Himachal Pradesh Technical University Sponsored National Conference

on

"NEXT GENERATION SMART MEDICINES"

17th March, 2016

Organized By:

Himachal Institute of Pharmacy

Paonta Sahib, H.P. India

SOUVENIR & ABSTRACTS

About University

The Himachal Pradesh Technical University is established in the year 2010 by an Act of Legislative Assembly of Himachal Pradesh with an objective for value creation and welfare of society through technical education training, research, innovation, entrepreneurship and continuing education programs. At the same time, the University is responsive to the changing and exceptional requirements of our society and economy and contributes to find answers to global problems. The University offers both short-term and long-term programs leading to Advance Diploma and Degrees, which are conventional as well as innovative through public and private participation. Most of these programs have been developed after an initial survey of the demand for such Programs.

The programs offered are designed to equip graduates with the necessary skills and expertise to be the leaders in their chosen professions. The key to the success lies in the high premium it places on innovation, along with the work that is done by different role players and stakeholders to promote the University achievements in the fields of Science, Engineering and Technology. This is being achieved through a benchmarking system, which ensures that training and research programs always meet the highest standards.

About Institute

Himachal Institute of Pharmacy (HIP) is an Institution of Higher Education Devoted to the study of Pharmaceutical sciences. Total four batches of B.Pharm and two Batch of M.Pharm (Pharmaceutics) have passed out form our Institution. The department has excellent research facilities and highly qualified faculty, advanced Instrument lab and CPCSEA approved animal house. The Institute is located at an ideal location of Rampur Ghat Road, Paonta Sahib, Distt. Sirmour (H.P.). HIP is affiliated with Himachal Pradesh Technical University and approved by Pharmacy Council of India (PCI), AICTE and Govt. of Himachal Pradesh. The Institute is promoted by Dr. Puran Chand Medical Charitable Trust which is duly registered with Sub-Registrar, Jagadhri on 22.07.1992 under the dynamic leadership/Chairmanship of Dr. V.K. Gupta with a vision to provide service to the society and to impart best quality of education in the field of Medical and Technical Education. It was in this view that the Trust set up Hospital and a group of Professional Medical and Technical Educational Institutions under the banner of "**HIMACHAL GROUP OF INSTITUTIONS"** in Paonta Sahib and Sundernagar in Himachal Pradesh. HIMACHAL Group of Institutions is serving the Society for the last 20 years, is a well-established and recognized name in the field of Professional Education and Hospitality

rof. R.L. Sharma
Vice Chancellor

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No. .....

Dated 17.03.2016

MESSAGE

It gives me immense pleasure to learn that Himachal Institute of Pharmacy, Paonta Sahib, District Sirmour (H.P.) affiliated to Himachal Pradesh Technical University, Hamirpur is organizing National Conference on **"Next Generation Smart Medicines"** on 17th March, 2016.

The theme chosen for the National Conference is of immense importance and relevance today in Pharmaceutical Sciences. The National Conference will provide a platform to review the developments in the area of Smart Medicines and focus on its future applications. This initiative will help the Himachal Institute of Pharmacy, Paonta Sahib, District Sirmour (H.P.) to achieve its goal and provide interdisciplinary research-based technical education across the country.

On this occasion, I extend my best wishes to organizers and participants and wish the National Conference a great success.

15/3/16

(Prof. R.L. Sharma)

Message

I am delighted to know that Himachal Institute of Pharmacy is going to organize a national conference sponsored by Himachal Pradesh Technical University. In my opinion the theme of the conference is the most demanded topic of the current times. I am sure that the conference will provide a platform for national experts to share their research experience and expertise in the areas of new drug discovery and development of new innovative technologies in the field of pharmacy. I hope the scientific programs and various sessions of the conference will provide excellent opportunity to meet the experts of the pharma research field and interact with them towards their research compilations and publications.

I congratulate and wish grand success of the conference and good wishes to the organizing committee.

(Dr. V.K. Gupta)
Chairman

Himachal Group of Institutions,
Paonta Sahib, H.P.

Message

I am pleased to learn that Himachal Institute of Pharmacy is organizing a National conference on “New Generation- Smart Medicines” on 17 of March, 2016. It is the first Himachal Pradesh Technical University Sponsored Conference in Himachal Institute of Pharmacy campus. The theme of the conference is sound as per current perspective of Pharmaceutical Sciences and Healthcare. This conference is definitely going to put significant impact on students, teachers, researchers and professionals.

I congratulate the organizers for their attempt and wish for the grand success of this National conference.

Gaurav Gupta

(Dr. Gaurav Gupta)
Director

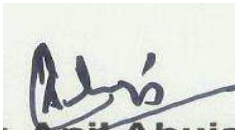
Himachal Group of Institutions,
Paonta Sahib, H.P.

Message

In the present approach of Modern Drug Development, the theme of the conference is very relevant **"Next Generation Smart Medicine"** are arranged on 17th March 2016.

I am sure that lot of New Ideas will emerge out of the deliberation of the conference. I extend a warm welcome to the learned speakers and chairpersons of oral and poster session and all the distinguished delegates and wish them a comfortably stay at Himachal Institute of Pharmacy.

I congratulate all Himachal Institute of Pharmacy family for this venture and extend my best wishes for the success of the conference, and as in capacity of head of institute hope that the delegates will have fruitful deliberations during the conference and will be carrying some new knowledge with them back home.



Dr. Anil Ahuja

Principal,
Himachal Institute of Pharmacy,
Paonta Sahib, H.P.

Message

Warm and Happy greeting to all. It is indeed a matter of immense pleasure to announce that the Himachal Institute of Pharmacy, Paonta Sahib, is going to organize the 2nd National Conference on "Next Generation Smart Medicines" on 17th of March, 2016.

I am confident that the conference discussions and the publication of the conference proceeding will bring opportunities among the academicians, corporate delegates, research scholars and students to present their innovative ideas, most up-to-date findings, and technical proficiency in the various fields of Research trends in" Next Generation Smart Medicines".

Under the suitable guidance of our management continues to march on the way of success with confidence. The sharp, clear sighted vision and precise decision making powers of our management has benefited our college to say competitive.

The dedicated staff members and disciplined students of Himachal Institute of Pharmacy, Paonta Sahib are the added features of our college. The role students in building nation cannot be overlooked and students at Himachal Institute of Pharmacy, Paonta Sahib are trained in all aspects to become a successful pharmacist and good citizens. On this occasion I would like to wish our students all very best.

I also congratulate staff members, students of pharmacy department, Participants from our colleges and other colleges for their efforts in organizing and participating in this conference. I heartly welcome the Honorable Keynote Speaker, eminent academicians, corporate delegates, co-sponsors and all the paper presenters to National Conference.

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Dr. Ujjwal Nautiyal

Head of Department,
Himachal Institute of Pharmacy,
Paonta Sahib, H.P.

Key Note Speakers

Prof. (Dr.) G. D. Gupta

Profile

Professor Gupta is currently a Professor and Director–cum-Member Secretary, in Accredited Institute by NBA "Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy", BELA (Ropar). He did his pharmaceutical education B Pharm (1993) and M Pharm. (1995), Dr. H. S. Gaur University, Sagar (MP) and Ph D (2000) from Department of Pharmaceutical Sciences, Devi Ahilya University, Indore. He has contributed two decades of dedicated service towards Pharmaceutical Education and Research.

Prof. Gupta is a prolific writer with 107 Publications in various reputed peer-reviewed journals to his credit, encompassing 65 Research Papers, 42 Review Articles and Nine professional books. Besides, he has been instrumental in having granted 1 design Patents and 02 patents filled.

He is a widely traveled and shared his experience through more than 30 Invited Talks as prestigious forums in India. Dr. Gupta and his team have also presented more than 100 Papers in various Conferences/Symposia in India and abroad. Many papers have been awarded with "Best Paper Award". He is a member of the Editorial Board and Advisory committee of various National and International Journal repute. His contributions have fetched him several National and International awards i.e. Education Excellence Award, Best Poster Paper Award (APTI), MAN OF THE YEAR –2000, from American Biographical Institute, USA, Best Director Award and Recently Society of Pharmaceutical Education and Research awarded as Principal of the Year Award 2016 during the International Conference held at CGC Ladra on 05.03.2016.

He has served as Chairman, Board of Studies Pharmacy, IK-PTU, Jalandhar and Secretary APTI, MP. He is Chairman-Board of Studies, Clinical Research, IK PTU, Jalandhar, Advisor C- Human Right Munch Punjab, Vice-President-APTI Punjab, Member Executive Committee central APTI and Founder President of registered ALCOHOL FREE SOCIETY.

Dr. Gupta is a life member of various Professional societies. Besides academics and research, Professor Gupta is a good human being and very social and friendly.

CURRENT AND FUTURE PERSPECTIVE OF PHARMACEUTICAL TECHNOLOGY AND RESEARCH

The basic goal of therapy is to achieve a steady-state or tissue level that is therapeutically effective and nontoxic for an extended period of time. Sustained/prolonged release drug delivery systems are designed to achieve a prolonged therapeutic effect by continuously releasing medication over an extended period of time after administration of single dose. Controlled drug delivery is one which delivers the drug at a predetermined rate, for locally or systemically for a specified period of time. CRDDS can improve the therapeutic efficacy and safety of a drug -both reducing the size and number of doses required. Significant advances have been made in drug delivery technologies throughout the past 2 decades.

The number of products based on new drug delivery systems has significantly increased in the past few years, and this growth is expected to continue in the near future. Recent advances in the field of genomics have accelerated research of biopharmaceuticals, and today a large number of companies are busy developing protein- and peptide-based drugs. Future research will focus on the delivery of these complex molecules through different routes, including oral, nasal, pulmonary, vaginal, rectal, etc. In the 21st century, the pharmaceutical industry is basically worked on the following fields -

- Improvement in existing drug delivery system
- Work on cost reduction process in the manufacturing and raw material
- Technology and Designing of Packaging material, shape and size
- Targeted Drug Delivery system
- Pharmacovigilence
- Clinical Research
- Vaginal Drug Delivery System
- Topical Dosage Form
- Nanotechnology
- Herbal Drug Delivery System
- Cosmetic Drug Delivery System
- Pulsatile drug delivery

Future of any drug delivery is based on the following approach – right dose, right time and drug reach at right place to give therapeutic action immediately as well as long time. The pulsatile drug delivery has attracted because of their multiple benefits over conventional dosage forms. PDDS deliver the drug at the right time, at the right site of action and in the right amount. PDDS are based on the circadian rhythm of the body and drug is released rapidly and completely as a pulse after a lag time. he mechanism of PDDS follow a sigmoidal drug release profile. PDDS have the potential to bring new developments in the therapy of many diseases such as – asthma, peptic ulcers, cardiovascular ailments, arthritis, hypercholesterolemia and attention deficit syndrome in children.

It can be concluded that pulsatile drug delivery systems offer a solution for delivery of drugs exhibiting chronopharmacological behavior, extensive first-pass metabolism, necessity of night-time dosing, or absorption window in GIT. A variety of systems based on single or multiple units are developed for pulsatile release of drug. One major challenge will be to obtain a better understanding of the influence of the biological environment on the release performance of pulsatile delivery systems in order to develop simple systems based on approved excipients with a good in vitro-in vivo correlation.

Dr. Pramil Tiwari

Profile

Prof. Pramil Tiwari *heads the department of Pharmacy Practice at the National Institute of Pharmaceutical Education & Research (NIPER), Mohali ever since it was established in 2002. This department offers 2 courses leading to the award of M. Pharm. (Pharmacy Practice) & M. Pharm. (Clinical Research).*

An alumnus of the BHU with over 25 years of experience in pharmaceutical education and industry, he was responsible for establishing this department at NIPER with the sole aim of making the pharmacy students competent in professional roles. To achieve this, he created very effective networks with the hospitals and practitioners. In addition, he had also established robust mechanisms of evaluation and created arrangements for summer training of students.

In a short period of time, he has mentored over 100 M. Pharm. students and several doctoral students. His students are very well placed and spread in the pharmaceutical industry, academia and universities abroad. With over 65 publications, 3 book chapters and close to 175 abstracts in various meetings, his research interests are spread over drug utilization studies with special emphasis on antimicrobials, pharmacovigilance, pharmacoeconomcs, pharmacotherapy in paediatric and geriatric patients, vaccines and promoting rational use of drugs.

He is an invited member for several national level causes including the formulary, list of essential medicines, pricing and allied aspects.

A life member of 8 professional bodies, Prof Tiwari holds the honorary position of Joint Secretary of the India chapter of ISPOR. At NIPER, he is also the faculty Advisor of the student chapter of ISPOR.

Prof Tiwari has the exposure of working in cross-cultural settings within the country and abroad. He is on the board of various universities, member of Ethics Committee, nodal officer of NIPER, Hajipur, examiner for M.Pharm. and PhD programs in the country.

Patient involvement in ensuring medication safety

In receiving medical care, it is assumed that the medications prescribed are effective and safe. Anyone receiving drug therapy is at the very centre of the quest to improve safety. However, when things go wrong they are the victims of the harm induced. This harm is often, very likely, to be compounded by the way that a serious adverse event is handled.

With the growing awareness on pharmacovigilance in the country, it is very important that not only the pharmacists counsel the patients better but also the patients understand their treatment goals and therapies well.

The discussion shall revolve around the three stages of use of medications. The reasons why medication errors occur and how to prevent them will also be deliberated upon.

While prescribing and dispensing remain outside the domain of the patients, administration of the medications is certainly within the rightful domain of the users/ care providers. A proactive approach to the use of medication is the most important tool to ensure that the medications are safe as well as effective.

