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PH ANAL 01

A COMPREHENSIVE VALIDATED ANALYTICAL STUDIES ON ALFUZOSIN HYDROCHLORIDE BY REVERSED PHASE HIGH PERFORMANCE LC METHOD IN ER TABLETS

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A simple, specific, accurate and precise RP-HPLC method was developed and comprehensively validated for the determination of alfuzosin hydrochloride in ER (Extended release) tablet dosage forms. A hypersil BDS C8, 5µ column having 50 x2.1 mm internal diameter in isocratic mode with mobile phase containing buffer: acetonitrile: THF (80:20:1 v/v/v, pH 3.5±0.05) was used. The flow rate was 0.4 ml/min and effluents were monitored at 245 nm. The method is also applicable to separate the four process related impurities and also the degradation products from the analyte. Since, all the reported analytical methods were not comprehensively validated according to international guidelines; the proposed method would be an alternative choice for the development and validation of alfuzos in hydrochloride in ER tablets.

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PH ANAL 02

INVESTIGATION OF LIPID BASED NANOPARTICLES OF HERBAL METABOLITE (TETRAHYDROCURCUMIN) AND ASSESSMENT OF PHARMACOKINETICS IN WISTAR RATS

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Purpose: Tetrahydrocurcumin (THC), one of the major metabolites of curcumin, exhibits many of the same physiologic and pharmacological activities as curcumin and in some systems may exert greater antioxidant activity than curcumin. The objective of the present study is to develop and evaluate solid lipid based drug delivery systems to improve the bioavailability of the poorly water-soluble tetrahydrocurcumin (THC).

Method: High shear homogenization followed by probe sonication was employed to prepare THC loaded solid lipid nanoparticles. Formulations were prepared using Sterotex HM and Stearic acid as lipids and hydrophilic surfactant Tween 80 as the surfactant and PVP, PEG 6000, PEG 400, Propylene glycol (PG) and Poloxamer 188 as co- surfactants. The prepared formulations were evaluated for particle size, surface morphology, drug content, entrapment efficiency and thermal analysis. As there is no specified dissolution method for THC in pharmacopoeia, discriminative dissolution method is developed and validated for release studies of THC solid lipid nanoparticle. Further, the optimized THC loaded SLN is subjected to pharmacokinetic studies in wistar rats.

Results: SLNs were prepared by hot melt technique using Tween 80 as the main surfactant. The effect of different co-surfactants on the characteristics of the SLNs like entrapment and also on *in vitro* drug release was evaluated. The optimized formulations were selected based on the entrapment and in vitro release data and further animal studies were carried out using these formulations. The particle size was found to be in the range of 25 to 877 nm. A high drug loading of 94% in the lipid nanoparticles was observed. The *in vitro* study showed a slow and sustained release of the drug for over 24 hrs. The thermogram of the pure drug showed melting point for the drug at 95^{o} C. The thermograms of the formulations TF1 and TF9 showed the absence of the drug peak. An evident decrease of enthalpy with respect to raw lipid (from 124 to 53 J/g) was noted in the Sterotex HM – THC SLN thermogram. And decrease in enthalpy of stearic acid (from 184 to 68j/g) was noted in SA-THC SLN thermogram. The small difference in melting point and large difference in the enthalpy is evident that the tetrahydrocurcumin is dispersed uniformly in the lipid matrix and the THC-SA, THC-SHM complex formation is confirmed. The average particle size from atomic force microscopy (AFM) was found out to be in bounds with that of the values obtained with photon correlation spectroscopy. The AFM images of a group of particles represented in the figures clearly shows that the particles are well separated, ruling out the possibility of the aggregation of the particles. The pharmacokinetic parameters like C_{max}, T_{max}, $T_{1/2}$, AUC_{0-t}, MRT were measured using winNonlin software. There was a good improvement in the plasma drug concentration when formulated as SLNs compared to the pure form of the drug.

Conclusion: Based on the results it is evident that tetrahydrocurcumin bioavailability was promisingly improved when administered orally in the form of SLN. Further pharmacokinetic modelling and IVIVC should be carried out to establish the terahydrocurcumin role as drug.

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PH ANAL 03

NEWER RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF FEXOFENADINE AND MONTELUKAST IN COMBINED DOSAGE FORMS

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A simple, rapid, precise RP- HPLC method has been developed for simultaneous determination of Fexofenadine and Montelukast incobined dosage form by using penomenexluna C18 column (250x4.6 mm, id 5 µm) as stationary phase and mixture acetonitrile and phosphate buffer pH 3 (85:15) as mobile phase. The flow rate of the proposed method was 1 ml/min, column temperature was 18-25°C and the eluents were detected at 240 nm using Nimuselide as internal standard. The linearity was found to be in the range of 10 - 16 µg/ml and 100 – 180 µg/ml for Montelukast and Fexofenadine with correlation coefficient of 0.998 for both.The proposed method was validated as per ICH guidelines and applied for the determination of investigated drugs in tablets.

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PH ANAL 04

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF METFORMIN HYDROCHLORIDE AND MIGLITOL IN COMBINED TABLET DOSAGE FORM

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A simple, accurate, economic and rapid HPLC method was developed for the simultaneous estimation of Metformine hydrochloride and Miglitol in tablet dosage form. Metformine hydrochloride is a antidiabetic drug and Miglitol is Hypoglycemic antibacterial enzyme inhibitor. A mixture of acetonitrile:phosphate buffer in the ratio 50:50 v/v with flow rate of 1ml/min was prepared and used as mobile phase. The optimum wavelength for detection was 255nm. The retention times for Metformine hydrochloride and Miglitol was found to be 3.578 and 2.273 respectively.Determined at five concentration levels of 10µg/ml, 20µg/ml, 30µg/ml, 40µg/ml and 50µg/ml of Metformin and 0.5µg/ml, 1µg/ml, 1.5µg/ml, 2µg/ml and 2.5µg/ml of Miglitol. The linear regression equation of Metformin was y=81767x+7087 with correlation co-efficient (R2) 0.999.Linearity data of Metformin and Miglitol. The linear regression equation of Miglitol was y=16109x-1023 with correlation co-efficient (R^2) 0.999. The average % recovery of both the drugs were within the limit of 98 - 102% and %RSD of metformin and Miglitol were 0.1222 and 0.3550.The percentage label claim of Metformin and Miglitol were 98.85% and 98.63%.

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PH ANAL 05

A NEW BIOANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF ASPIRIN AND OMEPRAZOLE IN PLASMA BY RP-HPLC AND ITS APPLICATION TO PHARMACOKINETIC STUDY

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In India, there are roughly 30 million patients who suffer from heart diseases and two lakh surgeries have been performed every year. YOSPRALA- A new emerging drug approved by USFDA in September 2016 to treat Ischemic stroke, prophylaxis and gastric ulcer prophylaxis. In Yosprala the ingredients active is Aspirin which acts as an antiplatelet agent and omeprazole which acts a proton pump inhibitor, manufactured by Aralez pharmaceuticals Inc. An extensive survey of literature reveals that there is one analytical method has been reported yet for simultaneous estimation of aspirin and omeprazole by UV in BULK and three by RP-HPLC in Tablet dosage form. No analytical method has been yet reported for estimation of these drugs in plasma. Hence an attempt is made to develop a new bioanalytical method development for simultaneous estimation of Aspirin and Omeprazole in plama with Thermosil Scientific ODS column using Acetonotrile:Methanol:0.05 Phosphate buffer in (40:5:55) as mobile phase at flow rate of 1ml/min.The eluent was monitored using spectroscopic detection at 225nm.The relationship between Aspirin and Omeprazole concentrations and peak height ratio was linear over the range of 5-15µg/ml for Aspirin and 3-8.7µg/ml for Omeprazole.The proposed method was applied for pharmacokinetic study for estimation of their plasma concentrations for Therapeutic drug monitoring.

