Navyug Vidyabhavan Trust's
C. K. Pithawalla Institute of Pharmaceutical
Science & Research, Surat - 395007

Honourable Late. Shri. Chhotubhai K. Pithawalla

(Founder & President)

Navyug Vidhyabhavan Trust, Surat

Editor's Message

Prof. Dr. Mahesh. G. Saralai
Principal,
C. K. Pithawalla Institute of Pharmaceutical Science and Research, Surat.

It gives me an immense pleasure to publish with pride **CKPIPSR E-Newsletter, Volume -9 Issues I, 2017**. The pride of every student and staff would be in his/her college. It was quite inspiring to watch and witness the potential of our students/staff unfolding at various stages and situations each day. Trying and testing times during the hectic semester system have elicited our students to put forth their best. A college may reach heights of glory but without materials like a college newsletter, the outside world may not know of it. Therefore, a college bulletin is vital in promoting what an institution offers. CKPIPSR Newsletter carries the contributions reflecting ethos and aspirations of the students, faculty and other team members of the institution. CKPIPSR Newsletter brings to light the names of the unsung heroes and their mighty deeds. I am happy that there is a dedicated team of staff and students who have presented the astonishing achievements of C. K. Pians in the fields of academics, research, sports and extra-curricular activities.

The management and the staff have been supportive of the various activities that were undertaken by the students in view of helping them reach the pinnacle of perfection and professionalism in whatever task they took on thus strengthens our journey of achieving excellence. There is nothing… absolutely nothing that stops the C.K.P.I.P.S.R juggernaut from rolling forward, going on boldly from one project to another leaving the spectators spell-bound. Everything that C.K.P.I.P.S.R. touches turns into gold.

It continues to sustain its growth. People reading this newsletter will realize the tremendous changes that are happening in the C.K.P.I.P.S.R. Campus. The CKPIPSR Newsletter is presenting a glimpse of the growth of the institution on many fronts. The college has been simply unstoppable in its progress as it has been actively involved in various activities that have brought to light the hidden talents of the college students and staff. The highly qualified and dedicated members of staff have always stood shoulder with the Principal and it is always a pleasure to be a part of a team which strives to bring out the talents of students.

CKPIPSR Newsletter has recorded achievements such as: academic excellences, conferences attended by staff members and students, competitions won by the hugely talented students/Staff, innovative projects carried out by students with the guidance of staff, among others. They stand as a witness to the monumental efforts taken by the management to make the college a centre of excellence in education and research.

I am sure the college will scale even greater heights in the years to come and serve many more millions in the society.

Congratulations to **Ms. Richa Vasava (Dept. of p'ceutical chemistry) and Ms. Falguni Rathod (Dept. of Pharmacognosy), Assistant Professor, Co-editor/Co-ordinator of CKPIPSR Newsletter** and my team for their determined efforts in bringing out this Newsletter.

Co-Editor's Message

Ms. Richa T. Vasava.
Assistant Professor,
(Department of P'ceutical Chemistry)

Ms. Falguni N. Rathod
Assistant Professor,
(Department of Pharmacognosy)

Dear CKPIPSR Students and Readers;
Welcome to **E-Newsletter, Volume-9, Issues-I, 2017.**

It is with great pleasure that we are here to welcome you to **CKPIPSR e-newsletter Volume 9, Issue 1, 2017**.

It gives us immense pleasure in bringing out the E-newsletter. The **e-newsletter** has includes academic excellence, students achievements, scientific articles, extra-curricular activities and events organized by the institute.

We would like to express our sincere thanks to Respected Principal Sir, **Prof. Dr. Mahesh G. Saralai** for giving us an opportunity and reliable guidance to Co-ordinate this e-newsletter. We also thank our colleagues, students and staff for their co-operation, support and encouragement during compilation of this e-newsletter.

Once again, we would like to thank all of those individuals who are, or have been, associated with the E-newsletter and we look forward to many more of publishing the E-newsletters in the future. Suggestions and Criticism for further improvement will be welcome.

We hope you all enjoy reading it as much as we do.

Gesture to Profession

Dr. Om Datt Gulati, a doyen of Pharmacology in India and a past-President of Indian Pharmacological Society. Dr Gulati has made notable contribution in the field of Autonomic Pharmacology. His work on adrenergic mechanisms is widely acclaimed

Date of Birth: January 31, 1927

Place of Birth: India

Occupation: as Principal

Educational Track

College: MBBS from Madras University

Higher study: M.D. (Pharmacology) from Agra University, and MS from the University of Colorado (USA) WORK

EXPERIENCE: Dr. Gulati, for most of his life worked at Medical College, Baroda (Gujarat). He also worked as Dean, Pramukh Swami Medical College, Karamsad, Anand and as a Director/Consultant of the Ambalal Sarabhai Enterprise, Baroda.

Professor Gulati pioneered the subject of autonomic pharmacology and guided a large number of students toward their M.D., M.Sc., and Ph.D. degrees in Pharmacology.

Dr. Gulati has 135 publications to his credit mostly in reputed international journals. He delivered scores of lectures and orations at several conferences and academic meetings.

He was associated in various capacities with various national and international organizations, e.g., NAMS, CSIR, MCI, ICMR, and Indian Institute of Chemical Biology.

Being one of the founder members of the Indian Pharmacological Society, he visited University of Colorado as a TCM fellow, University of Edinburgh as a WHO fellow, and William S Hall Psychiatric Institute, Columbia, as a teaching research scientist. A few months before his death, he attended the inauguration of permanent headquarter of IPS at Ahmedabad.

His meritorious research earned him numerous prizes, awards, and felicitations.