The presence of voluntary groups on patient safety in several countries is an encouraging sign towards safe use of medications. The role of pharmacists on such boards shall also be discussed.

Mr. Rahul Taneja

Profile

Mr. Rahul Taneja *is working as Scientist, Patent Information Centre, Intellectual Property Facilitation Center for MSMEs, Haryana State Council for Science and Technology, Department of Science and Technology, Government of Haryana. Panchkula (Haryana). He holds professional degrees including Master of Intellectual Property Law, Master of Pharmacy, Master of Business Administration (International Business), Post Graduate Diploma in Intellectual Property Rights and Patent Practices, Trainer of World Intellectual Property Organization and Post Graduate Diploma in Drug Regulatory Affairs and Clinical Trials. As a Scientist at the Council for Science and Technology he facilitates the Micro, Small and Medium Enterprises of Haryana and Chandigarh for IPR related issues. His portfolio further categorically includes dealing with Patents including PCT Application (Drafting Filing and other prosecution including consultancy), Trademarks including Convention Application (search report analysis, documents inspection, filing, TM 60 NOC, caution notice, implementation of IPR Enforcement rules at Custom for seizure of counterfeit goods including consultancy), Designs (filing, reply of examination report) and Copyrights (filing and prosecution and consultancy).*

He has already delivered more than 150 specialized lectures in various National & International Conference and training programme on Intellectual Property Rights in various institutions and industries.

ROLE AND CHALLENGES OF INTELLECTUAL PROPERTY RIGHTS IN PHARMACEUTICAL INDUSTRIES

The Indian pharmaceutical industry has changed remarkably over the last few decades, from being traders in imported drugs in the fifties, to major bulk drug producers by the eighties. During this transitional period Indian pharmaceutical units have learnt the importance of Intellectual Property Rights and challenges faced by them during their marketing, production and exporting their products. At present the Indian pharmaceutical industry has about 300 large units, 1700 medium-size units and about 8000 small-scale units throughout the country. There was a time when property of any individual or organization was measured in terms of physical tangible assets like land, buildings, valuables like cars, gold, machinery etc. But with passage of time, intangible assets also got recognition, and now we know these intangible assets as Intellectual Property or IP. Now, in modern concept of ownership, we count both intangible and tangible property as property associated with an individual or an organization. Intellectual Property is the Property, which has been created by exercise of Intellectual Faculty. It is the result of persons Intellectual Activities. Thus Intellectual Property refers to creation of mind such as inventions, designs for industrial articles, literary, artistic work, symbols which are ultimately used in commerce. Intellectual Property rights allow the creators or owners to have the benefits from their works when these are exploited commercially. These rights are statutory rights governed in accordance with the provisions of corresponding legislations. Intellectual Property rights reward creativity & human endeavour which fuel the progress of humankind. The intellectual property is classified into seven categories i.e. (1) Patent (2) Industrial Design (3) Trade Marks (4) Copyright (5) Geographical Indications (6) Lay out designs of integrated circuits (7) Protection of undisclosed information/Trade Secret according to TRIPs agreements. First of all an Idea is generated in mind and these are converted in some form of property. For Instance an idea is either converted into an Innovation or invention; some literary or artistic work; some aesthetic or decorative feature of article; brand name, trade dress or packaging style etc. Role of Trademark and Patent are widely involved in the field of Pharmaceutical Industries. All these forms of property are protected by various legal instruments.

Dr. Virender Singh Bhardwaj

Profile

Dr. Virender Bhardwaj, Ph.D. in microbiology from HNB Garhwal University Srinagar, Uttrakhand. He has done lot of work in the area of medical and pharmaceutical microbiology. He has published more than 25 research papers in national as well as international journals and also he is reviewer of many international journals. He is the chief editor of the magazine named as scientific planet. He has guided 115 PG students of microbiology and biotechnology students. He has designed the syllabus of first community college under Himachal Pradesh University for diploma in pharmaceutical sciences and food processing. He is the member of board of studies of mentioned above. Currently he has designed the curriculum of Himachal Pradesh technical university Hamirpur for M. Sc. Microbiology, M.Sc. Pharmaceutical Chemistry. He has got young scientist award in 2014 at Baba Farid University of Health Sciences during in BIOTECHON conference for his outstanding contribution in herbal technology. He has two national patents on uses of herbs against Multiple Drug Resistant Bacteria causing skin disease. He is the microbiologist consultant of Pharmaceutical industry and microbiology diagnostic center. He has established Himachal institute of life sciences in-2007, Himachal institute of Pharmacy in-2008, he also provided consultancy for Pharmacy College in Himachal Pradesh.

He was Head of Department of Himachal institute of Life Sciences from 2007 to 2015 and now he is serving as director Management in Himachal Pharmacy College Nalagarh (HP).

ANTIBIOTIC RESISTANCE (SUPERBUGS) – LEADING TO GLOBAL THREAT FOR SOCIETY

Antimicrobial resistance (AMR), including antibiotic resistance, is the resistance of a microbe to an antimicrobial medication that used to be effective in treating or preventing an infection caused by that microbe. There are three main ways by which resistance can occur: by natural resistance in certain types of bacteria, by genetic mutation, or by one species acquiring resistance from another. Resistance can happen spontaneously owing to random mutations, to a buildup of resistance over time, or to misuse of antibiotics. Resistant microbes become increasingly difficult to treat, requiring alternative medications or higher doses, both of which may be more costly or more toxic. Microbes which are resistant to multiple antimicrobials are called multidrug resistant (MDR); these organisms are often referred to as superbugs. Antimicrobial resistance is an increasingly problematic issue that leads to millions of deaths every year. A few infections become completely untreatable due to resistance. Physicians depend on antibiotic such as penicillin, tetracycline, and erythromycin to treat many illnesses caused by bacteria, from ear and skin infections to pneumonia, food poisoning, meningitis. Today, however, doctor report increasing numbers of bacterial infections that fail to respond to antibiotic treatment. Antibiotic resistance is fueled by misuse and overuse of antibiotics. MDR include methicillin-resistant *Staphylococcus aureus* (MRSA), Vancomycin-resistant enterococci (VRE), and a growing number of additional pathogens that are developing resistance to many common antibiotics. The extraordinary genetic capacities of microbes have benefitted from man's overuse of antibiotics to exploit every source of resistance genes and every means of horizontal gene transmission to develop multiple mechanisms of resistance for and every antibiotic introduced into practice clinically, agriculturally, or otherwise. To achieve complete restitution of therapeutic applications of antibiotics; there is a need for more information on the role of environmental micro biomes in the rise of antibiotic resistance. In particular, creative approaches to the discovery of novel antibiotics and their expedited and controlled introduction to therapy are obligatory. From a society's perspective, antibiotics are a resource to be used wisely in much the same way as the world's fish stocks or atmosphere. In fact, the efficacy of these drugs can be thought of as an "open access˝ resource where the actions

of individuals, physicians, medical institutions and governments have consequences for their efficacy in the future. It would appear the consequences of antibiotic overuse by patients and physicians or insufficient hospital infection control are partly borne by the individuals who use antibiotics or the hospitals where antibiotic resistant bacteria spread. The spread of resistance is ultimately caused by the use and overuse of antibiotics. Antibiotics are effective medicines when used correctly – as is their purpose. The ability of VRE, MRSA and other antibiotic-resistant bacteria in hospitals to spread is affected by the percentage of people who use antibiotics in a population - the more that antibiotics are used, the quicker resistance to them appears and the faster the resistant strain can spread from person to person.

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NEXT GENERATION SMART MEDICINES AND TECHNOLOGIES

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Abstract

Early efforts in drug discovery involved screening natural products derived from plants and microorganisms and testing them for activity in animal models. This way is slow and labor intensive process. Chemists meanwhile have complemented the search for natural products by developing families of compounds with potential biological activity. For the production of a wide variety of compounds chemists are using combinatorial chemistry, which uses automated process to synthesise large number of related chemical compounds with a high degree of structural diversity. In search of more refined process chemists now engage with biologists to gain a better understanding of the process and mechanisms of a disease before going into laboratory to synthesize potential drug candidates and designing innovative technologies for improving their effectiveness. We are at an incredible moment for discover and as we look ahead at the scientific landscape, there are so many areas that hold tremendous promise for progress, including genomics, synthetic biology, systems biology, advanced therapies like stem cells, and emerging technologies, like nanotechnology. Despite unpredictable spending on basic research and development by Government as well as the Pharmaceutical, Biotechnology Industries, Research centers and Institutions the pipeline of new drugs is disturbingly dry. A main causative factor is that that how we think about drug candidates, discover new ones and how we evaluate when it comes to their benefit/risk profile. The aim of this study is to review past few years of the Essential Medicines movement and focus on the future of the essential medicine. Our main aim behind this study is to help prevent medicines and promising techniques from being discarded during drug development due to lack of tools to recognize their potential. We are sure that this study will help in spreading knowledge about the current status of innovations in the field of pharmaceutical sciences.

Keywords: Next-generation, technology, combinatorial chemistry, genomics, potential drug candidates.

A REVIEW ON BUCCAL PATCHES

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Abstract

Buccal patch is a non-dissolving thin matrix modified release dosage form composed of one or more polymer films or layers containing the drug and/or other excipients. The patch may contain a mucoadhesive polymer layer which bonds to the oral mucosa, gingiva, or teeth for controlled release of the drug into the oral mucosa (unidirectional release), oral cavity (unidirectional release), or both (bidirectional release). The patch is removed from the mouth and disposed of after a specified time.Buccal route of drug delivery provides the direct access to the systemic circulation through the jugular vein bypassing the first pass hepatic metabolism leading to high bioavailability.

Keywords: Buccal Patch, Mucoadhesive, Gingiva,

A REVIEW ON CHALLENGES IN WET GRANULATION TECHNOLOGY

Goel Kirti

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Abstract

Research on granulation processes has concentrated on the use of mechanical mixers. Understanding of the mechanisms by which granules are formed, interact with each other and change in size has increased greatly. The techniques for process control and scale-up of pharmaceutical wet granulation processes are reviewed. For wet granulation in high-shear mixers, specific methods based on the liquid saturation and the consistency of the wet mass are described. Both parameters can be used to quantify the deformability of the wet granules, and relate well with the particle size of the end granules. Three areas of research are suggested that may repay intensive investigation. The first challenge is to improve knowledge of the strength of wet assemblies. This is fundamental to granule deformation and coalescence processes and yet is not well understood. Another challenge is to develop better models for granule coalescence. Although there have been significant advances on understanding of the processes of granule adhesion and coalescence, more needs to be done. The third challenge is to learn how to design mixers that inherently give a better control of granule size. This requires an understanding of the motion of material within granulators and how the granulator interacts with the material being granulated. In fluid bed granulation the granulation process is different and the moisture content in the bed is the key parameter to control. This can be monitored directly by near infrared probes or indirectly with temperature probes. As a large number of inter-related variables can be adjusted to modify the process, computerized techniques have become popular for fluid-bed process control – fuzzy logic, neural networks, and models based on experimental design techniques are several examples.

INFLUENCE OF PETROLEUM ETHER EXTRACT OF *Ficus retusa* L. ON THE SEXUAL BEHAVIOR OF NORMAL RATS

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Abstract

According to traditional ayurvedic book *Ficusretusa*L. (*Moraceae*) claimed to have good aphrodisiac potential but the actual action is not yet proved by scientific methods. Therefore the present study was conducted to investigate the aphrodisiac potential of *Ficusretusa*L. Acute toxicity test was carried out to determine the nature and extent of untoward reaction which might follow the administration of a single dose (or an overdose) of a drug. The acute toxicity study was carried out on male mice by the administration of PE, CH and ME extracts of *Ficusretusa*L. (Leaves) orally at one dose level (150, 500, 1000 and 1500 mg/kg) once only. Finally a dose of 150 mg/kg was selected which is 1/10th of the toxic dose. Furthermore male albino rats were distributed into 5 groups consisting of six rats per group. Rats in group I (control) were administered with 1 ml/kg, p.o. of saline. Group II rats were treated with Sildenafil citrate at a dose 5 mg/kg, s.c while those in group III, IV and V were given 150 mg/kg of PEE, CE and ME of *Ficusretusa*L. Sexual behaviour study was carried out on days 0, 7, 14, 21 and 28th. The sexual behaviours were preceded with perceptive and pre-copulatorybehaviours in the animals. The increase in MF, and IF ejaculation frequency, and decrease in the mount and intromission latencies, ejaculation latency and post ejaculatory phase was observed on 0, 7, 14 and 28th consecutive days of treatment period.In hesitation time and attraction towards female model, PEE of *Ficusretusa*L.exhibited significant increase in action, while in partner preference test model, same extract exhibited significant decrease time duration to chase a female rat, on 28th day of treatment. The present investigation reveals that oral administration of all the extracts of *Ficusretusa*L.,leaves showed significant increase in aphrodisiac activity, but PEE of *Ficusretusa*L. remarkably enhanced male sexual behavior in male rats

Keywords:

Sidenafil, Sexual behavior, Aphrodisiac, Pre-copulatory, Toxic, *Ficus retusa* L., PEE (Petroleum ether extract)

NUTRACEUTICALS – DRUGS OR HEALTH BOOSTER

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Abstract

In recent years, Nutraceutical has gained a centered attraction of all for research and use in daily life as it provides health benefit and are alternative to modern medicine. The term nutraceutical is derived from two words "nutrition" and "pharmaceutical". These are regarded as the bio active substance and the constituents are either of known therapeutic activity or are chemically defined substance generally accepted to contribute substantially to the therapeutic activity of the drug which enhances these to perform the pharmacological action. Nutraceutical is a food or food product that provides health and medical benefit which includes prevention and treatment of disease. Nutraceutical includes food supplements, dietary supplements, value-added processed foods as well as non-food supplements such as tablets, soft gels, capsules etc. By the use of nutraceuticals, it may be possible to reduce or eliminate the need for conventional medications, reducing the chances of any adverse effect. Nutraceuticals often possess unique chemical actions that are unavailable in pharmaceuticals. The global nutraceuticals product market reached $142.1 bn in 2011 and is expected to reach $204.8 bn by 2017, growing at a CAGR of 6.3%, according to a new market report from Transparency Market Research. An attempt is made in this article to re-define Nutraceuticals and functional foods as well as to summarize the application of Nutraceuticals.