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PH ANAL 06

CHEMOMETRIC ASSISTED DEVELOMENT OF HPLC METHOD FOR THE SIMULTANEOUS ESTIMATION OF BROMHEXINE HYDROCHLORIDE AND SALBUTAMOL

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A simple, sensitive, accurate and economical HPLC method for the simultaneous determination of Bromhexine Hydrochloride and Salbutamol using chemometric tool, surface response method and central composite design was developed. Different analytical methods including HPLC have been reported for simultaneous estimation of Bromhexine Hydrochloride and Salbutamol. In all these methods analytical parameters are optimized by trial and error method. Apart from giving information on critical parameters influencing the analytical attributes andinteraction among the attributes which will be helpful in controlling the parameters as per quality by design (QbD) concept of ICH. The mobile phase used was acetonitrile : buffer pH 3(50:50), with a detection wavelength of 225 nm. The retention time of Bromhexine Hydrochloride and Salbutamol were 5.143 and 2.060 respectively.The linearity was 50-500mcg/ml for Bromhexine Hydrochloride and 5-50 mcg/ml for Salbutamol.The correlation coefficient for BMH and SBM was found to be 0.997 and 0.998 respectively. The flow rate was 1ml/min. The marketed product was analysed under the optimized condition. The method was optimized for the simultaneous estimation of Bromhexine Hydrochloride and Salbutamol using chemometric procedure. Significance of the selected analytical factor (buffer concentration, acetonitrile concentration, flow rate) were evaluated with the help of factorial design and the optimum chromatographic conditions were estimated by central composite design, global optimization approach. The developed method was validated for specificity, precision, accuracy etc. as per ICH guidelines.

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PH ANAL 07

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS DETERMINATION OF LISINOPRIL AND HYDROCHLOROTHIAZIDE IN PHARMACEUTICAL DOSAGE FORM

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A new method was established for simultaneous estimation of Lisinopril and Hydrochlorothiazide by RP-HPLC method. The chromatographic conditions were successfully developed for the separation of Lisinopril and Hydrochlorothiazide by using Thermosil C18 column (4.0×125mm) 5.0µm, flow rate was 1.3ml/min, mobile phase ratio was (75:25 v/v) Ammonium acetate Buffer: Acetonitrite pH 5 (pH was adjusted with dilute Acetic acid), detection wavelength was 230nm. The instrument used was WATERS HPLC Auto Sampler, Separation module 2690, photo diode array detector 996, Empower-software version-2. The retention times were found to be 3.796 mins and 3.020 mins. The % purity of Lisinopril and Hydrochlorothiazide was found to be 101.27% and 99.97% respectively. The system suitability parameters for Lisinopriland Hydrochlorothiazide such as theoretical plates and tailing factor were found to be 4668, 1.3 and 6089 and 1.2, the resolution was found to be 6.0. The analytical method was validated according to ICH guidelines (ICH, Q2 (R1)). The linearity studyLisinopril and Hydrochlorothiazide was found in concentration range of 20µg-30µg and 50µg-75µg and correlation coefficient (r^2) was found to be 0.999 and 0.999, % recovery was found to be 99.56% and 99.48%, %RSD for repeatability was 0.86 and 0.82, % RSD for intermediate precision was 0.44 and 0.19 respectively. The precision study was precise, robust, and repeatable.LOD value was 3.17 and 5.68, and LOQ value was 0.0172 and 0.2125 respectively. Hence the suggested RP-HPLC.

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PH ANAL 08

SIMULTANEOUS ESTIMATION OF SAXAGLIPTIN AND DAPAGLIFLOZIN IN HUMAN PLASMA BY VALIDATED HPLC-UV METHOD

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The fixed dose combination of saxagliptin and dapagliflozin, recently approved antidiabetic medication. It is marketed with a brand name Qtern. The intend method aim to develop a simple, rapid, sensitive and validated isocratic reversed phase high performance liquid chromatography (RP-HPLC) method for the simultaneous estimation of saxagliptin and dapagliflozin in human plasma by using linagliptin as internal standard as per US-FDA guidelines. The method was performed on Waters 2695 HPLC equipped with quaternary pump. The analyte separation was achieved using Eclipse XDB C18 (150×4.6µ×5mm) column with a mobile phase consisting of 0.1% ortho phosphoric acid and acetonitrile (50:50) with pH adjusted to 5.0 at1ml/min flow rate. The analyte was detected at 254nm. Retention time of the internal standard, saxagliptin and dapagliflozin was found at 2.746, 5.173 and 7.218minutes, respectively. The peaks were found to be free of interference. The method is validated over a dynamic linear range of 0.01 to 0.5µg/ml and 0.05 to 2µg/ml for saxagliptin and dapagliflozin, respectively, with a correlation coefficient of 0.998. The precision and accuracy of samples of six replicate measurements at LLOQ level was within limit. The analytes were found to be stable in human plasma at -28°C for 37 days. The stability, sensitivity, specificity and reproducibility of this method make it appropriate for the determination of saxagliptin and dapagliflozin in human plasma.

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PH CHEM 01

SYNTHESIS AND ANTIDEPRESSANT ACTIVITY OF NOVEL SUBSTITUTED 3,5-DIPHENYL-2- PYRAZOLINE-1-CARBOXAMIDE DERIVATIVES

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Pyrazolines are known and important 5-membered heterocyclic compounds, and synthesis of which can be achieved through various methods. They were also known for their diverse pharmacological activity. Due to complexity of the pathogenesis of the depression and its symptoms and differences in response to treatment, current therapies are incapable of providing an exact recovery, leading to attempts to investigate new treatment options. In many studies, it is shown that Pyrazoline derivatives have the potential as antidepressant agents.

3, 5-diphenyl-2-pyrazoline-1-carboxamide derivatives were synthesized from appropriate substituted (2*E*)-1,3-diphenylprop-2-en-1-one (Chalcones) on reaction with semicarbazide hydrochloride. The final compounds were structurally elucidated on the basis of IR, ^{1}H-NMR, and mass spectral data and microanalyses. The newly synthesized compounds were screened for their *In-vivo* antidepressant activity by tail suspension test (TST) and forced swimming test (FST). The behavioural parameter observed in both tests was immobility period, which is an indicative of antidepressant-like effect. Some of the tested compounds showed very good activity when compared to the standard drug i.e., Imipramine. In addition, it was found that the compounds possessing electron-donating groups such as nitro and chloro substituent on the aromatic rings considerably enhanced the antidepressant activity when compared to the Pyrazolines having no substituents on the phenyl rings.

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PH CHEM 02

SYNTHESIS AND BIOLOGICAL ACTIVITIES OF 1, 3, 4-OXADIAZOLE DERIVATIVES: A REVIEW OF LITERATURE

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A series of derivatives of 1, 3, 4-oxadiazole having verities of biological activities can be synthesised by various methods, and the activities include anticancer, antimicrobial, anti- inflammatory, anti- HIV, anti tubercular, anti diabetic, antifungal etc. In this article we have summarized various methods for synthesis of derivatives of 1, 3, 4-oxadiazole nucleus and evaluation of various biological activities.