AWARDS AND HONOURS

1971: Shanti Swarup Bhatnagar Prize

1973: Shriram Gold Medal NAMS

1978: Shri Amrut Modi Research Foundation Award

1981: Uvunas Prize IPS

1981: Dr. B C Roy award

Dr. O. D. Gulati died on February 23, 2012

WINTER-2016 EXAM

- **Seventh Semester –** **Two** students secured more than 8 SPI while **seven** students secured more than 7 SPI in Summer-2016 exam.
- **Fifth Semester –** **Three** students secured more than 8 SPI while **nineteen** students secured more than 7 SPI in Summer-2016 exam.
- **Third Semester –** **Four** students secured more than 8 SPI while **thirteen** students secured more than 7 SPI in Summer-2016 exam.
- **First Semester –** **Nine** students secured more than 8 SPI while **ten** students secured more than 7 SPI in Summer-2016 exam.

MERITORIOUS STUDENTS

CLASS	RANK	NAME OF STUDENT	SPI
SEMESTER-VII	1	Indave Jaya	8.09
	2	Qadri Misbah Shaikh Zeba	8.00
	3	Jangra Sandeep	7.91
SEMESTER-V	1	Patel Bansari	8.36
	2	Patel Vyoma	8.09
	3	Patel Nihari	8.00
SEMESTER-III	1	Singh Chandani	8.91
	2	Rangrej Krishna	8.18
	3	Shaikh Tanzila	8.09
SEMESTER-I	1	Patel Devanshi	8.88
	2	Mehta Harmin	8.79
	3	Singh Sonal Variya Yash	8.73

State wise ranking of the Institute at GTU, Gandhinagar (2016-17)

Semester	% of Result of Institute	Institute wise rank
7th	56.67%	33
5th	47.37%	22
3rd	65.22%	18
1nd	40%	29

Feathers on the Crown

Conferences/ Seminars/ Workshop attended by Faculty and achievements

- **Dr. Mahesh G. Saralai (Principal) and team received a recognition award for selfless service to the society by Lions Club, Surat on 16th April, 2017.**

- **Dr. Pinal Harde(delegate) attended One Day National Seminar on "Drug Development and Validation of Herbal Products" organized by Maliba Pharmacy College, Bardoli on 21st January, 2017**

- **Dr. Pinal Harde(delegate) attended and participated in Poster Presentation at 4th International Congress of Society for Ethno-pharmacology, India "Health Care in 21st Century: perspective of ethnopharmacology and medicinal Plant Research" organized by Uka Tarsdaiya University, Bardoli on 23 – 25 February, 2017.**

- **Mrs. Mayuri P. Butani(delegate) attended GSPC sponsored "Two Days Of Refresher Course for Registered Pharmacists" organized by Maliba college of Pharmacy, Bardoli on 18th and 19th March, 2017.**

Conferences/Seminars/Workshop attended by Students &achivements

- **Nineteen students of second, fourth, fifth and sixth semester participated in competitions like power point presentation, Model presentation and poster presentation at "Pharma Start Up" organized by C. K. Pithawalla Institute of Pharmaceutical Science And Research, Surat on 7th January, 2017. Students got:**
  1st Rank: (Model Presentation): Lohia Naman, Bariya Niketa and Patel Vyoma
  2nd Rank: (Model Presentation): Bansari Patel and Yasmin Rangawala
  2nd Rank: (Power point): Bamaniya Prem
  3rd Rank: ((Power point): Qadri Misbah, Indave Jaya and Shaikh Misbah

- **Twenty two of fourth and sixth semester participated in events like power point presentstion, pharma marketing, pharma recipe, poster presentation, cricket, chess etc. at "Pharmafest'17" organized by Parul University, Limba, Waghodia on 10th and 11th February, 2017. Students Got:**
  2nd Rank: (PowerPoint Presentation): Ankit Tiwari
  2nd Rank: (Pharma Recipe): Parth Dave and Vasani Jinal

- **Ninety two students of second, fourth, fifth and sixth semester participated in competitions like Model presentation, myself medicine, pharmarecipe, chemo hunt & chemo car at "GTU tech-fest 2017" organized by C. K. Pithawalla College of Engineering and Technology and C. K. Pithawalla Institute of Pharmaceutical Science And Research, Surat on 6th and 7th March, 2017. Students got:**
  1st Prize
  1. **(Pharma Model): Lohia Naman, Bariya Niketa and Patel Vyoma**
  2. **(Myself Medicine): Qadri Misbah**
  3. **(Pharma recipe): Hinal Gajjar, Kanani Dharmistha & Abhay Mistry**
  4. **(Indian entrepreneur): Patel Bansari & Rangwala Yasmin**
  5. **Corpotrade: Tiwari Ankit & Vadile Priyanka**

- **Four students of six semesters and one student of fourth semester participated in various events like Pharma model, Dispensing, Bookies at "Festive De Pharma" organized by Maliba Pharmacy College, Tarsadi on 11th March, 2017. Students got: 1st prize (pharma ad and Pharma Model) Sonagara Payal, Vanecha Swati, Patel Ami, Vasani Jinal, Tiwari Ankit**

- **Eighteen students of four and sixth semester students participated in competitions like slow bike race and Gali cricket at "Technovation" organized by Bhagvan Mahavir College of Pharmacy, Surat on 17th March, 2017. 1st prize: (slow bike race) Tiwari Ankit**

- **Fourteen students of fourth semester participated in cricket competition at "Pharma Champion-ship" organized by Maliba Pharmacy College, Tarsadi on 20-22 March, 2017.**

- **Twelve students of fourth and sixth semester participated in various events like poster presentation, Model presentation, Pharma recipe etc. at "GTU Tech fest" (Central) organized by L. D. College of Engineering, Ahmedabad on 30th & 31th March, 2017.**