Keywords: Nutraceuticals, nutrition, pharmaceutical, therapeutic, pharmacological, supplements, medications.

A REVIEW ON MICROSPHERES

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Abstract

Microspheres are characteristically free flowing powders consisting of proteins or synthetic polymers having a particle size ranging from 1-1000 μm. Some of the problems of overcome by producing control drug delivery system which enhances the therapeutic efficacy of a given drug. One such approach is using microspheres as carriers for drugs also known as microparticles. In future by combining various other strategies, microspheres will find the central place in novel drug delivery, particularly in diseased cell sorting, diagnostics, gene & genetic materials, safe, targeted and effective in vivo delivery and supplements as miniature versions of diseased organ and tissues in the body. The microspheres are characteristically free flowing powders consisting of proteins or synthetic polymers, which are biodegradable in nature, and ideally having a particle size less than 200μm. Solid biodegradable microspheres incorporating a drug dispersed or dissolved throughout particles matrix have the potential for the controlled release of drug. The nasal mucosa has also received attention as a viable means of systemic administration of analgesics, sedatives, hormones, cardiovascular drugs, and vaccines.

Keyword: Microspheres, Microparticles, Matrix, Novel drug delivery.

HERBAL DRUGS FOR INSOMNIA

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Abstract

The world today is in dire need of a system of healthcare that could rescue it from the growing agonies of aliments. When we look around we find that most of the so-called "progressive and advanced" people are suffering the painful consequences of an artificial lifestyle and choosing the quick remedies of allopathy. The toxic effects of allopathy put them in trouble even risking their life due to almost lethal side reactions. Insomnia is a psychosomatic disorder, which not only reduces patient's efficiency, but also invites different kinds of other mental and physical health related problems. Patient starts consuming tranquilizers which eventually increases stress full suffering instead of healing with natural cycle of sleep. The *Picrorhiza kurroa, Withania somnifera, Eclipta alba, Trachyspermum copticum* and *Terminalia arjuna* are few examples which are blessed with the remedy to restore our natural cycle of sleep. Gradually the pace of chanting should be slowed down and claming current of sleep should be invoked simultaneously in the imagination. This should be coupled with feeling that soothing the sense of sleep is embracing every part of our being. The herbal plant effect blesses the patient with the boon of good sleep.

HERBAL MEDICINES: MERITS AND DEMERITS

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Herbal medicines remain largely an unproven, imprecise science. Despite the criticism of herbal medicine among mainstream medical professionals, it is wise to remember that many common drugs we use today were derived from plant-based sources. For example, scientists originally derived aspirin from willow bark; herbalists prescribe white willow for headaches and pain control. There are numerous advantages and disadvantages of herbal medicine. Some of the advantages include: reduced risk of side effects, effectives with chronic conditions such as arthritis, lower cost and widespread availability. Herbs are not without disadvantages, and herbal medicine is not appropriate in all situations. These are also few of the disadvantages to consider: lack of dosage instructions, poison risk associated with wild herbs and lack of regulation leading to risk of buying inferior quality herbs. The bottom line is that herbs are medicines like other medications they too have some advantages and disadvantages and one should consult an herbalist for the proper herb and dosage after the correct diagnosis.

CHIRAL PHARMACOLOGY

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Chiral pharmacology is the existence of drugs with one or more chiral centres and this chirality results in difference in their biological activity (pharmacokinetic and pharmacodynamic changes) due to difference in distribution of isomers and difference in reactivity at receptor site. The pharmacokinetic changes include changes in absorption (l-methotrexate is better absorbed than its d- methotrexate), distribution (d- propanolol is more extensively bound than l-propanolol), metabolism (S-warfarin is metabolized faster than R-warfarin) whereas pharamcodynamic changes include change in potency (S-ibuprofen is more active than R-ibuprofen), pharmacological action (l- methorphan is potent opioid analgesic while dextromethorphan is cough suppressant), therapeutic and adverse effects (R-thalidomide is sedative while S-thalidomide exhibits teratogenic effect), efficacy (S (-) carvediol is 100 times more potent than R (-) carvediol and drug interaction (metronidazole inhibit metabolism of S warfarin strongly as opposed to R warfarin). So, it can be concluded that chiral pharmacology affects the interaction of drugs with the receptor and thus its therapeutic efficacy.

ROLE OF SECONDARY PLANT METABOLITES AS DRUGS

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Abstract

Secondary metabolites are organic compounds that are not essential for growth, energy conservation or for primary metabolic pathways but are needed for plant to interact with its environment and other organisms. A large proportion of existing drugs (used as medicines, flavors and recreation) are formed from plant secondary metabolites viz alkaloids obtained from amino acid precursors are used as analgesics (codeine and morphine from *Papaver somniferum*), antineoplastic (Vincristine&Vinblastine from *Vinca rosea*), antimalarial (quinine from *Cinchona officinalis*); terpenoids as antifungal (ipomeamarone from *Ipomea* sps), antimalarial (artemisinin from *Artemisia annua*); polyketides as antihyperlipidemic (lovastatin from oyster mushrooms), anthelminthic (avermectins); phytoalexins as anticancer (resveratrol from tobacco plant) etc. Only a few percentage of secondary plant metabolites has been explored for their therapeutic potential so research can be done to evaluate the pharmacological potential of still unexplored secondary plant metabolites.

TRANSDERMAL DRUG DELIVERY SYSTEM: A REVIEW

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Abstract

A transdermal patch is a medicated adhesive patch that is placed on the skin to deliver a specific dose of medication through the skin and into the bloodstream. Often, this promotes healing to an injured area of the body. An advantage of a transdermal drug delivery route over other types of medication delivery such as oral, topical, intravenous, intramuscular, etc. is that the patch provides a controlled release of the medication into the patient, usually through either a porous membrane covering a reservoir of medication or through body heat melting thin layers of medication embedded in the adhesive. The main disadvantage to transdermal delivery systems stems from the fact that the skin is a very effective barrier; as a result, only medications whose molecules are small enough to penetrate the skin can be delivered in this method. A wide variety of pharmaceuticals are now available in transdermal patch form.

Keywords: Transdermal Drug Delivery System, Bioavailability, Iontophoresis, Electroporation, Ultrasound, Microscopic Projection.

FLOATING TABLETS: A REVIEW

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Abstract

Floating drug delivery system (FDDS) is a safe and efficient technology for drug delivery which has a bulk density lower than gastric fluids thus, remain buoyant in the stomach for a prolonged period of time, without affecting the gastric emptying rate. The drug is released slowly and almost completely at a desired rate from the system after which the residual system becomes liable to be emptied from the stomach. This results in an increase in the gastro retentive time, bioavailability and a better control of fluctuations in the plasma drug concentrations. It may of two types i.e., effervescent type & non-effervescent type. Effervescent systems include use of gas generating agents, to produce carbon dioxide (CO_2) gas, thus reducing the density of system and making it float on the gastric fluid. The non-effervescent floating drug delivery systems are based on mechanism of swelling of polymer in gastric fluid. Floating tablet is a promising approach with a view of obtaining faster action of the drug and would be advantageous in comparison to currently available conventional forms.

Keywords: Gastric emptying, Intra-gastric, In-gastric.

NANOTECHNOLOGY AND HERBAL MEDICINES: A NOVEL PERSPECTIVE

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Abstract

Herbal therapeutics need a methodical approach to deliver the components in a persistent mode to increase patient acquiescence and avoid repeated administration. This target can be achieved by designing novel drug delivery systems (NDDSs) for phytoconstituents. Amalgamation of the herbal extracts into novel formulation systems have specific merits such as bulk dosing and lower absorption can be overcome which is the major problem being faced. Nanotechnology is a field of applied science and technology which aims to develop devices and dosage forms in the range of 1 to 100 nm. The applications of nanotechnology for treatment, diagnosis and control of biological systems have been referred to as nanomedicine. In phyto-formulation research, developing nano dosage forms such as nanospheres, nanocapsules, nanoemulsion and liposomes has large number of advantages for herbal drugs, including enhancement of solubility and bioavailability, protection from toxicity and enhancement of pharmacological activity and stability. Thus, the nano drug delivery systems of herbal drugs have a prospective for enhancing the activity and overcoming problems associated with herbal medicines.

Keywords: NDDS, nanotechnology and herbal medicines

PHARMACOVIGILANCE: A REVIEW

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Abstract

Pharmacovigilance is an important and integral part of clinical research. Pharmacovigilance is "defined as the pharmacological science relating to the detection, assessment, understanding and prevention of adverse effects, particularly long term and short term adverse effects of medicines. Here the main focus on the aims and role of pharmacovigilance in medicines regulation and their Partners. This article describes and discusses the National programme of pharmacovigilance and centre in India. There role in collecting the reports ADRs of medicines. Further effectiveness and risk assessments of therapies are been discussed. The important role played by health care professional, pharmaceutical industries, media, and programmes carried by WHO. Finally the conclusion describes the major challenges and achievements for the future pharmacovigilance safety and toxicity is not so critical if botanicals are used in traditional forms.

Keywords: Pharmacovigilance; WHO; ADR

BANNED DRUG A PROSPECTIVE IN INDIA

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Abstract

Banning of drug means to prohibit or forbid the use of something, especially by official regulation. No drug is considered 100% safe, banning of any drug in country is based on a risk assessment process undertaken by government in consultation with experts. In IndiaDrug controller general of India (DCGI) is the highest authority to extend the approval of any drug or to ban a drug. The drug is ban when the adverse effects are severe or the risk of using the drug overweight the benefits or if the drug is ineffective. Some drugs may cause adverse effects only when combined with particular drugs. In such cases, only the fixed dose combination is banned and not the individual drugs.In India drugs like Nise, Nimulid, D'cold, Vicks action 500, Enteroquinol & Novalgin are frequently used without doctor's prescription. Latest research shows that long term use of these can affect human health in various ways. Most of European countries have banned these drugs. The present study was planned to explore about awareness of these drugs among educated youth

Keywords: DCGI, banned drugs, adverse effects, Fixed dose combination, Human health.

PHARMACEUTICAL POLLUTION

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Abstract

Pharmaceutical pollution (Drug Pollution), defined as presence of pharmaceutical drugs, medicines, pro and post pharmaceuticals, APIs in water streams, soil, underground water and air is a matter of global concern nowadays. The main causes include pharmaceutical companies (aging infrastructure, improper disposal, and production pressure), hospitals (untreated and improper disposal by untrained staff), doctors (medical malpractice), public unawareness (expired/unneeded drugs, improper unwise disposal, self medication, non medical use of drugs). This pharmaceutical pollution leads to environmental persistence, antibiotic resistance, genotoxicity, endocrine disruptions, developmental abnormalities etc. So, proper disposal of drugs, safe use of medicines, enforcement of environmental law and medico-legal procedures are required for preventing this pollution.

MULTIDRUG-RESISTANCE IN TUBERCULOSIS: A REVIEW

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Abstract

Multidrug-resistant tuberculosis (MDR-TB) caused by Mycobacterium tuberculosis resistant to both isoniazid and rifampicin with or without resistance to other drugs is among the most worrisome elements of the pandemic of antibiotic resistance. Globally, about three per cent of all newly diagnosed patients have MDR-TB. Multi drug resistant tuberculosis (MDR-TB) will not usually respond to short course chemotherapy. Efficiently run tuberculosis control programmes based on directly observed treatment, short-course (DOTS) policy is essential for preventing the emergence of MDR-TB. Management of MDR-TB is a challenge which should be undertaken by experienced clinicians at centres equipped with reliable laboratory service for mycobacterial culture and *in vitro* sensitivity testing as it requires prolonged use of expensive second-line drugs with a significant potential for toxicity. . Diagnosis requires drug sensitivity testing and the capability to do this is not widely available. The treatment is not only expensive but also quite prolonged and compliance cannot be overemphasized. The recent outbreaks of extensive drug resistant TB further complicate the management and control of the disease.

Keywords: Multidrug-resistant tuberculosis; Control; Review.

FAST DISSOLVING TABLETS: A REVIEW

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Abstract

Novel drug delivery system assists to achieve better patient compliance. Fast dissolving tablets are one of them.FDT have benefits such as accurate dosing, easy portability and manufacturing, good physical and chemical stability and an ideal alternative for pediatric and geriatric patients. FDDT formulation combines the advantage of both liquid and conventional tablet formulation while also offering advantage over both traditional dosage forms. This review gives a view of advantages, limitations, need for formulating FDTS, Formulation factors, excipients used, and methodology and evaluation parameters. FDTs overcome the disadvantagesof conventional dosage form especially dysphagia (difficulty in swallowing) in pediatric and geriatric patients.Mouth Fast Dissolving Tablets (MFDT's) have emerged as an alternative toconventional oral dosage forms to improve the patient compliance. Due to problem inswallowing ability with age, the pediatric and geriatric patients complain of difficulty to take conventional solid dosage forms.