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PH CHEM 03

DIFFERENT BIOLOGICAL ACTIVITIES OF SUBSTITUTED 1, 3 BENZOTHIAZOLE DERIVATIVES

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Benzothiazole nucleus playsa major role in heterocyclic chemistry due to its structural simplicity. Aseries of benzothiazole and its derivatives have been synthesized by using various methods and evaluated for its biological activity. It remains one of the most widely studied heterocyclic compounds due to its wide range of biological activities such as anticancer, antimicrobial, antifungal, antibacterial, anticonvulsant, anthelmintic, anti-tubercular, anti-inflammatory, antipsychotic and anti-diabetic activities. Works of theliterature revealed that structural modification of benzothiazole derivatives have improved biological activities and increased a great interest in the research field.The present review focuses on substituted 1, 3benzothiazoles derivatives with potential activities.

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PH CHEM 04

DIFFERENT BIOLOGICAL ACTIVITIES OF 1, 3, 4-THIADIAZOLE

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The 1,3,4-thiadiazole nucleus is one of the most crucial and well-known heterocyclic nuclei, which is a common and basic characteristics of a range of natural products and medicinal agents.Thiadiazole nucleus exist as a principal structural component in an assembly of drug categories such as antimicrobial, anti-inflammatory, analgesic, antiepileptic, antiviral, antineoplastic, and antitubercular agents.In this study, an attempt has been made with recent research findings on this nucleus, to review the structural modifications on different thiadiazole derivatives for various pharmacological activities.

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PH CHEM 05

IN-VITRO ANTI-DIABETIC AND ANTI - ARTHRITIC ACTIVITY *DESMODIUM TRIFLORUM*

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Diabetes is one of the major disorder and responsible for early death worldwide. For every ten seconds a person dies from diabetes related causes mainly from cardiovascular complications. The mechanism of inflammation injury is attributed, in part, to release of Reactive Oxygen species from activated neutrophil and macrophages. The free radicals are important mediators that provoke or sustain inflammatory processes and consequently, their neutralization by antioxidants and radical scavengers can attenuate inflammation. Rheumatoid arthritis (RA) is a chronic, systemic inflammatory disease predominantly affecting the joints and peri-articular tissues. RA still remains a formidable disease, being capable of producing severe crippling deformities and functional disabilities.The in-vitro **α**-amylase inhibitory studies demonstrated that *both Desmodiumtriflorum*(EEDT)has significant anti diabetic activity. The percentage inhibition at 100-500 µg/ml concentration of crude plant extracts shown concentration dependent increase in the percentage inhibition. As far as **α**-glucosidase concerned both extracts has shown concentration dependent increase in percentage inhibition and showed variable results at a 500 µg/ml concentration EEDT shown 86% , and proved significant effect when compared to acarbose(standard) which was 89% in the same way 100 µg/ml shown 42%,38%, and 46% respectively. The crude ethanolic extracts of EEDTshown good activity in inhibition of protein denaturation method by bovine serum albumin, Ethanolic extracts of both *Desmodiumtriflorum* were screened for their anti-arthritic activity. The Extract shown good extent of inhibition of protein denaturation by using egg albumin when compared with standard Diclofenac sodium.

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PH CHEM 06

SYNTHESIS AND BIOLOGICAL ACTIVITY STUDIES OF NOVEL ARYLAZO PYRAZOLES

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Pyrazole chemically known as 1, 2-diazole has become a popular topic due to its manifold uses. Pyrazoles and its derivatives, a class of well known nitrogen heterocycles, occupy a prime position in medicinal and pesticide chemistry for their diverse biological activities. The pyrazole ring is present as the core in a variety of leading drugs such as Celebrex, Sildenafil (Viagra), Ionazlac, Rimonabant and Difenamizole etc. A novel series of 3,5-dimethyl-arylazopyrazoles (3a-l) were synthesized by reacting various oxybutyrateswith methylparaben in glacial acetic acid medium. The key intermediate oxybutyrates were prepared by diazotization of appropriately substituted anilines followed by condensation with acetyl acetone in alcohol medium. The newly synthesized compounds were assigned on the basis of IR, ^{1}H-NMR & MASS spectral data.All the newly synthesized compounds were evaluated for their *In-Vitro* antibacterial and antifungal activities. Some of the compounds showed good antibacterial activity and moderate antifungal activity.

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PH CHEM 07

EFFECT OF SALICYLIC ACID AND ITS ANALOGSON ALPHA AMYLASE

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Diabetes mellitus is an endocrine disorder characterized by hyperglycaemia. Postprandial blood glucose level in patients with type 2 diabetes may be controlled by inhibition of alpha amylase, which is one of the carbohydrate digesting enzymes. Plants contain different chemical constituents having potential for inhibition of alpha amylase, that may be used as therapeutic agents.There are very few reports of synthetic drugs that have been tested for *in-vitro* alpha amylase inhibitory activity. Salicylic acid, a synthetic drug has shown inhibition of alpha amylase from *Rhyzoperthadominica*. The objective of this study was to synthesize different salicylic acid derivatives andtest their *in-vitro* activity on human salivary amylase. Some salicylic acid derivatives showed inhibition, while others showed activation of human salivary amylase. Benzoylated salicylic acid showed maximum inhibition with IC_{50} 81.73µg, comparable with standard drug Acarbose having IC_{50} 83.33µg.Benzoylated salicylic acid may have potential as a therapeutic agent in diabetes mellitus.

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PH CHEM 08

NATURAL FLAVONOIDS:AN ALTERNATIVE TO BENZODIAZEPINES

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Naturally occurring flavonoids have been recently reported to selectively bind with high affinity to central benzodiazepine receptor and exert powerful anxiolytic and other benzodiazepine-like effects in rat. Flavonoids are present in regular dietand do not show sedative, lethargy or other unwanted side effects characteristic to benzodiazepines.Aim of this study is to investigate for safer alternative to benzodiazepines as an anxiolytic agent in the form of flavonoids.

Methodology: Molecular docking studies of naturally occurring flavonoids were carried out on VLife Science MDS 3.2 software. Total twenty two naturally occurring flavonoids were docked by Biopredicta module.

Results: It was found that most flavonoids show good interactions in molecular docking studies. Flavones such as kaempferide, fisetin, morin, myricetinshowed prominent interactions like hydrogen bonding, hydrophobic and Vander walls interactions with the GABA type A receptor.

Conclusions: Natural flavonoids possess anxioselective effects by acting on central benzodiazepine receptors and may deserve clinical trials as anxiolytic agents. Flavonoids are prominent drugs in the treatment of mental disorders, and can also be used as tools to study modulatory sites at GABA type A receptors and to develop GABA type A selective agents further.

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PH CHEM 09

STRUCTURE BASED VIRTUAL SCREENING TO IDENTIFY NOVEL GLYCOGEN SYNTHASE KINASE-3B INHIBITORS

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Alzheimer's disease (AD) is an age related neurodegenarative disorder. Glycogen synthase kinase 3 beta (GSK-3β) which is a proline directed serine threonine kinase are mainly involved in pathogenesis of AD. Hyperphosphorylation of tau protein (microtubullin associated protein) mediated by GSK-3β leads to detachment of tau from tubuline resulting in formation of neurofibrillary tangles. Three tiered structure based virtual screening approach targeting GSK-3β was performed on IBS library of 5,89,822 compounds with High Throughput Virtual Screening (HTVS), Standard Precision (SP) and Extra precision (XP) docking followed by calculation of binding energy (dG) using Prime/MM-GBSA. Hits were selected on the basis of dock score, binding energy and ligand interactive modes. Our results indicated that all the reported five hits have shown good CNS druggability and ADME properties with the best two ligands STOCK1S-48033 and STOCK1S-19863 having interactions with amino acids such as Phe67,Val135, Ile 62.