Publication

- A review on **"Herbal's use for Parkinson and Various Procedures for Parkinson Disease"** by M. G. Saralai, Patil Vishal S. and Manoj Alai; Journal of Bioinnovation, 2016, Volume 5, Issue 4.
- A research on "**Development and Evaluation of Polyherbal Formulation for the Treatment of Eczema"** A. G. Gandhi, M. G. Saralai, H. P. Patel, B. M. Patel, P. K. Jadav, International Journal of Pharma Research & Review, Sept 2016; 5(9): 20-29
- A research on **"Development and Validation of Stability Indicating RP-HPLC Method for Estimation of Fluvastatin Sodium in Bulk and Capsule Dosage Form"** by Ashok Akabari, Bhanubhai Suhagia, Mahesh Saralai, Vishnu Sutariya; Eurasian Journal of Analytical Chemistry-00016-2016-02.
- A research on **"Frequency of Satellite Associations of Acrocentric Chromosomes in Oral Squamous Cell Carcinoma Patients after 5-FU and Cisplatin Treatments"** by Pankaj Gadhia and Bhumika Desai; International Journal of Molecular Medical Science, 2016, Vol.6, No.1, 1-5.
- A review on **"Medicinal Value of *Mimosa pudica* as an anxiolytic and antidepressant: a comprehensive review"** by Zoya Shaikh, Samaresh Pal Roy, Pankti Patel, Kashmira Gohil, world journal of pharmacy and pharmaceutical sciences ,Volume 5, Issue 3, XXX-XXX Review Article ISSN 2278 – 4357, 2016.

Upcoming Events

- **69th Indian Pharmaceutical Congress 2017 held at Chitkara University, Haryana.**
- **18th International Congress of International Society for Ethnopharmacology, UK & 5th International Congress of the Society for Ethnopharmacology, India (SFEC 2018) will be jointly organized by Department of Pharmacy, University of Dhaka, Bangladesh in association with Society for Ethnopharmacology, India , On 13 to 15 January, 2018 at Dhaka, Bangladesh**

Events Organized

Pharma Start UP

One day "Pharma Start Up" events like power point presentation, poster presentation and Pharma model organized by C. K. Pithawalla Institute of Pharmaceutical Science And Research, Surat on 7th January, 2017.

"Second Free Health Check-up Camp"

On second death anniversary, one day "Second Free Health Check-up Camp"; a tribute to honorable late Shree Chhotubhai K. Pithawalla (Former president Navyug Vidyabhavan Trust. Surat) organized by C. K. Pithawalla Institute of Pharmaceutical Science And Research, Surat on 1st March, 2017.





GTU tech-fest 2017

Two day events like Model presentation, myself medicine, pharmarecipe, chemo hunt & chemo car at "GTU tech-fest 2017" organized by C. K. Pithawalla College of Engineering and Technology and C. K. Pithawalla Institute of Pharmaceutical Science And Research, Surat on 6th and 7th March, 2017.

Annual Day Celebration

Annual Day Celebration organized by our institute on 24th March, 2017. Events like Drama, Dance, Singing etc. performed by students.

Women Day Celebration

International Women's day celebration organized by our institute on 8th March, 2017. Dr. Pinal Harde given a lecture on "common health issues in women's and their remedies".

Excellence Press Note

સુરત | નવયુગ વિદ્યાભવનના ટ્રસ્ટના ભૂતપૂર્વ પ્રમુખ સ્વ છોટુભાઇ કે.પીઠાવાલાની પુણ્યતિથિ નિમિત્તે નવયુગ વિદ્યાભવન ટ્રસ્ટ સંચાલિત સી.કે.પીઠાવાલા ઇન્સ્ટિટ્યુટ ઓફ ફાર્માસ્યુટિકલ સાયન્સ એન્ડ રીસર્ચ દ્વારા બુધવારે એક નિઃશુલ્ક મેડિકલ કેમ્પનું આયોજન સુલતાનાબાદ સ્થિત મણીબેન પીઠાવાલા નિદાન કેન્દ્ર ખાતે સવારે 9થી 4 કલાક દરમિયાન કરવામાં આવ્યું હતું. જેમા શહેરના જાણિતા ડોક્ટરો દ્વારા નિઃશુલ્ક સારવાર ...માં આવી હતી. મોટી સંખ્યામાં દર્દીઓએ પણ કેમ્પનો લાભ લી...

...કે.પીઠાવાલા ઇન્સ્ટિટ્યુટ ઓફ ફાર્માસ્યુટિકલ સાયન્સ એન્ડ રિસર્ચ સુરતનું ગૌરવ

નવયુગ વિદ્યાભવન ટ્રસ્ટ સંચાલિત સી.કે.પીઠાવાલા ઇન્સ્ટીટ્યુટ ઓફ ફાર્માસ્યુટીકલ સાયન્સ એન્ડ રીસર્ચ તથા સી.કે.પીઠાવાલા કોલેજ ઓફ એન્જિ.ના સંયુક્ત ઉપક્રમે ગુજરાત ટેક્નોલોજીકલ યુનિવર્સિટી, અમદાવાદ દ્વારા GTU ટેક્નોફેસ્ટ ૨૦૧૭ ઝોન-૨નું આયોજન કરવામાં આવ્યું હતુ. જેમાં ૭૦૦૦થી વધુ વિદ્યાર્થીઓએ ઉત્સાહ પૂર્વક ભાગ લીધો હતો. જેમાં સી.કે. પીઠાવાલાના વિદ્યાર્થી લોહીયા નમન, ભારીયા નિકેતા અને પટેલ વ્યોમાએ મોડેલ પ્રેઝન્ટેશનમાં તથા કાદરી મિસબાહે માય સેલ્ફ મેડીસીનમાં તેમજ મિસ્ત્રી અભય, કાનાની ધર્મિષ્ઠા, ગજ્જર હીનાએ ફાર્મા રેસીપીમાં પ્રથમક્રમ પ્રાપ્ત કર્યો હતો. જ્યારે કીમો કારમાં પટેલ ધ્રુવ, શ્રદ્ધા પટેલ અને મિસ્ત્રી અભયે તેમજ કીમો હન્ટમાં પટેલ જય, મિશ્રા ધીરજ, ...ના ઝુમ્નોરા અને સાપરીયા ઉર્વાશિએ તૃતીયક્રમ મેળવ્યો હતો