Keywords: Melting, Fast dissolving tablets, evaluation

NUTRACEUTICALS AND ITS IMPACT ON HEALTH

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Abstract

Nutraceutical is the hybrid of 'nutrition' and 'pharmaceutical'. Nutraceuticals are food or part of food that provides medical or health benefits including the prevention of disease and/or treatment of a disease. Nutraceutical have health benefits over medicine because they avoid side effects, have naturally dietary supplement etc. The food products used as nutraceuticals can be categorized as dietary fiber, nutrients, herbals, dietary supplements etc. These nutraceuticals help in combating some major health problems like obesity, cardiovascular disease (CVD), cancer, diabetes etc. nutraceuticals are the most rapidly growing market across worldwide global nutraceutical market is estimated as USD117billlion. The principal reason for the worldwide growing market are the current population and the health trends. Nutraceutical is used as powerful instrument in maintaining health and act against nutritionally induce acute and chronic disease. The present review is devoted towards better understanding of the nutraceuticals based on its impact on health.

Keywords: Nutraceuticals, dietary supplement, nutrients, global market, dietary fiber.

HERBAL THERAPY FOR THE TREATMENT ALZHEIMER DISORDER: A REVIEW

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Abstract

Alzheimer disease (AD) is the most common form of the dementia which occurs among older people above the age of 60 years. The Alzheimer's disease once considered a rare disorder and it is now seen as a major public health problem that is seriously affecting millions of older people and their families world over. The incidence of AD ranges from 1 to 4 percent of the population per year rising from its lowest level at ages 65 to 70 years to rates that may approach 6 percent for those over the age of 85 years. Alzheimer's is characterised by massive loss of neurons and disrupted signaling between cells in the brain. The disease can be diagnosed post mortem by observing tangles inside and senile plaques outside cells throughout the brain. The major component of the plaques is a small, 40- or 42-amino acid peptide: amyloid beta (Aβ,).Aβ, causative agent in Alzheimer's, was first suggested as the amyloid hypothesis about 15 years ago and is now widely accepted amongst scientific community. It has been a clinical challenge to treat Alzheimer's disease (AD). In the present commentary we discuss whether herbal therapy could be a novel treatment method for AD on the basis of results from clinical trials, and discuss the implications for potential therapy for AD pathophysiology. There is evidence to suggest that single herbs or herbal formulations may offer certain complementary cognitive benefits to the approved drugs. The current evidence supporting their use alone, however, is inconclusive or inadequate owing to many methodological limitations. Herbal mixtures may have advantages with multiple target regulation compared with the single-target antagonist in the view of traditional Chinese medicine. Several clinical trials using herbal mixtures are being conducted in China and will hopefully show promising results for treating AD in the near future.

Keywords: Alzheimer's disease; Herbal medicines; Review.

ANTI-DIABETES: BLUE CIRCLE FIGHTERS- A PROMPT REVIEW

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Abstract

The chronic metabolic disorder diabetes mellitus is a fast-growing global problem with huge social, health, and economic consequences. In 2012, an estimated 1.5 million deaths were directly caused by diabetes. In 2014, 9% of adults 18 years and older had diabetes. More than 80% of diabetes deaths occur in low- and middle-income countries. WHO projects that diabetes will be the 7th leading cause of death in 2030. An ageing population and obesity are two main reasons for the increase. Furthermore it has been shown that almost 50% of the putative diabetics are not diagnosed until 10 years after onset of the disease, hence the real prevalence of global diabetes must be astronomically high. Diabetes increases the risk of heart disease and stroke, reduces blood flow, neuropathy (nerve damage) in the feet increases the chance of foot ulcers, causes kidney failure and is an important cause of blindness. This article covers up the drugs used to treat diabetes with their mechanism of action and also include banned drugs with the reason of banning the drugs.

Keywords: insulin, exenatide, liraglutide, pramlintide, oral hypoglycemic agents, oral antihyperglycemic agents.

CAUSES OF MALE INFERTILITY: A REVIEW

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Abstract

Infertility is one of the most stressful conditions amongst married couples. Male factor infertility is implicated in almost half of these cases. Recent advances in the field of reproductive medicine have focused the attention of many researchers to consider reactive oxygen species (ROS) as one of the mediators of infertility causing sperm dysfunction. Although, ROS is involved in many physiological functions of human spermatozoa, their excess production results in oxidative stress. Mitochondria and sperm plasma membranes are the two locations of ROS production that involves complex enzyme systems such as creatine kinase and diaphorase. ROS causes damage to the spermatozoa DNA, resulting in increased apoptosis of these cells. The production of ROS is greatly enhanced under the influence of various environmental and life style factors such as pollution and smoking. An effective scavenging system is essential to counteract the effects of ROS. Various endogenous antioxidants belonging to both enzymatic and non-enzymatic groups can remove the excess ROS and prevent oxidative stress. Since, ROS is essential for the normal sperm physiology, rationale use of antioxidants is advocated.

Keywords: Infertility; Pollution; Reactive oxygen species.

IMPORTANCE OF ANALYTICAL TECHNIQUES IN PHARMACEUTICAL DRUG ANALYSIS

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Abstract

The development of the pharmaceuticals brought a revolution in human health. These pharmaceuticals would serve their intent only if they are free from impurities and are administered in an appropriate amount. To make drugs serve their purpose various analytical instrumentation and methods play an important role in assessing the quality and quantity of the drugs. The use of instrumentation has now become a part of chemical analysis and is applied for all areas of pure and applied science. A variety of analytical techniques such as titrimetric, chromatographic, spectroscopic, Electrophoretic, and Electrochemical and their corresponding methods that have been applied in the analysis of pharmaceuticals to solve the problem to a maximum extent. The work is to highlights the role of various analytical techniques and their corresponding application in the analysis of pharmaceuticals.

Keyword: Analytical technique, Titrimetric, chromatographic, Spectroscopic, Electrophoretic, and Electrochemical method.

NUTRACEUTICALS AS THERAPEUTIC AGENTS

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Abstract

In recent years there is a growing interest in nutraceuticals which provide health benefits and are alternative to modern medicine. Nutraceuticals has proven health benefits and their consumption will keep diseases at bay and allow humans to maintain an overall good health. A nutraceutical is "any non-toxic food component that has proven scientific health benefits, including disease treatment or prevention." Nutraceutical generally accepted to contribute substantially to the therapeutic activity of the drug. Nutraceuticals May easily be available and economically affordable. The nutraceutical revolution will lead us into a new era of medicine and health, in which the food industry will become a research, oriented one similar to the pharmaceutical industry.

Keywords: Nutraceuticals, Pharmaceutical, Medicine, Therapeutic.

BANNED DRUG IN INDIA – A PROMPT REVIEW

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Abstract

India has become a dumping ground for banned drugs; also the business for production of banned drugs is booming and many people don't know about these banned drugs and consume them causing a lot of damage to themselves .Doctors do not report side effects of any drug and the Drug Controller General of India (DCGI) is the sole authority to endorse the manufacture, sale and ban of a drug. Drug development process is a robust process that can make and assure a drug with least possible side effects for human consumption. After a series of quality control process only a drug can be released into market. But some adverse effects of drugs appear only after the drug is used in general population. If the adverse affects are severe or the risks of using the drug outweigh the benefits, or if the drug is ineffective, the country may ban the drug or the Drug Company may itself voluntarily withdraw the drug. Some drugs may cause adverse effects only when combined with particular drugs. In such cases, only the fixed dose combination is banned and not the individual drugs. A number of single drugs as well as fixed dose combinations have been banned for manufacture, marketing and distribution in India. The present review is an attempt to provide some information about the individual drugs that are banned in India with their reason of banning.

Keywords: Drugs, Consumption, Population, Manufacture, Marketing, Distribution

DIABETES MELLITUS, PATHOGENESIS: A REVIEW

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Abstract

The aim of this paper is to review the information on type 1 and type 2 diabetes with emphasis on its etiology, pathogenesis and pathophysiology via literature review. Diabetes is a group of metabolic disorders characterized by a chronic hyperglycemic condition resulting from defects in insulin secretion, insulin action or both. Type 1 diabetes is the result of an autoimmune reaction to proteins of the islets cells of the pancreas while type 2 diabetes is caused by a combination of genetic factors related to impaired insulin secretion, insulin resistance and environmental factors such as obesity, overeating, lack of exercise and stress, as well as aging. The pathogenesis of selective β-cell destruction within the islet in type 1 diabetes mellitus is difficult to follow due to marked heterogeneity of the pancreatic lesions. At the onset of overt hyperglycemia, a mixture of pseudoatrophic islets with cells producing glycogen, somatostatin and pancreatic polypeptide, normal islets and islets containing both β-cells and infiltrating lymphocytes and monocytes may be seen. The autoimmune destruction of pancreatic β cells leads to a deficiency of insulin secretion that leads to the metabolic derangements associated with type 1 diabetes. The main pathophysiological features of type 2 diabetes are impaired insulin secretion and increased insulin resistance. The impairment of pancreatic β cell function notably shows progression overtime in type 2 diabetes although aging, obesity, insufficient energy consumption, alcohol drinking, smoking, etc are independent risk factors of pathogenesis of type 2 diabetes mellitus.

Key words: Diabetes Mellitus, Pathophysiology, Pathogenesis, Etiology.

USE OF ANALYTICAL INSTRUMENT IN PHARMACEUTICAL INDUSTRY

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Abstract

Analytical instruments are a large class of instruments used for analytical applications in pharmaceutical industries. The development of the pharmaceuticals brought a revolution in human health. These pharmaceuticals would serve their intent only if they are free from impurities and are administered in an appropriate amount. To make drugs serve their purpose various chemical and instrumental methods were developed at regular intervals which are involved in the estimation of drugs. The instruments help in analysing materials and establishing the composition. Among the most common types of analytical equipments are HPLC, spectrophotometer, refractometer, calorimeter, electrochemical Instrument, conductivity meter, automatic density meter, automatic titrators, colony counter, demagnetizers, fiberscopes and several others. Pharmaceuticals may develop impurities at various stages of their development, transportation and storage which makes the pharmaceutical risky to be administered thus they must be detected and quantitated. For this analytical instrumentation and methods play an important role. The primary objective of analytical instrumentation in any industry is to analyse a given sample for assessing its purity. During the analysis various parameters and properties of the sample will be checked to ascertain whether the product conforms to the set quality specifications. The analysis can be either qualitative or quantitative. The analytical instrumentation has to play the same role in pharmaceutical industry also. Analytical instrumentation field has become more sophisticated nowadays. Laboratory analytical instruments only from reliable manufacturers, suppliers and exporters. The present review is an attempt to summarize the use of analytical instrument in the pharmaceutical industry.

Keywords: Pharmaceutical, HPLC, spectrophotometer, refractometer, calorimeter, electrochemical Instrument, conductivity meter, automatic density meter, automatic titrators, colony counter, demagnetizers, fiberscopes.

MEDICINAL PLANTS WITH ANTIOCULAR ACTIVITIES

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Abstract

This review summarizes the literature on antiocular activities of medicinal plants used for the treatment of ocular disorder in the indigenous system of medicine. Herbal medicine have been used as traditional treatment for numerous human diseases for thousands of years in many parts of the world. Herbal medicine is still the mainstay of about 75–80% of the world population, mainly in the developing countries, for primary health care because of better cultural acceptability, better compatibility with the human body and lesser side effects. Eye is one of the most sensitive organ of human body and is permanently exposed to different environmental agents. The common ocular diseases are glaucoma, conjunctivitis, cataract, ocular allergies, ocular inflammation etc. Cataract is the main cause of blindness in the world, responsible for approximately 50% of the existing cases in both developed and developing countries. Glaucoma is a group of eye diseases that damage the optic nerve. Glaucoma remains a leading cause of blindness in adults over 60 years. Conjunctivitis is the disease when the mucous membrane on the inner surface of the eyelid is irritated. Conjunctiva is a thin, translucent membrane lining the anterior part of the sclera and inside of the eyelids. In this short review an attempt has been made to review some of the medicinal plants which proved to be beneficial in the treatment of different ocular disease such as *Cassia fistula* (L.), *Capsicum frutescens* L.**,** *Capparis zeylanica* L.**,** *Catharanthus roseus* L.**,** *Camellia sinensis* (L.) Kuntze**,** *Caesalpinia volkensii* Harms**,** *Buddleja officinalis* Maxim.**,***Cheilanthes glauca* (Cav.) Mett**,** *Centella asiatica* (L.) Urb.**,** *Curcuma longa* Linn.**,** *Emblica officinalis, Erythrina indica* Lam.**,** *Eucalyptus deglupta***,** *Eugenia borinquensis***,***Eugenia jambolana***,** *Ginkgo biloba* L.**,** *Lantana camara* L**,** *Mangifera indica* L.*, Ocimum sanctum* Linn**,** *Plantago ovata* Forssk.**,** *Tagetes erecta* L.**,** *Tamarindus indica* L.**,** *Terminalia arjuna* L.**,** *Tinospora cordifolia, Tribulus terrestris* L.*, WithaniaSomnifera* Linn.**,** *Zingiber officinalis.* The eye infection is caused by various microorganisms *Streptococcus pneumonia,Haemophilus influenzae, Staphylococcus aureus, Escherichia coli, Pseudomonasaeruginosa.* Due to side effects of allopathic drugs, now a day's huge numbers of herbal drugs are used for treatment of ocular diseases.