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PH CHEM 10

IN SILICO STUDIES, SYNTHESIS AND ANTIOXIDANT ACTIVITY STUDIES OF CYANOPYRIDONES

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The chemistry of heterocyclic compounds is one of the most complex branches of organic chemistry. Drug discovery aims at discovering efficacious molecules with their potency and selectivity are balanced against ADMET properties to set the appropriate dose and dosing interval. Druglikeness may be defined as a complex balance of various molecular properties and structural features which determine whether a particular molecule is similar to the known drugs. Chalcones with an enone system between two aromatic rings exhibit interesting pharmacological activities such as anti-inflammatory, antileishmanial, antibacterial, antifungal, antitumour, antimalarial and anti-tubercular activity. A wide range of biological activities have been observed in compounds possessing a 2- pyridone motif which includes 5α-Reductase inhibitors, antiviral, anti-tumor, anti-inflammatory, analgesic and antipyretic properties. Series of cyanopyridones from chalcones were synthesized and evaluated the anticancer and antioxidant activities of the synthesized compounds. Chalcones were synthesized from chalcones and cyclized into cyanopyridones using ethylcyanoacetate and ammonium acetate as cyclizing agent. Screening of antioxidant activity was by DPPH and Nitric oxide scavenging Method. The compounds showed desired physicochemical, druglikeness properties and showed no violation with lipinski's rule of five. The compounds tested for antioxidant studies also showed promising activity. The above results proved that cyanopyridones are found to be interesting lead molecules for further synthesis as anticancer and antioxidant agents.

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PH CEUT 01

GASTRO RETENSIVE DRUG DELIVERY OF GLIMEPIRIDE BY FLOATATION-MUCOADHESION TECHNOLOGY

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Glimepiride is a FDA approved sulphonyl urea oral antidiabetic drug, which has rapid and complete absorption after oral administration. Diabetics affect the gastric emptying rate thus incomplete absorption of the drug is often accompanied by lesser bioavailability. Currently several studies were carrying out for increasing the bioavailability as well as for shortening the frequency of drug administration using mucoadhesive and floating technologies. In our studies an attempt is made to combine both mucoadhesive and floating technology to achieve targeted controlled drug delivery in the stomach. Floating and mucoadhesive tablets of Glimepiride were developed with an aim of improving the patient compliance by decreasing the frequency of administration and to enhance bioavailability. Floating-mucoadhesive Glimepiride tablets were prepared using polymers such as Carbopol, HPMC and Methyl cellulose by direct granulation method. The fabricated tablets showed acceptable weight variation, hardness and friability. The effect of floating lag time was studied for these formulations and found to be different for each samples. Formulation S2 having HPMC as polymer shows appreciable floating lag time of 2 min. Invitro Dissolution studies were performed for all the formulations for 48 hours and formulation containing combination of all three polymers S3 achieved the objective of targeted controlled release for 48 hours.

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PH CEUT 02

PREPARATION AND CHARACTERIZATION OF CINNARIZINE SOLID DISPERSIONS WITH CYCLODEXTRIN AND OTHER WATER SOLUBLE POLYMERS

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Solid dispersions with hydrophilic polymers are one of the successful methods to enhance dissolution characteristics of poorly soluble drugs. In the current study, solid dispersion technique was employed to enhance solubility of a BCS class II drug, cinnarizineusing different carriers. The solid dispersions of cinnarizine with βCycloDextrin, PVP K30, PEG 4000, were prepared to increase its solubility and dissolution characteristics. The solid dispersions of cinnarazine with β CD were prepared at 1:1, 1:2 and 1:3,drug -carrier ratios by kneeding method and solid dispersions of cinnarizinewithPVP K30 and PEG 4000 were prepared at the same ratios by solvent evaporation method. The formulations were characterized for drug content, drug -polymer interactions and release profile. The FTIR spectroscopic studies revealed absence of drug–polymer interaction. The solubility and dissolution rate of cinnarizine were enhanced in all the formulations. Solid dispersions with PVP K30 at higher ratios showed better dissolution rate when compared with other formulations.

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PH CLIN 01

ZOLPIDEM, A HAZARDOUS CAUSE FOR EMERGING UNFORESEEN NEUROPSYCHIATRIC IMPACTS ON INSOMNIAC

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Zolpidem, animidazopyridine hypnotic drug indicated in short term insomnia is a benzodiazepine receptor agonist with high binding affinity for the $GABA_A$. Although being a non-benzodiazepine derivative, Zolpidem is an established alternative for benzodiazepines because of its milder and lesser problematic side effects. Nevertheless, recent studies on patients under Zolpidem medications even with no history of psychosis have shown episodes of neuropsychiatric side effects like hallucination, suicide attempt, sleep related eating disorders, sleep talking, amnesia,somnambulism, sleep driving etc. Zolpidem induced suicidal attempt suggest a correlation between typical psychological sideffects and dangerous psychological behaviors. The higher bioavailabilty and plasma protein binding of Zolpidemresults in higher level of free Zolpidemwhich might be the leading cause of these psychiatric reactions. There are no significant differences in the pharmacokinetic parameters between various racial groups and are not influenced by gender.Although the pathophysiology of Zolpidem induced psychiatric disorders remain unclear, clinicians should carefully monitor for the potential induction of complex behaviors associated with Zolpidem in patients with comorbid conditions.

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PH CLIN 02

EVALUATION OF INCIDENCE RATE OF EPILEPY IN THE STUDY POPULATION

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Background: Epilepsy is a condition characterized by recurrent seizures that may involve repetitive convulsion resulting from an excessive discharge from cortical neurons. There is an estimate of 1% burden of epilepsy worldwide in which one sixth are Indians. The economic burden of epilepsy in India is found to be about Rs 68.76 billion constituting 0.5% GNP of India. Epilepsy is higher in elderly, seen more in males & prominently in rural population. Etiologies include underlying genetic inheritance or acquired structural damage to brain. Pathophysiology involves changes in ion channels or abnormality in inhibitory neurons function. The triggering factors involve stress, flickering lights, dehydration & sleep deprivation. Therapy involves single antiepileptic drugs like carbamazipine, if ineffective combinational therapy is considered.

Objective: To study the incidence rate of epilepsy in the study population.

Methods: This is a prospective observational study done in a 500-beded tertiary hospital for a period of 10 months. A total of 400 patients visited the hospital during the study period in which 104 patients had regular medication and completed the study. Follow up was done every two months.

Results: In age wise category, patients of 50-59 years were found more susceptible (26.90%); in gender wise category males were more prevalent (57.70%). Results were analyzed through bar charts. The incidence rate of epilepsy in the study population was found to be 2.27 seizures.