SANDESH

ટેક્નોફેસ્ટમાં વિદ્યાર્થીઓએ ૬૦ સેકન્ડના ભૂકંપમાં સ્ટ્રક્ચરલ સ્ટેબિલિટી ચકાસી

» કંપન દરમિયાન બિલ્ડિંગ કઈ રીતે ટકી શકે એનો અભ્યાસ થયો

સ્ટુડન્ટ્સ રોબોટિક્સ, રિલે જેવી ટેકનિકલ-નોનટેકનિકલ રમતો રમ્યા

સી.કે.પીઠાવાલા ટેક્નોફેસ્ટમાં 85 કોલેજનાં 7000 સ્ટુડન્ટ્સ જોડાયા

કોમ્પ્યુટર પર ટ્રેઝર હંટ રમાડવામાં આવી, અલગોરિધમ સોલ્વ કર્યું

રિલે કોડીંગ સ્પર્ધામાં જુદી જુદી કોલેજનાં 700 વિદ્યાર્થીઓએ ભાગ લીધો

કોમ્પ્યુટર પર ક્વીઝ કોમ્પિટીશન યોજાઇ, 30 મિનિટમાં કવુ સોલ્વ કરાયા

Scientific Articles

DEVELOPMENT AND EVALUATION OF POLYHERBAL FORMULATION FOR THE TREATMENT OF ECZEMA

A. G. Gandhi, M. G. Saralai, H. P. Patel, B. M. Patel2, P. K. Jadav.

Abstract

In Ayurveda, most of the drugs are given in the form of powder, kasaya or bhasma. In this study, topical formulations were prepared for local effect. The main objective of the study was to develop a semisolid dosage form of Aloe Vera – Aloe barbadensis and Turmeric-Curcuma longa extract using emulsifying ointment BP as a base for the treatment of eczema. Eczema is a non-contiguous skin disease, which can be prevented by administration of drugs through topical route having the ability to deliver a higher concentration of drug to the skin, would be possible with systemic therapy. For preclinical study, oxazolone induced allergic contact dermatitis by using Swiss albino mice. Formulations were prepared which containing 3%, 4% and 5% herbal extracts and applied topically once a day on outer and inner surface of the mouse's ear for 10 days post-operatively, compared with base control. Assess the efficacy of formulations assay, microbial activity, stability, spreadability, extrudability and other physical characteristics were evaluated. In the control group, rise in ear thickness was 52 % at 24 h after challenge by oxazolone whereas betamethasone demonstrated significant rise in ear thickness was 42% ($P < 0.0001$). Formulation 1, 2 & 3 exhibited 48%, 45% and 44% raise in ear thickness respectively at 24 h after challenge. Formulation 3 exhibits best effects as compared to 1 and 2 which gives the best antimicrobial activity as well as oxazolone induced allergic contact dermatitis model. Prepared polyherbal formulation complies with all the physical parameters.

LEPTIN SIGNALING AND DEVELOPMENT OF HYPERTENSION IN OBESITY

P K Jadav, A G Gandhi, B M Patel, M G Saralai.

Abstract

Leptin is synthesized and secreted by white adipose tissue, by acting on hypothalaminic nuclei; it decreases appetite and increases energy expenditure through sympathetic activation to decreases adipose tissue mass. Leptin also activate sympathetic nervous system in kidney, spleen, heart and hind limb. Leptin secretion decreases during fasting and increased after several days of overfeeding to regulate energy balance. Leptin act on Ob-Rb receptor, which is tyrosine kinase receptor and activate JAK/STAT pathway, PI3 kinase signaling pathway and Mitogen Activated Protein kinase [MAP] kinase signaling. Leptin induced anorexic effect is mediated by synthesis of melanocyte– stimulating hormone in POMC neuron which act on MCR-3 and MCL-4 leptin induced sympathetic activation is also mediated by STAT3 activation in propiriomeclanortin neuron. It is released melanocyte stimulating hormone which act on MCR-4 receptor. Most of obese human have high circulating lepin but remain obese indicating resistance to anorexic and weight lowering effect of leptin. Leptin induce anorexic effect and sympathetic nervous system stimulatory effect is mediated by different area of brain. Thus leptin resistance is selective in obesity i.e. increased leptin level shows resistance to anorexic and weight lowering effect of leptin with preservation of sympathoactivation. Although leptin stimulate renal SNS, acute administration of leptin does

not significantly affect blood pressure because of release of NO and natriuresis. But chronic hyperleptemia in obesity induces increased renal sympathetic activity and rise in BP by activation of Na^+ K^+ ATPase pump and inhibition of inhibitory effect of NO on Na^+ K^+ ATPase pump, which increases Na^+ and water reabsorption and raise arterial blood pressure.

FREQUENCY OF SATELLITE ASSOCIATIONS OF ACROCENTRIC CHROMOSOMES IN ORAL SQUAMOUS CELL CARCINOMA PATIENTS AFTER 5-FU AND CISPLATIN TREATMENTS

Pankaj Gadhia, Bhumika Desai.

Abstract

Oral squamous cell carcinoma is one of the most prevalent diseases worldwide. Acrocentric (D and G groups) satellite associations are known to play important role important role in the pathogenesis of diseases including cancers. The present work was aimed to study the frequency of satellite associations (SA) in human peripheral blood lymphocytes of freshly diagnosed oral squamous cell carcinoma patients and comparison will made with in vitro combined treatments of 5-Flurouracil (5-FU) and Cisplatin to observe the changes in frequency and pattern of satellite associations.

