected receive such treatments WHO added.

Keywords: Sadness, Suicide attempt, Emotional stress, inaccurate assessment, leading cause of disability.

OPP012 (OMIS001)

BRAND HYDERABAD: FUTURE OF GLOBAL PHARMA

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The Indian pharmaceuticals market is the third and thirteenth largest in terms of volume and value respectively and one of the biggest producers and exporters of generics in the world which has given access to affordable drugs compared to their branded version.

Hyderabad , considered as the pharma capital of India contributes 30% of the total bulk drug production and 50% of the bulk drug exports, produces 30% of the vaccines made in the country.

Major contribution towards new drug discoveries has been coming from premier public sector research institutions like the Centre for Cellular and Molecular Biology (CCMB), Indian Institute of Chemical Technology, Genome Valley (also called the Vaccine hub of India) and MNCs like Novartis, Abbott and others, by introducing biosimilar/biological products and other drugs into the market. It is also a centre for pharmaceutical healthcare education and research and reputed for innovation in these areas, due to the presence of number of renowned pharmaceutical colleges and institutions like NIPER, building the future of pharmacy by generating skillful clinical and hospital pharmacists.

Medical Tourism: With the presence of super specialty hospitals offering world class treatments with internationally accredited medical facilities using the latest technologies, Hyderabad is becoming a preferred medical destination.

Conclusion: With upcoming Pharma city in and around our city, attracting many MNCs to set up R&D centers and manufacturing units will be a great contributor to add up to the growth and glory of our country and the whole world will look towards the Brand Hyderabad

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- G. Narayanamma Hospital, Gokavaram, Atmakur, Tq., Kurnool, Kurnool District.
- G. Narayanamma Pulla Reddy Respite Home for Mentally Retorted Women, Kurnool.
- Samskrutha Bhasha Prachara Samiti, Nampally Station Road, Abids, Hyderabad.
- Vignana Peetham (Orphanage), Kurnool.
- Bhakta Kannappa Gurukulam for Welfare of Tribal Children, Gokavaram, Kurnool District.
- Seshacharyulu Hospital, G. Pulla Reddy Engineering College Campus, Kurnool.


Parliamentary Sub Committe visit- 2000

New Building Inauguration - 1999


College Annual Day Celebrations


Health Camp at GPRCP


"Prof. M. L. Khorana medal (IPA)" at 63rd IPC, Bengaluru, 2011


Inaugaration of HPLC
Sri. G. Raghava Reddy, Chairman G. Pulla Reddy Charities Trust

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G. PULLA REDDY COLLEGE OF PHARMACY
HYDERABAD

CAMPUS PLACEMENTS - 2016-17

The following companies have visited the college for the campus recruitment and selected students of B. Pharm & M. Pharm, during June 2016 to May 2017.

Indegene Life Systems, Bangalore
GD Research Center Pvt. Ltd., Hyderabad
Glochem Industries Pvt. Ltd.,
AGS Health Care Pvt. Ltd.,
Sanofi India Pvt. Ltd., Chennai
Excelra Solutions(GVK Biosciences, Hyderabad)
GMK Research Laboratory, Hyderabad
Glaxo-Smithkline Consumers- Healthcare Ltd., Mumbai

Number of Companies conducted campus interviews: 13
Number of Companies conducted interviews by off campus: 07
Number of students selected through Placement cell: 93 (M. Pharm- 44; B. Pharm- 49)
Number of students selected for Internship Program: 05 (All M. Pharm)
Package range per annum: Rs. 1, 20,000 –5,00,000/-
Average salary – Rs. 2, 52, 760/-