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PH CLIN 03

CASE REPORT ON VALPROIC ACID INDUCED HEPATOTOXICITY

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Valproic acid a well known anticonvulsant is being acclaimed by psychiatrist to manage acute mania and bipolar disorder. Valproic acid combined to other antipsychotics is considerably effective than either drug alone. It has action on dopamine, GABA glutamate neurotransmitter and intracellular signaling. It is the third most common xenobiotic suspected to cause hepatotoxicity. This is a case report on 50year old female patient with history of bipolar disorder on regular medication of olanzapine and lorazepam for past 18 years .Due to the poor ailment, therapy latterly switched to Valproic acid and a combination of olanzapine with fluoxetine. Later, patient came with the complaints of nausea and vomiting, pursued by yellowish colorations of eye, urine and vomitus.The patient neither had any above similar episodes nor in her neighbour hood furthermore a negative HbcAg report. Hence hepatotoxicity was induced due to Valproic acid, moreover prior to management drug was discontinued. Hepatotoxicity was managed by stomach wash, levocarnitine, and silymarin. Valproic acid induced hepatotoxicity is a major complication which if recognized early can be effectively treated.

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PH CLIN 04

ASSESMENT OF QUALITY OF LIFE IN TERMS OF SEXUAL DYSFUNCTION IN DIABETIC PATIENTS RECEVING ANTIDIABETIC DRUGS

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Background

Diabetes mellitus (DM) is one of the most common chronic diseases the world. At present, 347 million people in the world have been diagnosed with this disease. It has been associated with sexual dysfunction both in males and females. This can generate series of complication such as Erectile Dysfunction (ED) in males and Feminine sexual Dysfunction (FSD) in females; which has the following features like decreased vaginal lubrication, painful intercourse, lack of sexual response.Sexual dysfunction associated with co-morbid condition and complication affects the quality of life.

Objective

1. To assess the quality of life of sexual dysfunction in patients with diabetes.

2.To determine association between co-morbidity, complication and sexual dysfunction relates in patients with diabetes.

Methods

It was a prospective cross sectional study which included 173 DM Patients, carried out in general medicine department of 500 bedded tertiary care teaching hospital for the duration of 10 months. Tools used are Diabetes 39 questionnaire, female sexual functioning index (FSFI), International index of erectile function (IIEF).

Results

1. 71.68% of patients had poor quality of life and 28.32% had a good quality of life according to D-39 questionnaire.

2. The complication of DM was found to be neuropathy (42.77%) &co-morbidities are Hypertension(47.98%), CKD(15.61%), and CAD(16.02%).

Conclusion

Most of the patients experienced poor quality of life. The association between sexual dysfunction, complication and co-morbidity of DM are commonly seen in both genders.

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PH CLIN 05

UNIDENTIFIED CAUSE OF METABOLIC SYNDROME IN PRIMARY ALDOSTERONISM: "CONNSHING SYNDROME"

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Introduction: In Primary Aldosteronism, adrenal glands overproduce aldosterone,that results in loss of potassium along withsodium retention, leading to secondary hypertension. Hypertension in Cushing's Syndrome results from increased plasma volume, greater peripheral vascular resistance and higher cardiac output. Connshing Syndrome is a combination of bothPrimary Aldosteronism&Cushing's Syndrome, together leading to complications such as Type 2 DM, Osteoporosis, and increased risk of fractures.

Methodology: Extensive background literature survey was conductedusing various databases for a period of 6 months, to find a significant role of Connshing Syndrome in secondary hypertension and associated perivascular complications.

Discussion: In Primary Aldosteronism, glucocorticoid co-secretion is common and associated with risksformetabolic disorders. Patients with Conn Syndromehad significantly increased cortisol & total glucocorticoid metabolite excretion. In patients with Conn Syndrome, the adrenal glands not only overproduce aldosterone, but also cortisol. Aldosterone excess has been found to be associated with disorders in glucose metabolism, and may also contribute to cardiovascular damage. Adrenalectomy in patients with Primary Aldosteronism significantly reduces the risks of New-Onset Diabetes Mellitus, compared to that of mineralocorticoid receptor antagonist therapy.

Conclusion: Connshing Syndrome, a recently identified condition, is characterized by combined overproduction of aldosterone and cortisol, which is highly associated with metabolic syndromes like Type 2 DM, osteoporosis and fractures. Treating Connshing Syndrome, rather than that of aldosterone excess alone, will result in clinically significant reduction risk of secondary hypertension and associated perivascular complications.

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PH CLIN 06

ASSESSMENT OF HEALTH-RELATED QUALITY OF LIFE OF ASTHMA PATIENTS AFTER PHARMACEUTICAL CARE IN A TERTIARY CARE TEACHING HOSPITAL

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Objective: To assess health - related quality – of - life (HRQoL) in asthma patients after pharmaceutical care in a tertiary care hospital.

Materials and methods: A prospective vs. intervention study was conducted, for a period of 9 months, in a tertiary care teaching hospital. Asthma patients, aged above 12, were selected based on exclusion and inclusion criteriae. Patients were randomly divided into 2 groups; one without pharmaceutical care (control group) and the other group receives pharmaceutical care (intervention group). The demographic details ofeach patient is obtained from case sheets. The questionnaires used include Asthma Quality of Life, consisting of 32 questions, and Asthma Control Test, which is a five point questionnaire. The scores of each group were statistically compared.

Results:The overall scores of AQLQ for intervention group for domains for 30 patients were found to be; AQLQ I= 4.77, AQLQ II = 4.91, AQLQ III = 4.73, AQLQ IV = 4.72, and the ACT scores for 5 domains were found to be; ACT I= 4.33, ACT II= 4.33, ACT III = 4.36, ACT IV = 3.93 and ACT V = 4.06. Significant improvement was observed in intervention group compared to that of control.

Conclusion:The patients provided with pharmaceutical care show a positive impact in their quality of life, compared to those without. The interventional group had better control on asthma compared to that of control group. This signifies that patient counselling can improve quality of life in asthma patients.

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PH CLIN 07

A CORELATION STUDY ON SLEEP DISTURBANCE AND QUALITY OF LIFE INCHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS

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Background: Sleep disorders are very common in patients with chronic obstructive pulmonary disease (COPD). Sleep disorders and quality of life (QoL) affect each other in the different stages of the disease progression. This descriptive-correlational study investigated the relationship between quality of life and quality of sleep in chronic obstructive pulmonary disease patients.

Objectives: To determine prevalence of sleep disturbance and Quality of lifein chronic obstructive pulmonary disease patients.

Methods: This is a cross-sectional study which was conducted in the Pulmonary Medicine department of 500 bed tertiary care teaching hospital during 10month study period. The study population include 180 Outpatient subjects, Informed consent form ,Data entry form including Kuppuswamy Socioeconomic status, Smoking status, Comorbidities, Vaccination, medication, mMRC scale, GOLD criteria, CAT score and the Validated questionnaire Pittsburgh Sleep Quality Index (PSQI) for sleep disturbance ,St George's Respiratory Questionnaire (SGRQ) for assessing the quality of life,PHQ-9 is used for Depression.

Results and Discussion: The results indicated that sleep disturbances is in 77.8% of COPD patients. Correlation is checked by using Pearson correlation which is found as a significant one (P=0.549) so the quality of sleep is significantly associated with QOL. Statically significant negative correlation with correlation coefficient exists between FEV1 values and QOL total score with a correlation coefficient of -0.466.Factors contributing to sleep disturbances are Age, Sex, BMI, Marital status, Smoking status, Exacerbations, Vaccines, Comorbidity, mMRC, CAT score, Medications ,Depression. But Education, Occupation, Family income, socioeconomic status, Peak expiratory flow rate shows negative correlation with sleep disturbances.