MEDICINAL VALUE OF MIMOSA PUDICA AS AN ANXIOLYTIC AND ANTIDEPRESSANT: A COMPREHENSIVE REVIEW

Zoya Shaikh, Samaresh Pal Roy, Pankti Patel, Kashmira Gohil

Abstract

Mimosa pudica from latin "pudica" means shy, shrinking is also called a sensitive plant and touch me not is a creeping annual and perennial herb. The species is native to South America and Central America. Mimosa belongs to the taxonomic group Magnoliopsida and belonging to family Mimosaseae. It folds itself when touched and spreads its leaves once again after a while. Thigmonastic movements in the sensitive plant Mimosa pudica L., associated with fast responses to environmental stimuli, appear to be regulated through electrical and chemical signal transductions. These are plants used in traditional medicine in Cameroon to treat insomnia, epilepsy, anxiety, agitation, leprosy, dysentery, depression, vaginal, uterine complaints, inflammations, burning sensation, asthma, leucoderma, fatigue and blood diseases. The major components said to be responsible for activities are C-glycosyl flavones namely, isorientin, orientin, isovitexin and vitexin. Scientific evidence exists with respect to their major and minor constituents. A review of literature was conducted to ascertain actions of this plant inaddition to systemic review of controlled preclinical trials for treatment of depression and anxiet. M. pudica is the most important controversial and effective natural origin that has a tremendous future for research. The novelty and applicability of M. pudica are hidden. Such things should be overcome through modern scientific concept.

DEVELOPMENT AND VALIDATION OF STABILITY INDICATING RP-HPLC METHOD FOR ESTIMATION OF FLUVASTATIN SODIUM IN BULK AND CAPSULE DOSAGE FORM

Bhanubhai N Suhagia, Ashok H Akabari, Mahesh G Saralai, Vishnu A Sutariya.

Abstract

A sensitive, specific and stability-indicating reversed phase high performance liquid chromatography-diode array detection method was developed for the quantitative determination of fluvastatin sodium in the presence of its degradation products. The chromatographic separation was performed on a Phenomenex Luna C18 column (150 X 4.0 mm, 5µm) in isocratic mode using acetonitrile and 0.02M potassium phosphate buffer (50 + 50, v/v, pH 5.0 adjusted with potassium hydroxide) as the mobile phase at a flow rate of 1.0 ml/min. The quantification was performed with a photodiode array detector at 235nm based on peak area. The method showed good linearity over the concentration range of 5-40 µg/mL with a detection limit of 1.1µg/mL and quantification limit of 3.3µg/mL. The proposed LC method was used to investigate the kinetics of acidic and oxidative degradation of fluvastatin sodium. The acidic and oxidative degradation had shown an apparent first-order kinetics and rate constants were found to be 0.0191µg/mL/min and 0.0048µg/mL/min, respectively.

REVIEW ON HERBAL'S USED FOR PARKINSON AND VARIOUS PROCEDURES FOR PARKINSON DISEASE

Patil Vishal Satish, Manoj Alai and Mahesh Saralai.

Abstract

Parkinsonism is one of the commonest neurodegenerative diseases, which ischaracterized by a selective and progressive degeneration of dopaminergicneurons, causing a series of symptoms which might ultimately induce programmedcell death, Although the etiology of Parkinsonism remains unknown, recent studieshave suggested that oxidative stress (OS), produces apoptosis which results inmitochondrial defects, neuroinflammation may also play important roles in its pathogenesis .Various agents as 6-Hydroxydopamine (6-OHDA), 1-methyl-4-phenyl1,2,3,6-tetrahydropyridine, Rotenone a neurotoxin commonly and many more areused in models of PD, induces selective catecholaminergic cell death, mediated byreactive oxygen species (ROS) and mitochondrial defects. The present article putsfocus on the possible use of various herbs used for parkinson The main purpose ofthis article is to have a closer look towards the herbal treatment for parkinsonism.

Extra-curricular Activities

Outdoor sports celebration and day celebrations were organized by our institution on 8th to 10th March, 2017

OUTDOOR SPORTS

VOLLEY BALL

KABADDI

BADMINTON

KHO-KHO

CRICKET

BOX-CRICKET


Days Celebration

Hobby Corner

Painting by – Urvashi, Krishna & Nihari (6th semester)

Painting by – Namrata Thakor (4th semester)

Poem

Effects of Drugs

Over dose of histamine cause histaminic shock

Nifedipine, Verapamil cause calcium channel block.

Caffeine is a CNS stimulant, which stimulate our brain

Antipyretic and analgesic cure fever and relief our pain.

Sedatives and hypnotics cause CNS depression

Heroin, cocaine decrease motion and increase our tension.

Levodopa, sinmet give anti-parkinsonism effect

For treatment of psychosis, tranquilizers are perfect.

Autoimmune disease that causes myasthenia gravis

Excessive doses of anti-cholinesterase cause cholinergic crisis.

Angina pectoris creates pain over the chest

As an anti-angina drug nitro-glycerin is the best.

Atenolol, propranolol can decrease hypertension

Atropine, morphine used in pre-anaesthetic medication.