Key words: Ocular diseases, glaucoma, conjunctivitis, ocular infection, cataract, herbal drugs.

REVIEW: BLOOD PRESSURE VACCINATION - AN ONGOING APPROACH

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Abstract

Hypertension, also known as high blood pressure, is usually defined by the presence of a chronic elevation of systemic arterial pressure which may lead to heart disease or stroke. Blood pressure is measured as Systolic (maximum) and Diastolic (minimum) pressures in the arterial system. Normal blood pressure at rest is within 100-140 mmHg systolic and 60-90 mmHg diastolic. Many Antihypertensive drugs are used to treat hypertension. The most widely used antihypertensives are thiazide diuretics, calcium channel blockers, ACE inhibitors, Angiotensin II receptor antagonists and beta blockers. Most common risk factors include smoking, obesity, inactivity, family history and stress. Vaccinations for hypertension are still a remediable approach in many countries. The blood pressure vaccines that are being trialled so far, targets one of the body's own hormones called AngiotensinII which raises blood pressure by causing blood vessels to constrict. A vaccine named CYT006-AngQb is under investigation against AngiotensinII. CYT006-AngQb consists of virus- like particles covalently coupled to Angiotensin II. It's subcutaneous injection causes the immune system to produce antibodies which reduce angiotensinII blood levels thereby lowering the blood pressure. A DNA vaccine and similar other vaccines with modified immunogens and different adjuvants are under investigation. The ultimate goal of an anti-hypertensive vaccine is to improve drug compliance and to achieve perfect blood pressure control. Also, in developing countries like south Asia and Africa, antihypertensive drugs such as ARB are expensive. So, vaccines may provide cheaper and effective antihypertensive treatment.

Keywords: Hypertension, Vaccination, AngiotensinII, CYT006-AngQb.

FAST DISSOLVING TABLETS: A REQUIREMENT FOR DIABETES

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Abstract

Diabetes Mellitus is a chronic metabolic disorder which is characterized by increased blood glucose level caused by deficiency of insulin. Oral route is the most important and preferred route because of ease of administration, accurate dosage, self-medication, pain avoidance and most importantly the patient compliance. Tablet is the most preferred conventional oral unit dosage form. During tablet administration dysphasia is the main problem. Fast dissolving tablets (FDTs) can reduce this problem by dissolving and disintegrating rapidly within few seconds in mouth without water. Aim of the study was to overcome the problem of dysphasia by fast disintegration of tablets within few seconds and use in the treatment of diabetes mellitus. Fast dissolving tablets can be prepared by direct compression method. Preparation of FDTs by Direct Compression Method: FDTs can be prepared by direct compression method by using co-processed superdisintegrants like crosspovidone, sodium starch glycolate, mannitol, microcrystalline cellulose etc. as a diluents, sweetening agent, flavor, magnesium stearate, talc used as a lubricant and glidants. Fast dissolving tablets have emerged as an alternative to conventional dosage forms by improvement in patient compliance. These are convenient for administration for disabled, bedridden patients and for travelers and busy people, who do not always have access to water. Various oral hypoglycemic drugs are given in combination for treatment of type II Diabetes Mellitus for long term therapy. Hence Fast dissolving tablets can overcome the dysphasia faced by patients thus enhances the bioavailability. Fast dissolving tablets become advantageous for those patients which have swallowing problem for example pediatric, geriatric and mentally ill patients.

ORTHOPEDIC ANALGESIC IMPLANT FOR PROLONGED DRUG DELIVERY

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Abstract

Implants provide the prolonged drug delivery in the microenvironment of the injected/ inserted site for local or systemic drug delivery. In the present study the implants of diclofenac were prepared for the improved anti inflammatory and analgesic effects in rheumatoid arthritis with better compliance and improved quality of life of the patients. The biodegradable implants of diclofenac sodium were prepared using gelatin and sodium alginate with two different ratio of gelatin and sodium alginate [3:1 (F1) and 1:3 (F2) %w/w]by heating and congealing method followed by hardening with formaldehyde. The implants were evaluated for content uniformity, thickness, weight variation presence of free formaldehyde and in-vitro drug release study. Both the formulation showed good physical properties. F1 showed the smooth surface while the F2 implants showed the rough surface. The % drug content was 98.0 and 91.24 % for the F1 and F2, respectively. The F1 formulation showed the maximum drug release with 91.23 % at the end of 102 hour (4 days approx.). Therefore, it was concluded that the gelatin-alginate implants loaded with diclofenac can be used for the improved and prolonged drug release in orthopedic or arthritic patients.

ISPAGHULLA HUSK GEL BASED BUOYANT MICROSPHERE OF DILTIAZEM HCl

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Abstract

Diltiazem hydrochloride shows absorption window phenomenon (absorbed better from upper gastro intestinal tract). Therefore, developing its floating microspheres can improve the overall bioavailability of drug due to improved gastric retention. In this study four formulations of diltiazem Hydrochloride were prepared as the floating microspheres by ionotropic gelation method using sodium alginate and calcium chloride with the addition of ispaghulla husk gel. Dried floating microspheres were evaluated for micromeritic properties (flow properties, densities, particle size determinations) *in vitro* floatability studies and *in vitro* drug release studies. The prepared floating microspheres of diltiazem showed satisfactory physicochemical properties and floating behavior. The densities of floating microspheres were less than the density of gastric fluid, therefore showed an extended floating time of more than 12 hours over the gastric fluid. The percent loading of prepared floating microspheres ranged from 82.28 % to 91.0%.*In vitro* drug release studies of all the prepared floating microspheres showed extended drug release upto 10 hrs with the drug release ranging from 87.24 % to 96.89 % at the end of 10 h. The formulations showed the controlled drug release with matrix diffusion process. Therefore, it was concluded that the floating microspheres of the diltiazem can be helpful in the improvement of drug release by improving the gastric retention and by controlling the release of the drug in the absorption window.

GENERALIZATION OF ALCOHOLISM IN ADULTS INDIVIDUAL IN DEHRADUN, UTTRAKHAND

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Abstract

The aim of the study is generalization of alcoholism in adult's consumption patterns and behaviour change (hyper tension insomnia, meningitis, suicide, alcohol poisoning demographic variables, anxiety) among adults. In addition to this, economic cost, people with alcohol use disorders engage in behaviors that have adverse effects on themselves and those around them. For example, the risk of mortality is increased among adolescents and young adults who engage in problem drinking.To understand the degree to which findings may be generalizable across state. Epidemiological studies quantify the seriousness of alcohol related problems arising from drinking, with a glowing incidence reported in college alcohol consumption in humans is the third leading preventable cause of death. We analyzed self assessment data in patient of alcoholism in Pharmacy College. This acute concentration on age of individual 15-25yrs .The study population included adult male & female population. A structured based questionnaire was used to collect information regarding the characteristics, history of alcoholism and regarding factors. Those who began drinking before 15 yrs were more likely to experience alcohol dependence ever. The effectiveness of local alcohol prohibition has been mixed and is mostly a function of geographic isolation. Research on alcohol consumption behaviour is focused younger adults.

Keywords: Alcoholism, Quality of life.

MULTIDRUG DRUG THERAPY IN THE TREATMENT OF LEPROSY

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Abstract

Leprosy is an infectious disease caused by an obligate intracellular bacillus *Mycobacterium leprae*.Leprosy, in which the cell-mediated immunity is very ineffective and so there is a widespread dissemination of the bacilli. In 2002 the World Health Organization (WHO) reported a prevalence of 1 per 10,000 as opposed to 12 per 10,000 15 years earlier .Significant improvements in leprosy control have occurred, but leprosy remains a public health problem in many countries due to its high incidence and rate of transmission. Drug treatment aims to reduce morbidity and prevent complications, so combinational drug therapy by W.H.O has been introduced. In this study,Rifampicin ,dapsone and clofazimine taken as a MDT. Paucibacillary leprosy - negative smears at all sites; single or only a few hypopigmented and hypo-aesthetic skin lesions.Multibacillary leprosy - either positive smears at any site, or multiple (>5) hypopigmented, hypoanaesthetic or erythematous skin lesions (sometimes poorly defined)..Tuberculoid or lepromatous leprosy- After exposure to leprosy and the incubation period, leprosy may fluctuate between various stages depending on the individual's cell-mediated immune response or in response to therapy. A three-drug regimen is recommended for multibacillary leprosy (lepromatous, borderline-lepromatous and borderline leprosy). The following regimens are used in leprosy:Rifampicin (monthly), dapsone (daily) and clofazimine (300 mg monthly and 50 mg daily).Multibacillary leprosy should be treated for at least two years. A two-drug regimen is used for paucibacillary leprosy (borderline-tuberculoid, tuberculoid, and indeterminate). The following regimens are used Rifampicin (monthly) and dapsone (daily).Paucibacillary leprosy should be treated for six months. Multi drug regimen is better than single drug regimen.

Keywords: Multidrug therapy, paucibacillary, multibacillary.

ROLE OF MICROSPHERES IN COLON TARGETED DELIVERY SYSTEM

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Abstract

Various routes of drug administration have been explored for the effective delivery of the drug to the target site. The oral route is considered to be most convenient for the administration of drugs to patients. But it has a serious drawback in conditions where localized delivery of the drug in the colon is required. An ideal controlled drug delivery system is one which can overcome some of the problems associated with conventional therapy and enhance the therapeutic efficacy of a given drug. Colon targeted drug delivery system has gained importance not just for the delivery of the drugs for the treatment of local diseases associated with the colon like Angiodysplasis of the colon, Appendicitis, Chronic functional abdominal pain, Colitis, Colorectal cancer, Colorectal polyp,Constipation, Crohn's disease, Diarrhea, Diverticulitis, Diverticulosis, Hirschsprung's disease, Ileus, Intussusception, Irritable bowel syndrome, Ulcerative colitis and toxic megacolon etc but also for other including systemic delivery of proteins, therapeutic peptides, anti-asthmatic drugs, antihypertensive drugs and anti-diabetic agents. Colon target aimed mainly because of less enzymatic activity, longer transit time so it is suitable to deliver the protein and peptide drugs. Microspheres are small spherical particles, with diameters in the micrometer range (typically 1μm to 1000μm (1 mm)). Microspheres are sometimes referred to as microparticles. Solid and hollow microspheres vary widely in density and, therefore, are used for different applications. Hollow microspheres are typically used as additives to lower the desity of a material. Solid microspheres have numerous applications depending on what material they are constructed of and what size they are. This review article is a discussion regarding different role of microspheres in colon targeted drug delivery systems.

Keywords: Microsphere, Colon targeted drug delivery system,

PREVALENCE ON OVER THE COUNTER DRUG USED IN PHARMACY COLLEGE IN DEHRADUN, UTTARAKHAND

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Abstract

This study was undertaken to determine the knowledge, attitude & practice of self medication among Pharmacy students, Dehradun. This study was an anonymous, questionnaire-based, descriptive study. A self-developed, pre-validated questionnaire was filled by 1st, 2nd, 3rd & 4th year pharmacy students. The practice of self-medication in our study was common and often inappropriate and this high prevalence is a cause of concern. Education and proper information about the drugs may go a long way in promoting responsible self medication. Self medication is defined as the use of medication by a patient on his own initiative or on the advice of a Pharmacist or a lay person instead of consulting a medical practitioner. Studies done on self medication reveal that it is a fairly common practice, especially in economically deprived communities. In developing countries like India, easy availability of a wide range of drugs coupled with inadequate health services result in increased proportions of drugs used as self medication compared to prescribed drugs. In several studies it has been found that inappropriate self-medication results in wastage of resources, increases resistance of pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence. On the other hand, if done appropriately, self-medication can readily relieve acute medical problems, can save the time spent in waiting to see a doctor, may be economical and can even save lives in acute conditions . High prevalence of self medication in our study is a cause of concern.

Keywords: Prevalence, Over the counter drug

PREPARATION AND EVALUATION OF ALGINATE, PECTIN AND GUARGUM GEL BEADS (DIFFERENT PROPORTIONS) CONTAINING TRAMADOL HYDROCHLORIDE USING EMULSION-GELATION METHOD

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Abstract

Oral sustained drug delivery system is complicated by limited gastric residence time. Rapid GI transit can prevent complete drug release in the absorption zone and reduce the efficacy of the administered dose since majority of the drugs are absorbed in the stomach or upper part of small intestine. To overcome this limitation, several controlled drug delivery system with prolonged gastric residence times have been reported such as floating drug delivery system, swelling or expandable, mucoadhesive systems, modified shape systems and other delay gastric emptying devices. Among these systems, FDSS has been most commonly used; FDDS has a lower density than gastric fluids thus remain buoyant in the stomach without effecting gastric emptying rate for a prolonged period of time. The system floats in the gastric content and the drug released slowly from the system at desired rate. Multiple unit system such as floating beads prepared by emulsification technique has also been developed. Tramadol is a centrally-acting analgesic, used in treating moderate to moderately severe pain, including treatment for restless leg syndrome, acid reflux, and fibromyalgia. Floating system of oil entrapped Ca-alginate, Ca-alginate with pectin and Ca-alginate with guargum beads was prepared by an emulsion- gelation method and its morphology and buoyancy were investigated. The oil-entrapped beads showed excellent, immediate buoyancy in the acidic environment of gastric fluid if they contained a sufficient amount of oil, depending on the relative density of oil which can become useful tool for development of multiparticulate system for high water soluble drug like tramadol hydrochloride.

Keywords: Alginate Pectin beads, Alginate Guargum beads, Floating beads, Floating drug delivery system (FDDS).