Conclusion: This descriptive-correlational study highlighted the relationship between QOL, quality of sleep and disease stage in COPD patients. The results showed that the QOL in patients with COPD is compromised and worsens with disease progression.

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PH CLIN 08

TRIGGER FACTORS IN PEDIATRIC ASTHMATICS

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Introduction: Asthma is a common long term inflammatory disease of the airway of the lungs. Various trigger factors like weather, allergens, humidity and smoke can cause asthma. Asthma is thought to be caused by a combination of genetic and environmental factors.

Objective: To identify the trigger factors in pediatric asthmatics.

Method: A prospective observational study was conducted in the pediatric department of a 500 bedded tertiary care hospital. The study was conducted on a total of 120 patients between the age of 2-12 years over a period of 10 months.

Result: About 85.80% of the children reported weather as their trigger factor which was followed by allergens at 64.20%, increased activity 53.30%, irritants 51.70%, cold air 30% and humidity 10.80%. A few children experienced asthma from food and other factors. 71.70% children had a family history of asthma. 59.20% children had a smoker in their family.

Conclusion: During the course of the study weather was found to be the most common trigger factor of asthma in pediatric patients.

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PH CLIN 09

RETRACING PHAGE THERAPY: KEY TO THE POST ANTIBIOTIC ERA

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We live in the era of superbugs which develop resistance to most of the antibiotics employed in practice today at an alarming rate. Consequently, this failure of antibiotics demands an alternative treatment option for multidrug resistant pathogens. Bacteriophage therapy, the process of tackling pathogenic bacteria using specific viruses, was first explained in 1915, thirteen years prior to the discovery of penicillin.Unfortunately, phage therapy wasn't utilized to its full potential because of the golden era of antibiotics. However, since the reintroduction of phagetherapyto clinical trials in 2015, bacteriophage is being recognized as a potential alternative to treat infectious diseases. Theefficacy of bacteriophage against ESKAPE pathogens (*Enterococcus*, *Staphylococcus*, *Klebsiella*, *Acinetobacter*, *Pseudomonas* and *Enterobacter*spp) is well established. The high specificity of bacteriophage offers major clinical advantage as the pathogenic bacteria is selectively destroyed, sparing the normal gut microbiome and host cells. Emergence of resistance, the biggest drawback of conventional chemotherapy, is less likely with theemployment of bacteriophage. However, there is limited data available for the in-vivo susceptibility of pathogens to phages. Moreover, further research is required to evaluate the immunological response against bacteriophages. Although phage therapy is currently restricted to Poland, Georgia and Russia, with the recent promising results, bacteriophage therapy could be the vital key to the much anticipated post antibiotic era. In this review, we aim to discuss the history, recent developments as well as the scope of bacteriophage therapy in combating bacterial infections.

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PH CLIN 10

PSYCHIATRIC MANIFESTATIONS IN WOLFRAM SYNDROME: THE SUBTLE DETAILS

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Wolfram syndrome also referred as DIDMOAD (diabetes insipidus, diabetes mellitus, optic atrophy, deafness) is a rare autosomal recessive genetic disorder triggered by the mutation of wolfram syndrome gene defined by occurrence of diabetes mellitus and bilateral optical atrophy, diabetes insipidus, along with neurogenic bladder, deafness and frequent neurological expressions. Apart from those above mentioned manifestations, recent studies illustrate wolfram syndrome contribute to psychiatric illnesses. Among the wolfram syndrome patients,60% had episodes of severe depression, psychosis and impulsive verbal and physical belligerence. In the midst of 60%, 40% admitted to psychiatric ward and 20% attempted suicide. We wrap up that wolfram syndrome gene bias to psychiatric illness. In this article we include, mutational analysis of wolfram syndrome gene and psychiatric findings in wolfram syndrome.

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PH CLIN 11

TREATMENT FOR HAIR FALL BY POLY HERBAL FORMULATION

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Hair plays a vital role in making you look younger or old and also plays animportant role in the personality of human. The loss of hair and dandruff is the major problem associated with hairs. Ayurvedic system is the traditional system of medicine having major treatment across the world. The aim of study was to develop a hair oil formulation using Aloe vera(leaves), Indigoferatinctoria(Whole plant), Hibiscus rosa-sinensis L(leaves), leaves of Lawsoniainermis L, Nigella sativa(seeds), Cocosnucifera(oil) are with purported claims of better growth of hair and diminution in loss of hair . The oil was prepared according to Ayurvedic Formulary of India and was standardized according to Protocol for Testing Ayurvedic, Siddha &Unani Medicines,Government of India. Purification of fruits and leaves was performed according to Ayurvedic Formulary of India. Organoleptic evaluation and physicochemical evaluation was performed.

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PH CLIN 12

PRESCRIBING PATTERN OF ANTIBIOTICS FOR THE MANAGEMENT OF DIABETIC FOOT ULCER

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Back ground: Diabetes mellitus is recognized as an epidemic in the Asian sub- continent affectingnearly 62million in India alone. Diabetic foot ulcers are estimated to affect 15% of all diabetics during their life time and precede almost 85% of all foot amputation.The development of antibiotic resistanceis a major problem in this context. So sensitivity testing is an inevitable tool in the selection of antibiotics.

Aim: To determine the prescription pattern of antibiotics in the management of diabetic foot ulcer and to find out the resistance pattern of antibiotics in diabetic foot ulcer.

Methodology: A prospective cross sectional study was conducted in the diabetic foot clinic and surgery department of a tertiary care teaching hospital in south India, for six months. A total of 117 patients were recruited for the study. Out of these, specimens were collected from 101 patients for antibiotic sensitivity testing.

Result: We enrolled 117 patients. The mean (±SD) age of the sample is 55.43(±11.98). the male to female ratio was 2.3:1. We found that, the antibiotics used for treating diabetic foot ulcer, in two study groups were different. Ciprofloxacin was the most commonly prescribed empirical drug in diabetic foot clinic, followed by cloxacillin, levofloxacin. Where as in hospitalized patients in surgery department cefotaxime, cefixime,amikacin, metronidazole alone or in combination were used. It is also found that microorganisms isolated from diabetic foot clinic and from surgical ward were different. Organism isolated from diabetic foot clinic are staphylococcus aureus(31.4%), followed by klebsiella(15.7%) and a methicilline resistant staphylococcus aureus(15.7%). In surgical ward, E.Coli(24%), followed by proteus(11%) and pseudomonas(16%).

Conclusion: The sensitivity pattern of organism to antibiotics may differ in different places, in the same community. It is also decided by the extent and chronicity of the ulcers. Regular monitoring of culture and sensitivity reports is needed for selecting drugs for optimum antibiotic therapy.