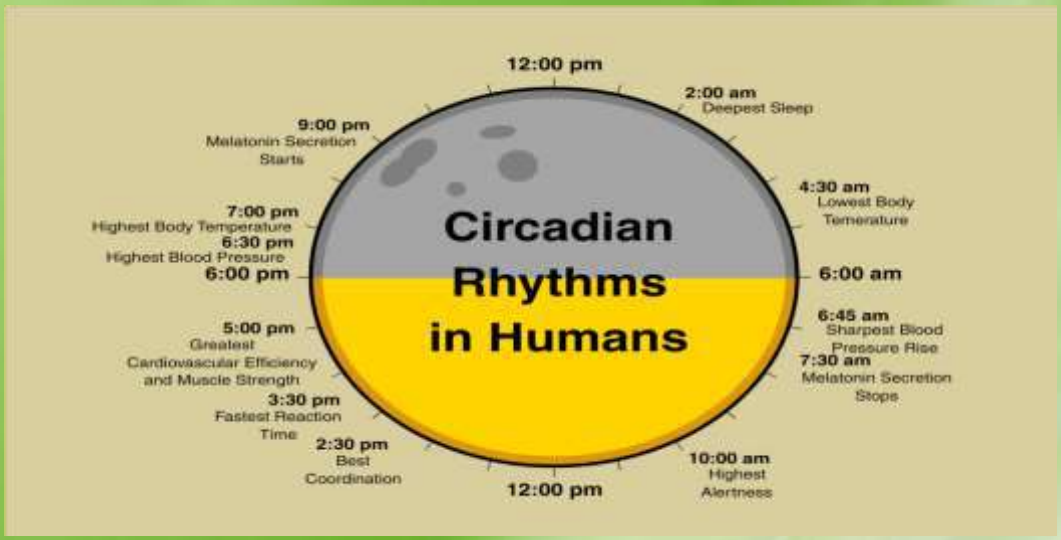
Salbutamol used to treat asthma and also heart block

Adrenaline reduces hypoglycaemic and anaphylactic shock.

Introduction:

Chronotherapeuticsis defined as the study of delivering the medicament in a proper concentration at a right time to cure the disproportionality occurring in biological rhythms due to particular diseases. In other words, it is defined as the displacing a drug to side of action at timely manner. Benefit of chronotherapy is that it increases the effect of drug and on the other hand decreases unwanted effect cause by the drug

Cure from the disease depends upon the therapy which in turns depends upon the drug. A therapy is successful when amount of drug with suitable concentration reach the targeted side at proper time and eliminate from the body in proper timely manner. Change in the time management of drug directly affects the drug safety and efficacy. If we administered a drug in a time where it give a maximum therapeutic effect and negligible or no side effect than drug is said ideal drug. It depends upon the circadian rhythm i.e biological cycle which undergoes the metabolic changes. Advancement in Chronotherapeutics include different formulation which delivery drug to side of action at timely manner with the aim to obtain maximum therapeutics effect.



Need of Chronotherapeutics:

- It requires to treat diseases like hypertension, angina pectoris, myocardial infarction bronchial asthma, ulcer, and rheumatoid arthritis in a better way, as they show crests and trough in their symptoms in 24 h cycle.

- It protects those drug which are degraded in acidic medium by the study of biological cycle
- Targeted drug delivery system where drug release is confined to particular part of GIT e.g: colon targeted drug delivery system in which drug release is restricted in stomach and small intestine and drug is released in colon.

- Drugs that undergo hepatic metabolism are formulated as pulsatile dosage form.

- Tolerance of drugs is decreased by using chronotheraupetic dosage form.

Advantages of Chronotherapy:

- Chronotherapy is drug-free.

- Chronotherapy is more effective when a person sleeps for several hours.

- While Chronotherapy patients often fall asleep this improves their condition and confidence as well.

- Chronotherapy is different from other treatments because it got the beginning, middle, and an end. So one can predict easily the point at which it will work.

- It gives you a new schedule like getting up and sleeping early which will be quite unusual for some days but it will give you a period to adjust psychologically.

- Improved stability.

- No risk of dose dumping.

Disadvantages of Chronotherapy:

- It develops a non 24 hours sleep wake syndrome after the treatment as the person.

- Sleeps or over 24 hours during the treatment.

- Person become less productive during chronotherapy and staying awake till the other schedule will be bit uncomfortable.

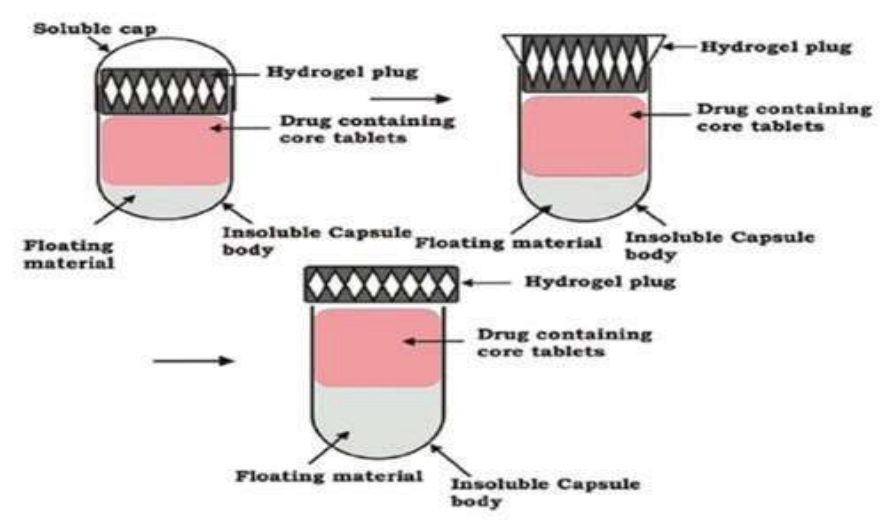
- Medical supervision is mandatory for this therapy.
- Large number of process variables.
- Trained /skilled person is needed for manufacturing.