PREPARATION AND BIOLOGICAL EVALUATION OF HERBAL GEL

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Abstract

In the present work herbal gel formulations were prepared and evaluated. The gel formulations were prepared using carbopol 934, *Curcuma longa*, *Ocimum sanctum* and honey. The gel formulations were evaluated for pH, drug content, appearance & homogeneity, grittiness, viscosity, *in-vitro* release study and antimicrobial study using *Staphylococcus aureus* and *Pseudomonas aeruginosa*. It was inferred from the results that the gel formulations were good in appearance and homogeneity, easily spreadable. The prepared gel formulations were having best antimicrobial activity when compared to marketed formulations.

Keywords: *Ocimum sanctum*, *Curcuma longa*, homogeneity, antimicrobial, *in-vitro*

A REVIEW ON NEW GENERATION ORODISPERSIBLE TABLETS AND ITS FUTURE PROSPECTIVE

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Abstract

Advancements in oral delivery of active ingredients include a number of technologies, many of which may be classified as oral disintegrating tablets (ODTs). A number of companies have marketed products using various nomenclatures including ODT as well as their own trademarked names. The new generation of orally disintegrating tablet (ODT) technologies is no longer limited by dosage strength, bitter active pharmaceutical ingredients (APIs), and narrow therapeutic applications. Today's emerging technologies can produce robust, versatile tablets with exceptional taste masking and controlled release, broadening the applications of this dosage form. Over the last decade, ODTs have grown steadily in demand and importance as a convenient, potentially safer alternative to conventional tablets and capsules. ODTs are solid dosage forms that disintegrate in the mouth in less than 60 seconds, and are thus swallowed without the need for water. Since their introduction to the market in the 1980s, ODTs have become one of the fastest growing segments of the oral drug delivery industry, and their product pipeline is rapidly expanding. They are particularly beneficial to people who have difficulty taking conventional solid dosage forms, including children, the elderly, patients who have swallowing difficulties, the mentally ill, and the disabled. This review depicts the various formulation techniques, ingredients used, and overview of patented formulations. 39

Keywords: Oral disintegrating tablets, conventional dosage form.

PHARMACOGENOVIGILANCE: A NEW INSIGHT IN PHARMACOVIGILANCE

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Pharmacogenovigilence is a programme which involve the integration of pharmacogenomics into pharmacovigilance studies. Since the genes play a crucial role in variability in response to medicines, it make pharmacogenomic of adverse drug reactions a very essential programme. Pharmacogenomics involve the study of variations of DNA and RNA characteristics as related to drug response. Genetic variation in drug targets (e.g. receptors) can immensely effect drug efficacy and ADME parameters. Thus, pharmacogenovigilance is the science of determining how genetic variability influences physiological responses to drugs, from absorption and metabolism to pharmacologic action and therapeutic effect. The term 'pharmacogenetics' and 'pharmacogenomics' are often used synonymously, pharmacogenetics study an unexpected drug response and try to find a genetic cause, while pharmacogenomics study genetic differences within a population that explain certain observed responses to a drug or susceptibility to a health problem. Genetic variants in drug metabolizing enzymes can have a significant effect on the way a person responds to a drug. They can speed up or slow down enzymatic activity, or even inactivate an enzyme. In some patients, known as rapid metabolizers, drugs are metabolized too quickly, thus minimising the efficacy while in others the metabolism may be too slow leading to the toxic effects. Thus the aim is to study such genetic variations by the use of molecular genetic approaches to understand differences in drug response and tolerability in order to get maximum drug efficacy and to minimize the ADRs.

Keywords: Pharmacogenovigilance, pharmacovigilance, pharmacogenetics, pharmacogenomics.

FORMULATION AND EVALUATION OF HERBAL HAIR OIL FOR THE DISORDERS OF HAIR

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ABSTRACT

Hair is one of the defining characterstics of mammals , specifically humans and has a number of important biological issues. It is associated with youthfulness and beauty and hence hair loss can make men and women feel self conscious. There are various disorders associated with hair like alopecia areata, telogen effluvium, anagen effluvium etc. Synthetic treatments can lead to various side effects so stress has been given to herbal hair care for improving the quality and texture of hair as well as treating alopecia. This review presents an overview on plants identified to possess hair growth activity in various ethno-botanical studies and surveys of traditional medicinal plants. There are various causes for hair loss and the treatments offered include both natural or synthetic products to treat the condition of hair loss (alopecia), natural products are continuously gaining popularity mainly due to their fewer side effects and better formulation strategies for natural product extracts. It covers different herbs and herbal formulation that are believed to be able to reduce the rate of hair loss and at the same time stimulate new hair growth. A focus is placed on their mechanism of action and also covers various isolated phyto constituents possessing hair growth promoting effects.

Keywords: alopecia areata, telogen effluvium, anagen effluvium, ethno-botanical, phyto-constituents.

EVALUATION OF ANTIUROLITHIATIC POTENTIAL OF *KIGELIA AFRICANA* FRUIT EXTRACTS

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Abstract

Kigelia africana (Lam.)Benth. *(*Family*;* Bignoniaceae*)* is widely used for treatment of various diseases including renal disorders in Africa and India as traditional medicine. The aim of this study was to evaluate the antiurolithiatic activity of alcoholic and aqueous extract of *Kigeliaafricana* fruits (KAFE) as treatment for renal stones. In vitro calcium oxalate (CaOx) crystallization inhibitory effect of KAFE was determined by measuring crystal size microscopically and crystal dissolution quantitatively in synthetic urine. Simultaneously a supporting two step vice-versa reactions were assessed (New method) in support to this study. In a rat model of urolithiasis, induced by adding 0.75% ethylene glycol (EG) in drinking water and effect of simultaneous treatment of KAFE (100-200 mg/kg) was observed for 28 days. KAFE inhibited CaOx nucleation, aggregation and crystal formation in the synthetic urine in vitro. The lithogenic treatment caused polyurea, weight loss, hyperoxaluria and impairment of renal function which was prevented by KAFE. Hyperoxaluria and CaOx crystal deposition in the renal tubules caused by EG intake was prevented by KAFE treatment. This study indicates that the antiurolithiatic activity of *Kigelia africana* fruit extracts (KAFE) possibly mediated through inhibition of CaOx crystallization, hypo-oxaluria and improvement of kidney function as well as the cytoprotective effect may justify its curative and prophylactic use in urolithiasis.

A REVIEW ON HERBAL TREATMENT FOR PSORIASIS

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Abstract

Psoriasis is an immune mediated inflammatory disease, which is having no permanent cure. Though, there are several treatment methods to treat psoriasis, no particular medication claims a satisfactory and complete remedy. A wide range of synthetic therapeutic agents have also been reported to cause psoriasis as their adverse effect. Herbal drugs by virtue of their safe nature and easy availability may lend themselves as potential anti-psoriatic moieties. Before developing a herbal drug candidate the key players of psoriasis to develop should be thoroughly understood, which includes T-cell activation, T-cell trafficking, Cytokinase inhibition. The paper aims to explore the proliferation and activation mechanism of psoriasis, psoriasis caused by certain drugs and different plant resources known to have anti-psoriatic potential. A more scientific investigation on these herbal resources must be performed to develop a potent, safe and reliable therapy. About 75% of patients have mild-to-moderate psoriasis, amenable to topical treatment is lifetime controlling herbals remedies like- Aloe, Cayenne, Chamomile, Dong Quai, Emu oil, Evening prime rose oil, Fish oil, Tea tree oil, Turmeric, Slippery elm, Wintergreen, Shark cartilage, Milk thistle, Glucosamine, Flexseed oil are needed. They are mostly used as topical agent and increase the flow of blood in the capillaries under the skin, helpful in healing wounds, to treat minor injuries, irritation of the skin and reduce inflammation. Herbal remedies for treatment psoriasis diseases to overcome some adverse effect, antagonistic effect and bioavailability of drug. Herbs for psoriasis which enhance the performance of the body's immune system and the liver can have beneficial results. They can help to provide relaxation and to clear the blood of impurities by supporting the liver, adrenal glands, the intestine and the lymphatic system.

Keywords: Immune, Inflammation, Cytokinase, T-cell activation, herbal drugs.

PHARMACOVIGILANCE PROGRAMME OF INDIA

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Abstract

Ministry of Health & Family Welfare, Govt. of India launched Pharmacovigilance Programme of India (PvPI) in 2010. Indian Pharmacopoeia Commission is functioning as National Coordination Centre (NCC) for PvPI. It collects and evaluates spontaneous reports of adverse reactions to medicines, vaccines, medical devices and herbal products from all Health Care Professionals (HCPs) & consumers/patient. To monitor ADRs and report to NCC, ADR Monitoring Centers (AMCs) have been setup all over India. At present 179 AMCsare enrolled under NCC-PvPI. These AMCs are Medical Council of India (MCI) approved medical colleges & hospitals, medical/central/autonomous institutes, public health programmes and corporate hospitals. To promote patient safety more effectively several initiatives have been taken by PvPI to reach general public like launch of helpline number (toll free), medicine side effect reporting form in different vernacular languages, reporting through android phones etc. Still the need of hour is to create more awareness and all the HCPs are invigorated to report ADRs to safeguard public health.

THE ANTIOXIDANT ACTIVITY OF METHANOLIC EXTRACT OF FRUITS OF *WITHANIA SOMNIFERA* (ASHVAGANDHA)

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Abstract

Withania somnifera (Ashvaganda) is a member of the *solanaceae* family. It has been reported to show various biological activities including anti-inflammatory, sedative, general tonic, diuretic activity etc. The antioxidant activity of fruit of withania somnifera was evaluated in the present study by the DDPH free radicals scavenging method. Methanolic extracts of withania somnifera was prepared by cold infusion method for antioxidant activity against 0.1 mm DDPH (2,2 diphenyl-1-picrylhydrazyl) free radical. Various concentrations (50,100,150,200,250,500mcg/ml) of fruit extract (in water) and standard (0.1 N Butrylated hydroxy toluene in methanol) were prepared. The freshly prepared 0.1 mm solution of DPPH in methanol (1.5 ml) was added to 3.5 ml of extract/ standard solutions of different concentrations (50-500µg/ml). Thirty minutes later, the absorbance was measured at 517nm.It was found that the fruit extract showed comparable free radical scavenging activity as that of standard (BHT). At the concentration of 200,500mcg/ml, the extract of Withania showed maximum free radical scavenging activity (84.39 %, 85.39 % inhibition of DPPH). It was also evident that the antioxidant activity of the extract increased with the increasing concentration. The study concluded that the methanolic extract of withania somnifera fruits has significant antioxidant activity.

DESIGN AND EVALUATION OF OFLOXACIN FLOATING MICROSPHERES

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Abstract

The objective of the study was to prepare floating microspheres of Ofloxacin by emulsion solvent evaporation method using Ethyl cellulose, Polyvinyl pyrrolidone, Poly(vinyl alcohol) in different ratios of polymer. As Ofloxacin is preferably absorbed from the upper part of the gastrointestinal tract and is readily soluble in the acidic environment of the stomach, the floating microspheres of ofloxacin were formulated to develop gastroretentive formulation. The different formulations in various concentrations were taken and marked as F1, F2, F3 and F4. Percent loading efficiency was found in range of 25-69%.The order of percent loading was found to be as f4>f1>f3>f2. Particle size analysis of f1, f2, f3 and f4 formulations was estimated by optical microscopy in the range between 322.30 µm and 388.50 µm. *In vitro* floatability studied revealed that most of the microspheres (57.5 to 96.5%) were floatable and the order of floatability was F1>F3>F2>F4. Formulation F2 containing ethyl cellulose (1%) showed the maximum release. The formulations (f1-f4) showed controlled drug release by matrix diffusion process with zero order rate kinetics. F2 showed higher percent cumulative drug release, good floatability than F1, F3 and F4.The results of all physicochemical with theoretical limits.

Keywords: Floating microspheres, Ofloxacin, EC, *In-Vitro* release studies

TRANSDERMAL DRUG DELIVERY SYSTEM-A SMART DELIVERY SYSTEM OF MEDICINE

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Abstract

Transdermal drug delivery systems (TDDS), also known as "patches," are dosages form designed to deliver a therapeutically effective amount of drug across a patient's skin. Transdermal delivery provides a leading edge over injectables and oral routes by increasing patient compliance and avoiding first pass metabolism respectively. Transdermal delivery not only provides controlled, constant administration of the drug, but also allows continuous input of drugs with short biological half-lives and eliminates pulsed entry into systemic circulation, which often causes undesirable side effects enhancement of therapeutic efficiency and maintenance of steady plasma level of the drug. Due to large advantages of the TDDS, many new researches are going on in the present day to incorporate newer drugs via the system

THERAPEUTIC AND MEDICINAL USES OF ALOE VERA

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Abstract

The plant *Aloe vera* is used in Ayurvedic, Homoeopathic and Allopathic streams of medicine, and not only tribal community but also most of the people used for food and medicine. The plant leaves contains numerous vitamins, minerals, enzymes, amino acids, natural sugars and other bioactive compounds with emollient, purgative, antimicrobial, anti inflammatory, anti-oxidant, aphrodisiac, anti-helmenthic, antifungal, antiseptic and cosmetic values for health care. This plant has potential to cure sunburns, burns and minor cuts, and even skin cancer. The external use in cosmetic primarily acts as skin healer and prevents injury of epithelial tissues, cures acne and gives a youthful glow to skin, also acts as extremely powerful plant. Extensive work has been done on this plant but still it requires more research and development work for further plant use in future. The present review emphasizes the traditional therapeutic uses of *Aloe vera* with its recent advances in pharmacological investigations that would be a useful reference for further plant drug researches and acts as standardization parameter for further use.