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PH CLIN 13

ANTINEOPLASTIC PROPERTY OF DISULFIRAM: A REVIEW

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Treatment for cancer is in its way of developing. Many drugs are undergoing clinical trials to ensure their action on malignancies. Anti alcoholism drug, disulfiram is now snatching attention due to its cytotoxic property. Disulfiram (tetraethylthiuramdisulfide) is a highly versatile reagent. Mainly known for inhibitingacetaldehyde dehydrogenase and also used as antiprotozoal agent.Chemoresistant cancer cells are reacting to this NFkB inhibitor. Disulfiram is a member of the diethiocarbamate family which is capable of binding with copper to enhance its action. Metabolite of disulfiram, ditiocarb, forms a complex with copper blocks the machinery that cells use to dispose of misfolded and unneeded proteins. Reduction of oxidised protein, protein inactivation, misfolding and aggregation is enhanced by preventing thioredoxin-mediated reduction of oxidised proteins.Disulfiram facilitates intracellular copper uptake and induces apoptosis of cancer cells. Also inhibits activating transcription factor/cyclicAMP responsive element binding protein. It is a DNA demethylating agent and facilitates cell death. Starting from 1970s, disulfiram and its antineoplastic property were a buzz. Clinical trials between by a Danish-Czech-US team contribute much to this information. There are several points that showthis “old drug” disulfiram has definitely opened a prospective new medication for cancerand offers a less expensive treatment.

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PH CLIN 14

TRIPLE RECEPTOR AGONIST: ANTIDIABETIC AND ALZHEIMER'S DISEASE

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Alzheimer's disease patients may show impaired glucose utilization in brain, leading to cognitive decline. Recently, diabetes-induced dementia has been called "type 3 diabetes", based on features in common with those of type 2 diabetes and the progression of AD. Impaired glucose uptake and insulin resistance in the brain are important issues in type 3 diabetes, because these problems ultimately aggravate memory dysfunction in the brain.

Glucose-dependent insulinotropic polypeptide (GIP) is described under incretin hormones and growth factors. Neurons express the GIP receptor, and GIP and its agonists can pass through the blood brain barrier and show remarkable neuroprotective effects by protecting synapse function and numbers, promoting neuronal proliferation, reducing amyloid plaques in the cortex and reducing the chronic inflammation response of the nervous system. Long-acting analogues of GIP that are protease resistant had been developed as a treatment for type 2 diabetes. It has been found that such GIP analogues show good protective effects in animal models of Alzheimer's disease. Novel dual agonist peptides that activate the GIP receptor and another incretin receptor, glucagon-like peptide -1 (GLP-1), are under development that show superior effects in diabetic patients compared to single GLP-1 agonists.

GLP- 1 agonists could reduce amyloid plaques, neurofibrillary tangles and neuroinflammation in the hippocampi of 12-month-old APP/PS1/tau female mice; activation of PKA-CREB signaling pathway and inhibition of p38-MAPK might be the important mechanisms in the neuroprotective function. The study demonstrated that GLP-1R agonistsmight have the potential to be developed as a novel therapy for AD.

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PH CLIN 15

TOPIRAMATE INCREASES RISK OF CONGENITAL ABNORMALITIES

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Anti-epileptic drugs taken during pregnancy are found to be more harmful than with epilepsy, it increases the chances of congenital abnormalities for fetus. Topiramate is FDA approved as initial monotherapy in patient with generalized tonic clonic seizures and as a preventive treatment in migraine headache. In addition, topiramate is currently being investigated in combination with phentermine for the treatment of obesity.

Topiramate is a sulphamate substituted monosacchride which has effects on multiple ways, it effects cellular polarization by acting on various ion channels and inhibiting carbonic anhydrase enzyme Preliminary registry data identified an increased risk of birth defects with the use of topiramate in pregnancy, specifically abnormalities such as cleft lip, cleft palate. Various retrospective studies provide evidences to prove the association between topiramate and the occurrence of oral cleft abnormalities and other congenital abnormalities.Developmental defects like craniofacial defects were proved for topiramate using in animal models. And some post marketing studies also showed the increase risk of craniofacial abnormalities for topiramate.

The mean birthweights for live infants exposed in utero to topiramate either as monotherapy or as part of combination therapy were within the normal range with a trend to lower birth weight in polytherapy exposures.This review uses the various accumulated evidences consistently to suggest that first trimester use of topiramate increases the risk of congenital abnormalities.

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PH CLIN 16

THE EMERGING ROLE OF METFORMIN IN GESTATIONAL DIABETES MELLITUS: A REVIEW

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Gestational diabetes mellitus (GDM) is a major contributor to hyperglycaemia of pregnancy. Use of Metformin during pregnancy is controversial and there is incongruity in the acceptance of treatment with metformin in women with GDM. In spite of short term safety measures, the placental transfer of metformin during GDM treatment and the absence of long-term safety data in offspring has regulators and prescribers cautious about its use.To determine the current role in GDM management, this literature review describes the physiological changes that occur in and otherforms of diabetes in pregnancy (DIP) and changes in guidelines for GDM diagnosis. Treatment options are considered, with a focus onits mechanism of action, the maternal, foetal and neonatal outcomes associated with its useand benefit versus risk when compared with the current gold standard, insulin.Investigation reveals thesafety and long-term benefits, to both mother and child, of using metformin as an alternate solution to insulin for GDM.

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PREVALANCE AND DIAGNOSISOF URINARY TRACT INFECTION AMONG HOSPITALIZED STROKE PATIENTS: A REVIEW

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Stroke accounts for the major cause of death worldwide. Every year 795,000 new cases were found and it is the second leading cause of death accounting for 11.80% of total death worldwide.Urinary Tract Infection(UTI) is regarded a common complication and potential risk factor. In this review, we aim to access the prevalence and diagnosis of UTI in hospitalized stroke patients. The association of UTI with stroke was found to be related to neurogenic lower urinary tract dysfunction (NLUTD). NULTD is associated with voiding dysfunction and females were more prone post stroke UTI. Other factors were older age, Rankin scale score and post-void residual volume >100ml.

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PH COL 01

STUDIES ON MEMORY ENHANCING PROPERTY OF ALSHIMA - A POLYMHERBAL FORMULATION IN EXPERIMENTALLY INDUCED ALZHIEMER'S DISEASE IN MICE

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Back ground and objectives: The work is focused on generating scientific data on the nootropic activity of *Alshima*, in Alzheimer's induced mice.

Methods: Evaluation of nootropic activity was done by using 3 doses of PHFA (250, 500 & 750mg/kg) in invivo models using Elevated plus maze test(EPM), passive shock avoidance paradigm,Spatial learning in Morris water maze&Loco motor function test.

Results: Drug treated animal group in Elevated plus Maze (EPM) test model showed decrease in Time Latency (TL)compared to controlgroup. Passive shock avoidance test model showed increased Step downLatency (SDL) and decreased Time Spend in Shock Zone (TSZ) value whereasMorrison Water Maze (MWM) test model showed decrease in Escape Latency Time (ELT) and increase in Time Spent in Tetra Quadrant (TSQ). Poly Herbal Formulation Alshima (PHFA) did not show any significant changes in loco motor function, which suggested its non sedative action.

Conclusion: The present study on nootropic activity with PHFA has shown significant nootropic activity in different animal models.

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PH COL 02

GENE THERAPY IN TREATMENT OF CANCER

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Cancer is a disease that afflicts particular organs and so called as blood cancer, lung cancer and so on. The existing treatment is more focussed on palliative care with treatments strategies like cyto-toxic chemotherapy, surgery or radiation which itself will be toxic to other healthy tissues. In 2014, a study which was conducted around 5000 cancer subjects showed that, 43% of tumours in a particular anatomic site are genetically similar to tumours from different organs and tissues of body. This trend was not only seen in carcinoma but also in neoplasms such as melanoma, acute myeloid leukaemia and glioblastoma. A recent development in genomic studies reveals that an organ serves as epicentre for the development of cancer which could radiate and consume a person. This constitutes the classical view and influences treatment strategy today.