Chronotheraupeutic Devices:

A. Capsular Systems
B. Rupturable Coating Systems
C. Osmosis Based Capsular System (Port System)
D. Soluble Barrier Coating System
E. Multiparticulate Sytems

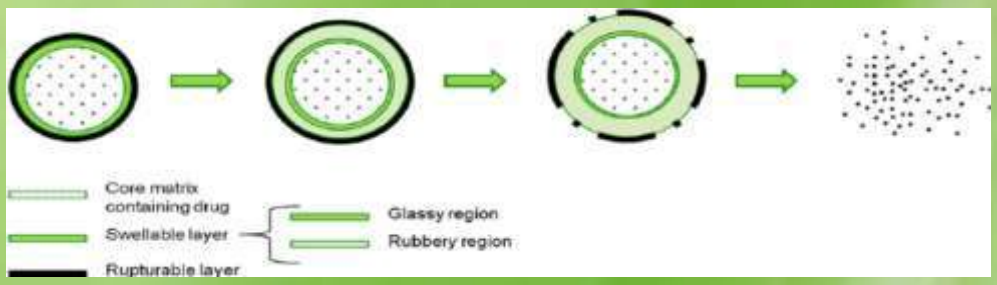
A. Capsular Systems:

It consists of drug formulation inside a plug which is erodible after a predetermined lag phase along with an outer coating of a water insoluble capsule. A swellable hydrogel plug closes the open end of the capsule body. As the capsule comes in contact with fluids the plug swells after the predetermined lag phase and comes out of the capsule leading to the pulsatile release of the drug. The plug is mainly formed by permeable and soluble polymers such as HPMC, agar, pectin and polymetaacrylates. The best example of developed capsular system would be pulsincap system.



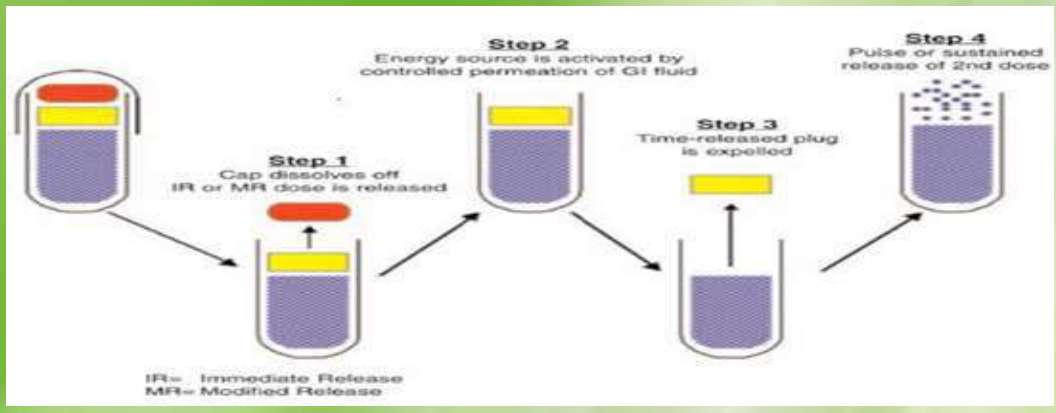
B. Rupturable Coating Systems:

In such kind of systems coating ruptures or disintegrates to release a particular drug. Coating ruptures due to swelling/ osmotic pressure/disintegration/effervescent recipient. The effervescent mixture is generally composed of citric acid and borax which is inserted into the core further coated with ethyl cellulose. Pressure generated due to the formation of the carbon dioxide gas leads to the rupturing of the coating.2 Increased coating thickness and increased hardness of the core tablet leads to the increase in the lag time. Certain agents such as sodium starch glycollate and low substituted hydroxyl propyl cellulose are used as the swelling agents and they swell upon contact with the GI fluids leading to the complete film rupture and resultant drug release.



C. Osmosis Based Capsular System (Port System)

It consists of a semi permeable membrane coating a gelatine capsule. Osmotically active agents present in the capsule inside an insoluble plug within the capsule. As this capsule comes in contact with the oral and GI fluids the water diffuses across the semi permeable membrane resulting in increased pressure that results in resultant release of the drug a particular predetermined lag time. E.g.: Ritalin (methyl phenidate): Attention Deficit Hyperactive Disorder.



D. Soluble Barrier Coating System

Here a barrier membrane coats the reservoir of the drug and barrier dissolves after a specific lag time leading to the chronotropic release of the drug. Mainly in the chronotropic system core consists of a coating by HPMC a hydrophilic swellable polymer or cellulose acetate phthalate which results in desired lag phase of the drug release.

E. Multiparticulate Systems

They are generally in the form of beads and pellets and they mainly act as reservoirs. All the granules are packed in a capsule after coated the drug over sugar beads. The main advantage of such kind of systems is that it prevents the dose dumping. There are few kinds of multiparticulate system mainly categorized on the basis of pulsatile release by osmotic rupture or rupture of membrane due to other reasons.

Chronotherapy used in the treatment of different disease:

1. Hypertension
2. Bronchial asthma
3. Peptic ulcer
4. Myocardial infarction
5. Arthritis
6. Cerebrovascular accidents
7. Hypercholesterolemia

Hypertension: It is the physiological condition described as morning surge. In hypertension the systolic bloods pressure rises up to 3mmHg/hour for 4-6 hours after getting up which is called as post-awakening and the diastolic blood pressure also rises up to 2mmHg/hours. Blood pressure and heart rate will be high at the time of walking in the morning and it will begin to decrease in the afternoon and reaches minimum at mid night.

Myocardial Infarction: Platelet aggregation and the vascular toneishigh in the morning when the release of the catechol amine and cortisol is high. The main regions for the outburst of the myocardial infarction in the morning with 34% events taking place from 6 am till noon. Cyclooxygenase inhibitor-2 will relieve the pain effectively when taken in the morning.

Peptic Ulcer Disease: Histamine antagonist given at night shows the better result unlike when given at the regular intervals around the clock. But more pain and more acid secretion thus formation of gastric and duodenal ulcers more subjective at night time then day time.