KEYWORDS: Aloe Vera, bioactive compounds, therapeutic significance.

A COMPLETE REVIEW ON ZIKA VIRUS

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Abstract

A widespread epidemic of Zika virus (ZIKV) is a mosquitoborne arbovirus in the family *Flaviviridae*, genus *Flavivirus*. It was first isolated in 1947 from a rhesus monkey in the Zika forest of Uganda . Sporadic human cases were reported from the 1960s in Asia and Africa. The first reported large outbreak occurred in 2007 on Yap Island, Federated States of Micronesia. The largest known ZIKV outbreak reported started in October 2013 in French Polynesia, South Pacific, a territory of France comprising 67 inhabited islands; an estimated 28,000 persons (11% of the population) sought medical care for the illness. ZIKV are transmission by the bites of Ades species mosquitoes, blood transfusion, organ or tissue transplantation or sexual intercourse. The most common symptoms of Zika fever are rash, fever, arthralgia, and conjunctivitis and several neurologic complications. The diseases caused by the viruses are Microcephaly, Guillain-Barre Syndrome and Dengue like Syndrome. Zika virus, RNA was identified in the amniotic fluid of the women whose fetuses has been found to have Microcephaly by parentral Ultrasound. The diagnosis can be performed by PCR, IgG and IgM antibodies detection under the influence of following methods: Autopsy and CNS Examination, Electron Microscopy, Indirect Immunofluorescence, Microbiological investigation, parentral Ultrasound, Semen and Urine Examination. The complete genome of ZIKV was recovered from the fetal brain. There is no medicine to treat Zika virus, and no vaccine to prevent it. Use natural repellents like citronella, neem oil, basil leaf or use chemical repellents like DEET, Picardin, PMD, IR3535, and other oil of lemon eucalyptus compounds to avoid from that mosquito bites.

Key words: Ades, Arbovirus, Microcephaly, genome, repellents (citronella, neem oil).

FORMULATION AND EVALUATION OF ACECLOFENAC GEL

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Abstract

Topical drug administration is localised in drug delivery system through various topical routes like skin, rectal and vaginal. Skin is the main route of topical drug delivery system, so the present study has been undertaken with an aim to formulate and evaluate Aceclofenac gel to be used topically. Aceclofenac is a non-steroidal anti-inflammatory drug (NSAIDs) used in treatment of rheumatoid arthritis and osteoarthritis. Aceclofenac has ulcerogenic effects when administered orally. To overcome this effect, Aceclofenac gel is prepared using various polymers such as Carbopol, HPMC and Sodium CMC (gelling or thickening agent; also possess film forming properties and transparent characteristics), Triethanolamine (neutralize the pH) and PEG (penetration enhancer). The gel was formulated by changing the polymer concentrations. The increase in polymer concentrations significantly increased the consistency of gels. Formulated gel was evaluated for various parameters such as physical appearance, pH, viscosity, spreadability, skin irritancy and in-vitro drug release. The in-vitro drug release was evaluated by Franz diffusion cell.

Keywords: Aceclofenac, NSAID, Ulcerogenic, HPMC, Sodium CMC, PEG and Triethanolamine.

TRADITIONAL USE OF MEDICINAL PLANTS IN INDIA

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Abstract

Traditional medicine has remained as the most affordable and easily accessible source of treatment in the primary healthcare system of resource in poor communities in India. The local people have a long history of traditional plant usage for medicinal purposes. Despite the increasing acceptance of traditional medicine in India, this rich indigenous knowledge is not adequately documented. Documentation of plants used as traditional medicines is needed so that the knowledge can be preserved and the utilized plants conserved and used sustainably. The primary objective of this paper is to summarize information on traditional uses of medicinal plants in India, identifying research gaps and suggesting perspectives for future research. A wide variety of medicinal plant species are found all over in India. These plant species are used to treat various diseases and disorder categories, with the highest number of species used for various disorders such as GIT infections, Sexually transmitted infections, Cold, Cough, Sore throat, Renal diseases, Hepatic disorders, Diabetes, Hypertension and Gynaecological problems. Shrubs and trees (38% each) were the primary sources of medicinal plants, followed by herbs (21%) and climbers (3%). The therapeutic claims made on medicinal plants documented in India are well supported by literature, with 82.8% of the plant species having similar applications in other regions of India as well as other parts of the world and 89.2% having documented biological and pharmacological properties. Even this traditional system is used in the field of cosmetics, as herbal cosmetics. This study illustrates the importance of traditional medicines in the treatment and management of human diseases and ailments in India.

Keywords: Medicinal plants, Traditional knowledge, Therapeutic significance, India.

ANDROGRAPHIS PANICULATA: A BIOLOGICALLY POTENT PLANT

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ABSTRACT

Nature has been a source of medicinal agents for thousands of years and since the beginning of mankind. The application of medicinal plants especially in traditional medicine is currently well acknowledged and established as a viable profession. Medicinal plants are an important source for the therapeutic remedies of various ailments. Kalmegh (*Andrographis paniculata* Nees.) family Acanthaceae is commonly known as 'King of Bitters' has wide range of medicinal and pharmacological applications. It is distributed in tropical Asian countries or in isolated patches. It is used in different traditional system of medicine and exhibits anti-inflammatory, anti-HIV, anti-oxidant, antiparasitic, antispasmodic, antidiabetic, anti-carcinogenic, anti-pyretic, hepatoprotective, nematocidal and various other activities. It is a potent scavenger of a variety of reactive oxygen species (ROS) including superoxide anion, hydroxyl radical, singlet oxygen, peroxynitric and nitric oxide. Among several active chemical constituents, andrographolide, neoandrographolide and dehydroandrographolide are most important bioprotectants with wide range of therapeutic applications. Extensive work has been done on this plant but still it requires more research and development work for further plant use in future. The present review emphasizes the traditional therapeutic uses of *Andrographis paniculata* with its recent advances in pharmacological investigations that would be a useful reference for further plant drug researches.

KEYWORDS: *Andrographis paniculata*, kalmegh, Andrographolides, Biological activities, traditional medicine.

ANTI-TUBERCULAR ACTIVITY OF MEDICINAL HERBS

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Abstract

Tuberculosis is considered as one of the deadliest diseases in India and rest of the world. The best source of drugs without hazardous effect to human systems is plant source. Herbs are the wonder source of phyto constituents which have varied inhibitory effects on deadly diseases. Various synthetic medicines are being used in the treatment of tuberculosis that are proved to cause anarchic side effects. Medicines derived from plants are nontoxic and work effectively unlike synthetic drugs. In this short review an attempt has been made to review some of the medicinal plants which proved to be anti tuberculic such as *Adhatoda vasica*, *Acacia Senegal*, *Morinda citrifolia*, *Lantana camara*,*Globularia alypum*, *Ipomea turpethum*, *Vitex trifolia*, *Withania somnifera*, *Humulus lupulus* etc.

Keywords: Tuberculosis, Drugs, Herbs, Synthetic drugs.

HERBAL REMEDY FOR DIABETES

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Abstract

Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar (glucose) levels that result from defects in insulin secretion or action. This is because the body does not produce enough insulin, or because the body cells do not properly respond to the insulin that is produced. Herbal treatment for diabetes has been a part of traditional medicine for thousands of years. *Swertia chirayita* (Gentianaceae) is a highly traded medicinal plant, widely used for its anti-diabetic potential. The aim of this review is to provide a synthesis of the current state of scientific knowledge on the medicinal uses, phytochemistry, pharmacological activities, safety evaluation as well as the potential role of plant biotechnology in the conservation of *Swertia chirayita* and to highlight its future prospects. Theoften used as adulterants and substitutes of Swertia chirayita were analyzed for their antioxidant activity, α-glucosidase inhibitory potential and total phenolic content and compared with that of *Swertia chirayita*. Aqueous and 12% ethanolic extracts of the herbs showed moderate to high antioxidant activity and moderate α-glucosidase inhibitory potential and was evident in the two herbs indicating their relevance as substitutes for *Swertia chirayita* for potential early stage management of type-2 diabetes and related complications. Microscopic evaluation revealed presence of epidermis, collenchymas, phloem, medullary rays, xylem, trichomes, starch grains, fibres, calcium oxalate crystals and xylem vessels.Phytochemicals screening reveald the presence of alkaloids, glycosides, flavonoids, steroids terpinoid,tannins, saponins, phenols, carbohydrates, proteins, and aminoacids.

Key words: Diabetes mellitus, herbal plants, Swertia chiraytia, insulin, alcoholic extracts

ROLE OF LDL AND HDL IN ATHEROSCLEROSIS

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Abstract

Atherosclerosis is a complex disease in which many processes contribute to lesion development. It is well accepted that low density lipoprotein plays a main role in the initiation and progression of atherosclerosis. A low level of high density lipoprotein and high serum levels of low density lipoprotein is an important risk factor for the development of cardiovascular diseases. The association between low levels of high density lipoprotein and increased risk for cardiovascular disease has been well established through epidemiological and clinical studies. Observational, biological and clinical evidence strongly suggests that high density lipoprotein is a promising target of therapeutic intervention. This relationship is supported by the potential antiatherogenic properties of high density lipoproteins, including its mediation of reverse cholesterol transport in which cholesterol from peripheral tissue is returned to the liver for excretion of bile. High density lipoprotein is a class of heterogeneous lipoproteins containing approximately equal amounts of lipid and protein. Reducing low density lipids level can lower the incidence of cardiac heart disease by up to one third.

Keywords: Atherosclerosis, cholesterol, lipoproteins.

THE DIFFERENCE IN EFFECT OF MEDICINE TAKEN BY PATIENTS WITH POLY CYSTIC OVARIAN DISEASE

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Abstract

Polycystic ovary syndrome (PCOS) is a common endocrine disorder of women of reproductive age, yet it is a condition the public is largely unaware of and that health care providers do not seem to fully understand affecting women of reproductive age and characterized by chronic an ovulation, hyperandrogenism, and polycystic. PCOS is characterized by a spectrum of symptoms, including irregular or no menstrual periods, excess hair growth on the face and body (hirsutism), weight gain, acne, ovarian cysts, and thinning of the hair on the scalp.The short- and long-term health problems associated with PCOS are significant, and include obesity, type 2 diabetes,cardiovascular disease, obstructive sleep apnea,complications during pregnancy,impaired fertility, and increased risk of endometrial cancer.Just as concerning is the fact that PCOS can be a stigmatizing conditionthat affects a woman's identity,mental health. It was found that early age group female such as 15 years is also suffered by this syndrome. Specially 19 to 35 age group are more pronounced. In my survey metformin and clomiphene citrate drugs are preferred most and to compare the better response among these two drugs. Apart from this I also found that clomiphene citrate has better response. Research on PCOS has primarily focused on its etiology and clinical characteristics and less on the psychosocial aspects of human development.

Keyword: Polycystic ovary syndrome, hyperandrogenism.

IN-SITU GELS: A REVIEW

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Abstract

Smart polymeric systems represent promising means of delivering the drugs. These polymers undergo sol-gel transition, once administered. *In-situ* gel structure occurs due to one or combination of different stimuli like pH change, temperature modulation and ionic exchange. Mainly *in-situ* gels are administered by oral, ocular, rectal, vaginal, injectable and intraperitoneal routes. The *in- situ* gel forming polymeric formulations offer several advantages like sustained and prolonged action in comparison to conventional drug delivery systems. Various natural and synthetic polymers are used for formulation development of in situ forming drug delivery systems. The article presents a detailed review of these types of polymeric systems, their evaluation, advancements and their commercial formulations.

Keywords: Polymers, In-situ, drug delivery

ANTIDIABETIC DRUGS IN AYURVEDA

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Abstract

Ayurveda the Indian traditional Medical science uses many drugs for diseases derived from medicinal plants & Minerals. Diabetes (Madhumeha) is an important human ailment afflicting many from various walks of life in different countries. This review focuses on Ayurvedic drugs like plants, minerals in single or compound form in various research institutes and articles. A list of Ayurvedic drugs having antidiabetic and related beneficial in treatment of diabetes is compiled. These include, *Trivanga Bhasma, Triphala Churna, Terminalia chebula, Nimbapatra, Ashvattha, Acacia arabica, Mangifera indica, Eugenia jambolana, Allium cepa, Allium sativum, Aloe vera, Tinospora cordifolia* etc. These plants are helpful in curing Diabetes mellitus. This review emphasizing on traditional use of medicine in the field of Ayurveda which acts as a standardization parameter for further study on diabetic drugs.

Keywords: Ayurveda, Diabetes , Antidiabetic drugs & traditional use.

PULSATILE DRUG DELIVERY SYSTEM

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Abstract

Pulsatile systems are gaining a lot of interest as they deliver the drug at the right site of action at the right time and in the right amount, thus providing spatial and temporal delivery and increasing patient compliance. These systems are turned according to body's circadian clock having a potential to improve quality of patients life undergoing conventional therapy. The principle rationale for the use of pulsatile release is for the drugs where a constant drug release, i.e. a zero-order release is not desired. The release of the drug as a pulse after a lag time has to be designed in such a way that a complete and rapid drug release follows the lag time. Various systems like capsular systems, osmotic systems, single and multiple-unit systems are based on the use of soluble or erodible polymer coating rupturable membranes and membrane permeability have been used. Products available as once-a-daily formulation based on Pulsatile release like Pulsincap, OROS, DIFFUCAPS. These systems are beneficial for the drugs having chrono-pharmacological behavior where night time dosing is required and for the drugs having high first-pass effect and having specific site of absorption in GIT. Methodologies of pulsatile drug delivery systems are classified as time controlled, stimuli induced, externally regulated (time controlled pulsatile delivery system). System used in asthma, rheumatoid arthritis, peptic ulcer, cardiovascular diseases, diabetes mellitus, hypercholesterolemia.