Gene therapy is a group of experimental technique for correcting defective genes that are responsible for disease development. This can be done by replacing mutated or diseased gene with a healthy copy of gene, inactivation or knock out of mutated gene or introduce a new gene to help fight a disease. There are 324 potential genes identified that can drive cancer progress in our body. The broad field of gene therapy promises a number of innovative treatments that are likely to become in preventing deaths from cancer with minimal side effects as compared to conventional therapy.

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PH COL 03

EVALUATION OF EFFECT OF NERIUM OLEANDER IN DIABETIC NEUROPATHY

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Present investigation evaluates the effect of hydro alcoholic extract of Nerium oleander (NO) in the management of diabetic neuropathy. Diabetic neuropathy was induced by streptozotocin (STZ) [60 mg/kg, i.p.]. Confirmation of neuropathy various parameters like glucose level, analgesic response, muscle coordination, and intestinal transit were checked. Loss of muscle coordination were checked by rata road apparatus and Swimming Endurance Test, whereas declination of analgesic response was done by tail flick response and writhing reflex. There was significant ($p<0.01$) improvement in Analgesic response like as well as muscle coordination response was observed in the rats treated with the Hydro ethanoilc extract of NO compared to negative control group. The given study concluded that by improving the analgesic response, muscle coordination and intestinal transit NO is beneficial for the management of DN.

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SYNTHESIS AND ANTI-DEPRESSANT EVALUATION OF NOVEL HETEROCYCLIC COMPOUNDS DERIVED FROM CHALCONES

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The pyrazole ring is a prominent structural motif found in numerous pharmaceutically active compounds. Pyrazolines display a broad spectrum of potential pharmacological activities and are present in a number of pharmacologically active molecules such as phenazone/ amidopyrene/ methampyrone (analgesic and antipyretic), azolid/ tandearil (anti-inflammatory), indoxacarb (insecticide) and anturane (uricosuric).Changes in their structure have offered a high degree of diversity that has proven useful for the development of new therapeutic agents having improved potency and lesser toxicity.A new series of Chalcones**(2a-j)** were prepared by reacting substitiuted aldehydes and substituted ketones in alcohol medium in presence of NaOH. The chalcones undergoes selective cyclization with phenoxy acetic acid hydrazide**(1)** in glacial acetic acid medium to yield the title compounds 1, 3, 5-trisubstituted Pyrazolines**(3a-j).** The newly synthesized compounds were screened for their *In-Vivo* antidepressant activity by tail suspension test and forced swimming test. Some of the tested compounds **3d, 3e** showed very good activity when compared to the standard drug Imipramine. The new compounds were assigned on the basis of ^{1}H-NMR, IR, Mass spectral data and elemental analysis.

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POTENTIAL PHARMACODYNAMIC AND PHARMACOKINETIC INTERACTION OF POMEGRANATE JUICE AND NATEGLINIDE AGAINST DIABETIC INDUCED COMPLICATIONS IN RATS

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Objective: Pomegranate can inhibit CYP2C9 activity which is majorly responsible for metabolism of nteglinide. The present study has been undertaken to evaluate pharmacokinetic and pharmacodynamic interaction of pomegranate and nateglinide against diabetic induced complications.

Methods: Diabetes was induced by administration of alloxan (150mg/kg, i.p). Rats (n = 8) were treated with pomegranate juice (PJ) (3ml/animal, p.o.), nateglinide (NAT) (20mg/kg, p.o.) and the combination of both for 4 weeks. Twenty four hours after the last treatment pharmacodynamic interaction of PJ and NAT were evaluated by antinociceptive activity, electrocardiographic parameters, serum glucose, biomarkers and lipid profile values. Influence of PJ on pharmacokinetic of NAT was studied by HPLC method.

Results: Combination of PJ and NAT resulted significant improvement against diabetic complications compared to NAT alone treated group. Combination group was found to be best protective group by significant improvement of antinociceptive activity, restoration of electrocardiographic parameters, serum glucose, biomarkers and lipid profile compared to NAT alone treated group. Results of pharmacokinetic study revealed that PJ increases bioavailability and half life, along with decrease in clearance and elimination rate of NAT.

Conclusion: From this study it can be concluded that combination of PJ and NAT exhibited profound protection compared to NAT alone treated group against diabetic complications. Findings of pharmacokinetic interaction justified the results of pharmacodynamic interaction.

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PROTECTIVE EFFECT OF ELLAGIC ACID AGAINST LEAD INDUCED MYOCARDIAL TOXICITY

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Background: Chronic exposure of lead is responsible for life threatening cardian manifestations. Ellagic acid (EA), by virtue of its antioxidant potential, is responsible for cardio-protective activity. The present study was under taken to evaluate protective effect of EA against lead induced myocardial toxicity.

Materials and Methods: Rats were treated with high (50 mg/kg, p.o.) and low (25 mg/kg, p.o.) dose of EA for 12 weeks. Apart from normal controls, all other groups were exposed to lead acetate (100 mg/litre) in drinking water for 12 weeks. Effects of different treatments were evaluated by changes in electrocardiographic parameters, serum biomarkers and tissue antioxidant levels and histological studies.

Results: Compared with the only lead exposed group both high and low dose of EA exhibited a significant decrease in serum biomarkers and increase in tissue antioxidant levels. EA treatment was also responsible for significant improvement in ECG parameter and histological score.

Conclusion: The present findings clearly suggest that the EA reported dose dependent beneficial effect against lead induced myocardial toxicity.

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PH COG 01

INCREASING TRENDS IN USE OF HERBAL MEDICINE: OPPORTUNITIES AND CHALLENGES

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Potential benefits of herbal medicines have been established to alleviate all kinds of health problems as an alternative to herbal medicine. By using chemotaxonomical relations or the knowledge from Indian system of medicine 'Ayurveda' regarding medicinal plants and their properties serve as a marker for drug discovery by phytochemical screening techniques.

Authentification and quality assurance is another area to be ensured to get quality herbal products. Herbavigilance also to be considered with the knowledge that those substances produce changes in physiological activities and produce therapeutic benefits may have side effects and adverse reactions as well.

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PH COG 02

IN-VITRO ANTIOXIDANT ACTIVITY OF *SAMANEA SAMAN (JACQ.) MERR* PODS

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Oxidative stress has been implicated in the pathology of many diseases such as atherosclerosis, coronary heart diseases, inflammation, stroke, diabetes mellitus, cancer and aging .The relative importance of reactive oxygen species has attracted increasing attention over the years. ROS mainly includes free radicals such as nitric oxide (NO), hydroxyl radical ($OH^{\cdot}$) and superoxide anions ($O^{-\cdot}_2$) and they damage important cellular components causing injury through lipid peroxidation. However, the antioxidants will show resistance against oxidative stress by scavenging the free radicals inhibiting the lipid peroxidation and by other mechanism and their by preventive disease.

In the present investigation, the 70% ethanolic extract of samaneasaman (70% EESS) was evaluated for in-vitro antioxidant activity by beta carotene linolenic acid method, total antioxidant capacity, Polyphenol oxidase assay and De oxy ribose degradation assay. In the all the methods the extract showed dose dependent increase in the absorbace. In the beta carotene linoleic acid method, the antioxidant activity for ascorbic acid, at 500µg/ml was found to be 0.116 and the extract showed 0.185 at 500µg/ml concentration. The 70% EESS indicates the pods has significant ability to scavenge free radicals.