Hyper Cholesterolemia: Cholesterol intake and its biosynthesis is more in the evening hour. Therefore after the discovery of circadian rhythms the first HMG co-A inhibitor was re-evaluated and evening doses were recommended in spite of the morning doses.

Bronchial Asthma: Asthma disease has more circadian variation then the other diseases. Various Chronotherautics studies have been undertaken and they show the intake of time released theophyllin at 3 P.M achieves therapeutic dose at night and toxic levels during the day are avoided.

Table 1. Circadian rhythms and manifestations of clinical diseases

S. No.	Diseases and Syndromes	Circadian Rhythmicity
1	Asthma	Exacerbation more common during few hours prior to awakening.
2	Stable Angina	Chest pain and ECG changes are most common during the first 4 to 6 after awakening.
3	Epilepsy	Seizures often occuronly at particular times of the day or night, individual patterns differ among the patients.
4	Hormonal deficiency, Diabetes	Glucose level highest at night time.
5	Peptic ulcer	Pain typically occurs after stomach emptying following day time meals in the very early morning disrupting sleep.
6	Sudden Cardiac death	Events worse in early morning after awakening.
7	Myocardial Infarction	Incidents higher early in the morning to middle after noon.
8	Strokes	Most commonly occurs in the early walking hours.
9	Hypertension	Highest blood pressure reading occurs from late morning tomiddle afternoon.
10	Allergic Rhinitis	Worse in morning upon rising than during the day.
11	Prinzmetal Angina	ECG abnormalities are most common during sleep.

Table 2. List of drug used in chronotherapy for various diseases

S.No	Drug	Disease
1	Folinic acid,Methotrexate	Cancer
2	Irinotecan,Oxaliplatin,Leucovorin modulated 5-flurouracil	Metastalic Colorectal cancer
3	Methyl phenidate	Attention deficit syndrome
4	Sulphonyl urea, Insulin	Diabetes Mellitus
5	Glipizide,Gliclizide	Type 2diabetes
6	Haloparidol, Vitamin D3	Others
7	Celicoxib	Colorectal cancer
8	Chlorpheniramine	Cough
9	Furosemide	Hypertension
10	Sulbutabol sulphate	Nocturnal asthma
11	Indomethacin. Ibuprofen, Meloxicam,Aceclofenac, Prednisolone,	Rheumatoid arthritis
12	Nifedipine	Angina
13	Nitroglycerine	Heart attack
14	Omeprazole, Famotidine, Ranitidine	Ulcer

Table 3. List of Chronotherapeutic drug in market

S.No	Drug	Brand Name	Manufactures	Disease
1	Famotidine	Pepcid tab	Gen Pharma(int.)Ltd.Maharastra,India	Cardio vascular disease
2	Simvastatin	Zocor tab	Cipla Mumbai	Hyper lipidemia
3	Famotidine	Gaster tab	Schwarz Pharma,Monheim, Germany	Ulcer
4	Tolbuterol	Hokunalin tape	Manecho Co Ltd.Japan	Asthma a
5	DiltiazemHcl	Cardizem La	Corporation,Barbadosa,(KN)	Hypertension
6	Theophylline	Uniphyl extended release tab	Glenmark Generics Inc.USA	Asthma
7	Nifedipine	Procardia XL	Pfizer Ibs.U.Spharmaceuticals Groups, New Yor	Hypertension and angina
8	Nifedipine	ADALAT GITS	Bayer,Roseau,DM	Hypertension and angina
9	Isosorbide 5 Mononitrate	IS5MN PM	CircPharma Ltd. Dublin,Ireland	Angina pectoris
10	Bisoprolol	Bisoprolol PM	CircPharmaLtd.Dublin,Ireland	Cardio vascular disease
11	Virapamil	Covera HS	G.D.Searle,N.Y,U.S.A	Hypertension
12	Propranolol	Innopran XL	Glaxosmith Kline,USA	Hypertension
13	Verapamil	Verelan	Schwarz Phrama,Monhein,Germany	Cardiovascular disease
14	Diltiazem	Cardizem LA	Biovail Corporation, Mississauga, Canada	Hypertension

Table 4. Various patents in the field of chronotherapy

S. No.	Patents	Patent No.
1	Implantable electromechanically driven device	U.S. 4003379
2	Pulsatile drug delivery system	U.S5840329
3	Pulsatile release histamine H_2 antagonist dosage form	US6663888
4	Pulsatile particles drug delivery system	US5260069
5	Pulsatile drug delivery system	US5229131
6	Pulsatile drug delivery of doxylamine	US4842867
7	Targeted drug delivery system	CA2305762
8	An injection moulded starch capsulefor colonic delivery	US6228396
9	Hydrocolloid gums for colonic delivery	US6555136
10	Drug delivery composition for colonic delivery	US6200602
11	Unit dosages forms of diltiazem hydrochloride	CA2215378
12	Pulsatile delivery of Diltiazem	US6635277
13	Pulsatile delivery of d-threo-methyl phenidate	US6217904
14	Oral pulse dose drug delivery system	US6605300
15	Oral pulse dose drug delivery system	US6322819
16	One -a-day controlled release diltiazem formulation	US5834023
17	Self powered medication system	US4146029
18	Beads	US 5439689
19	Micro chip drug delivery devices	US5797898
20	Pulsatile delivery	US6635277

Table 5: Case Study

Sr. No	Drug	Polymer+Excipients	Results
1	Carvidelol Sulphate	Eudragit L 100 and Ethyl Cellulose	The optimized formulation shows 267 min lag time and 76.2% cumulative drug release after 8hrs
2	Ramipril	HPMCK 100M, Ethyl cellulose, cross caramalose sodium	The optimized batch shows lag time for 5hrs and exhibit 83.96% of drug release for 7 hrs
3	Nebivolol	HPC, Ethyl Cellulose	The optimized batch shows lag time for 5.25 hrs before burst release could occur.