Keywords: Pulsatile drug delivery system, drug release, time controlled pulsatile delivery system.

REVIEW ARTICLE ON ARTERIOSCLEROSIS

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Abstract

Arteriosclerosis is the condition with thickening and hardening of the arterial walls with consequent loss of elasticity and lessened blood flow. These are of four types- Senile (thickening of media and intima of arteries), Hypertensive (elevation in BP), Monckeberg's or Medial calcific sclerosis (Calcification of arteries) and Atherosclerosis (deposition of cholesterol or Plaque formation on arterial walls). Atherosclerosis is the most specific and commonest of all. Arteriosclerosis and coronary heart disease have been considered as major health problem worldwide. It is a chronic inflammatory disease and less prevalent in Central and South America, Africa and Asia whereas more prevalent in USA and Japan. Arteriosclerosis leads to various Heart diseases (Angina, Myocardial Infarction and Heart attack) and Brain diseases (strokes and cerebral ischaemia). The various treatments available for Arteriosclerosis are Antiplatelet and Anticoagulant drugs, Cholesterol medicament (Statins) and Angioplasty & Fibronolytic therapy (surgeries are recommended in emergencies only or when medication fails). Even some herbal medicines such as Barley, Black/Green Tea, Garlic, Flavonoids, Antioxidants, Folic acids etc can also cure this disease. This review provides the detailed information of classification, pathophisology, epidemiology and treatments of Arteriosclerosis and Atherosclerosis.

Keywords: Arteriosclerosis, Atherosclerosis, Senile, Antiplatelet, Anticoagulant, Myocardial Infarction, Statin, Angioplasty & Fibronolytic therapy.

ANGINA PECTORIS

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Abstract

Angina is chest discomfort or pain caused by reduced blood flow to heart muscle. Coronary heart disease,fatty acid deposition inside coronary arteries result in narrowing of arteries, is the most common cause of reduced blood flow to the heart muscles in case of angina. Angina is of the two types: Stable angina, pain last for 5-15 min, Physical exercise,anxiety,and emotional stress can trigger it and unstable angina,give indication of heart attack.Clinical manifestation of angina ispressure,tightness,squeezing,burning.Various risk factors associated with angina are high blood cholesterol,high blood pressure, tobacco use,diabetes,obesity. Diagnosis of angina includeselectrocardiogram, exercisetolerance test,angiography and other blood test,cholesterol level and abnormal renal function. Goals of treatment include relief of symptoms, inhibition/ slowing of disease progression, prevention of future cardiac events and improved survival. Nitroglycerines are commonly used drugs in Angina. This review helps in prevention of risk factor that trigger angina and also help to choose appropriate therapy.

Keywords- Angina,heart muscle,pain,diagnosis,nitroglycerine.

ANTIANGINAL DRUG THERAPY

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Abstract

Angina is the most common heart disease affecting the people worldwide. It is more prevalent in the developed countries than in the developing countries. The overall incidence of angina in the UK in 2011 was 38 per 100,000 in men and 21 per 100,000 in women. Angina is a pain syndrome due to induction of an adverse oxygen supply and demand situation in a portion of the myocardium. The diagnosis of angina is challenging as it relies on symptoms description. The symptoms most often associated to angina are substernal chest pressure or tightening frequently with radiating pain to the arms, shoulders or jaws. Drug treatment for antianginal drugs includes: nitrates, beta-blockers, calcium channel blockers etc. Apart from all drugs, beta adrenergic blockers like isoxuprine, nylidrin and alfa blockers like prazosin, tolazoline, and phenoxybenzamine have been used in peripheral vascular diseases. However, no vasodilators can overcome organic obstruction. They are useful when vasospasm is completely or partly involved. PGI_2 has been employed in severe cases with rest pain. Hence all antianginal drugs are given to patients to cure the specific symptoms. Before starting antianginal drug therapy; it is very important to know the causes and the symptoms of angina for a successful therapy and its outcomes.

KEYWORDS: Angina, therapy, anti- anginal drugs.

REVIEW: BLOOD PRESSURE VACCINATION - AN ONGOING APPROACH

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ABSTRACT

Hypertension, also known as high blood pressure, is usually defined by the presence of a chronic elevation of systemic arterial pressure which may lead to heart disease or stroke. Blood pressure is measured as Systolic (maximum) and Diastolic (minimum) pressures in the arterial system. Normal blood pressure at rest is within 100-140 mmHg systolic and 60-90 mmHg diastolic. Many Antihypertensive drugs are used to treat hypertension. The most widely used antihypertensives are thiazide diuretics, calcium channel blockers, ACE inhibitors, Angiotensin II receptor antagonists and beta blockers. Most common risk factors include smoking, obesity, inactivity, family history and stress. Vaccinations for hypertension is still a remediable approach in many countries. The blood pressure vaccines that are being trialled so far, targets one of the body's own hormones called AngiotensinII which raises blood pressure by causing blood vessels to constrict. A vaccine named CYT006-AngQb is under investigation against AngiotensinII. CYT006-AngQb consists of virus- like particles covalently coupled to AngiotensinII. It's subcutaneous injection causes the immune system to produce antibodies which reduce angiotensinII blood levels thereby lowering the blood pressure. A DNA vaccine and similar other vaccines with modified immunogens and different adjuvants are under investigation. The ultimate goal of an anti-hypertensive vaccine is to improve drug compliance and to achieve perfect blood pressure control. Also, in developing countries like south Asia and Africa, antihypertensive drugs such as ARB are expensive. So, vaccines may provide cheaper and effective antihypertensive treatment.

Keywords: Hypertension, Vaccination, AngiotensinII, CYT006-AngQb.

RECENT ADVANCES ON MICROSPONGE DELIVERY SYSTEM: A REVIEW

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Abstract

Microsponges are porous, polymeric microspheres that are mostly used for prolonged topical administration. Microsponge drug delivery technology holds a great promise for reaching the goal of controlled and site-specific drug delivery and hence, has attracted wide attention of researchers.They are tiny sponge-like spherical particles with a large porous surface. Moreover, They may enhance stability,reduce side effects and modify drug release favorably. Microsponges are designed to deliver a pharmaceutical active ingredient efficiently at the minimum dose and also to enhance stability, reduce side effects, and modify drug release. The microsponge delivery system is a unique technology for the controlled release of topical agents and consist of macro porous beads, typically 10-25 microns in a diameter that possess a versatility to entrap wide range of active agents. conventional topical formulation are intended to work on the surface of the skin .normally ,upon application such formulations release their ingredients and producing a highly concentrated layer of active ingredient that is quickly absorbed.MDS technology is being used currently in cosmetics, OTC skin care, sunscreens and prescription products. Microsponge based drug delivery system produces controlled released action. This review article is a discussion regarding new advancement on microsponge delivery system.

Keywords: Microsponge, Topical delivery, Controlled release.

REVIEW ON HYPERLIPIDEMIA

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Abstract

Hyperlipidemia disease has afflicted humankind since antiquity. It is a condition excess of fatty substances Called lipids, largely cholesterol and try glycerides , in the blood. It is also called as hyperlipoproteinemia because these fatty substances travel in the blood attached to proteins. This is the only way that these fatty substances can remain dissolved while in circulation. It mainly divided into two types: 1.Hypercholesterolemia, in which there is a high level of cholesterol 2. Hypertriglyceridimia, in which there is high level of triglycerides, the most common form of fat. Pathophysiology mainly include: Decreased clearance of triglycerides –rich lipoprotein due to inhibition of lipase and triglycerides lipase . It caused by various factors which mainly include: Life style habbits or treatable medical condition (include obesity, not exercising, smoking), Diabetes (type2), pregnancy, Kidney disease. Potential treatment for lipid disorders include dietary changes, weight loss, regular exercise, quitting smoking, medication and lipid screening A Lots of study has been carried out by the researcher on this disease, but still people are not such aware about this. The aim of present study is to aware the people about the disease in brief.

DEVELOPMENT AND EVALUATION OF INTERPENETRATING POLYMER NETWORK HYDROGEL FOR CONTROLLED RELEASE OF CEFADROXIL

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Abstract

Controlled drug release enhances the safety, efficacy and reliability of drug therapy. Regulation of the drug release rate results in a reduction in the frequency of drug administration and good patient compliance. Hydrogel are cross linked, three-dimensional hydrophilic polymers, which swell without dissolving when brought into contact with water or other biological fluids. Hydrogel due to their attractive physicochemical and biological characteristics have attracted tremendous research interest as they are excellent candidates for the delivery systems of therapeutic agents. Hydrogel are defined as three-dimensional polymeric networks which can absorb from 10% up to thousands of times their dry weight of water or biological fluids without dissolving. The water content which makes hydrogel such a special class of materials is also responsible for their biggest disadvantage of the poor mechanical properties. The water content which makes hydrogel such a special class of materials is also responsible for their biggest disadvantage of the poor mechanical properties. Hydrogel with better mechanical properties could be obtained through the preparation of interpenetrating polymer network. Interpenetrating polymer network hydrogel of cefadroxil (antibiotic) is prepared by chemical cross linking method using chitosan and poly vinyl pyrrolidone polymers and glutaraldehyde as crosslinking agent.

Keywords: Chitosan, Polyvinyl pyrrolidone, Interpenetrating polymer network hydrogel, controlled release, Cefadroxil.

DENTIFRICES AS TOOTH WHITENING PRODUCTS

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Abstract

A tooth (plural teeth) is a small, calcified, whitish structure found in the jaws (or mouths) of many vertebrates and used to break down food. Teeth are not made of bone, but rather of multiple tissues of varying density and hardness. Dentifrices are agents used along with a toothbrush to clean and polish natural teeth. They are supplied in paste, powder, gel or liquid form. There have been many dentifrices produced over the years, many focusing on marketing strategies to sell products, such as offering whitening capabilities. Dentifrices contain ingredients that help reduce caries, plaque, gingivitis, hypersensitivity, calculus, stain, and halitosis. Some ingredients provide a therapeutic benefit, while other ingredients or additives contribute to the cosmetic benefits or physical properties of the dentifrice. The first dentifrice ingredient clinically proven to provide a health benefit was fluoride, which can be delivered from several different fluoride-based compounds. Over time, dentifrices evolved to provide multiple therapeutic and cosmetic benefits. 5-30% of the composition of dentifrices is made up of water. Some dentifrice coloring may produce an allergic reaction especially towards people who are hypersensitive to Aspirin.

Keywords: Calcified, Vertebrates, Gingivitis, Calculus, Halitosis, Therapeutic, Hypersensitive

AN OVERVIEW OF THE CURRENT METHODOLOGIES USED FOR EVALUATION OF ANTI-FERTILITY AGENTS

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Abstract

Discoveries in the past two decades have continued to improve our understanding of the mechanism of fertility and animal models have played a significant role to define the basic mechanism of anti-fertility agents. *In vivo* models have been developed in the past years to study the anti-fertility agents. Methods that are used in anti-fertility study can be categorized into method including estimation of sex hormones, assessment of sperm motility and count, assessment of sperm viability and morphology, mating trial test body, sex organ weights, abortifacient activity, post-coital anti-fertility activity, effect on oestrous cycle, anti-estrogenic activity, anti-gonadotrophic effect and quantification of fructose in seminal vesicle, histopathology, biochemical methods. This review aims to highlight some of the new and currently, used experimental models that are used for the evaluation of anti-fertility agents.

Keywords: Preclinical models, anti-fertility agents, Review.

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Int. J. Pharm. Med. Res. 2016 **ISSN: 2347-7008**

International Journal of Pharmaceutical and Medicinal Research

Journal homepage: **www.ijpmr.org**

Global Impact Factor: 0.434

ICV 2014: 34.68

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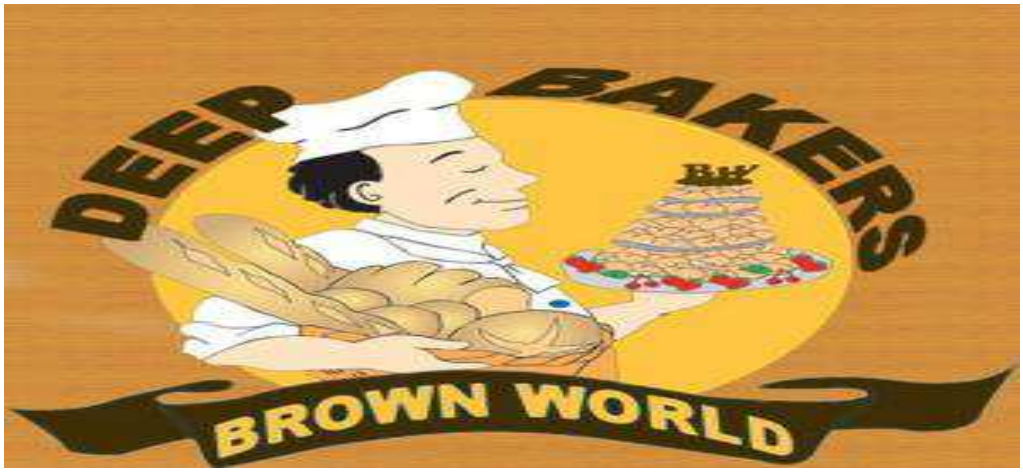

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