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CHOLELITHIASIS -CASE REPORT

Taduka Taruni[1*], Dr. A Srinivasa Rao[1], Dr. AV Kishore Babu[1], L. Anjali[2], P. Divyani[2]

Taduka Taruni[1*], Pharm D V year, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad – 501504

Dr. A Srinivasa Rao, M. Pharm, Ph.D., F.I.C

Dr. AV Kishore Babu, Pharm D, Ph.D.

L. Anjali, Pharm D V year, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad

P. Divyani, Pharm D V year, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad

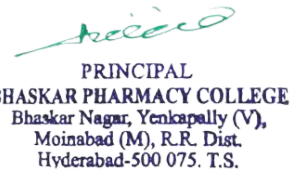
ABSTRACT**:** A 45-year-old female patient was admitted in the Gastroenterology ward, with chief complaints of pain in the lower abdomen since, 1 week. The pain is sudden in onset and increase in severity, dragging in nature. No aggravating factors. Relived on medication. No H/O burning micturition, loose stools. And has no similar history in the past. On evaluation it is shown to be the condition of cholelithiasis.

KEYWORDS - Gallstones, Cholecystectomy -

OBJECTIVE -To discuss the aetiology that can result in cholelithiasis in the patient; To evaluate the physical findings, laboratory test and diagnostic imaging tests in the patient. To review the various treatment options for the patient with cholelithiasis

INTRODUTION**:**

- Gallstones (cholelithiasis) consists of deposits of digestive fluid that can form into a hardened stones in the gall bladder.
- The gall bladder is the small organ located just beneath the liver.
- The gall bladder holds the digestive fluids known as bile that is released into the small intestine.
- The stones can be small and one or more large stones, in many cases they do not produce any symptoms.
- The predisposing factors include:
    1. Changes in the composition of bile that can affect the solubility of its constituents.
    2. High blood cholesterol levels.
    3. Female gender
    4. Obesity
    5. Several pregnancies in young women, especially when accompanied by obesity.
    6. Diabetes mellitus.



ANTIDIABETIC ACTIVITY AND PHYTOCHEMICAL SCREENING OF LEAVES EXTRACT OF DIOSPYROS PEREGRINE IN ALLOXAN-INDUCED DIABETIC RATS

K. P. Chandralekha[1*], Dr.M.Sri Ramachandra[1], Dr.A.Srinivasa Rao[1]

[1]Department of Pharmacology, Bhaskar College of Pharmacy, Moinabad, Ranga Reddy, Hyderabad, Telangana-500075

***Corresponding Author**

Chandralekha[1*],

Department of Pharmacology,

Bhaskar College of Pharmacy,

Hyderabad, Telangana-500075.

ABSTRACT

Diabetes mellitus is a most common endocrine disorder, affecting more than 300 million people worldwide. For these therapies developed along the principles of allopathic are often limited in efficacy, Carry the risk of adverse effects, and are often too costly, especially for the developing world. In order to identify complementary or alternative approaches to existing medications, we studied the anti-diabetic potential of leaves of *Diospyros peregrine*. The acute oral toxicity studies of the extracts revealed no toxic effects up to the levels of 2000mg/kg b.wt. The aqueous and alcoholic extracts of 20 and 30mg/kg body weight of *Diospyros peregrine* was screened for the presence of hypoglycemic and antidiabetic activity. In this study diabetes was induced by a single IP dose Alloxan monohydrate in 72hrs fasted rats. The FBGL was carried on 7th, 14th and 21st day and OGTT was measured on 8th, 15th and 22nd day. Glibeclamide was taken as the standard and the results are quite comparable with it. The studies were indicated that the leaves of *Diospyros peregrine* are effective in regeneration of insulin secreting β-cells and thus possess antidiabetic activity. The aqueous and alcoholic extracts showed significant effect in decreasing the Fasting blood Glucose level and oral glucose tolerance test of rats and it's also showed good hypoglycemic activity in normal glycemic rats. The preliminary phytochemical analysis of the extracts of *Diospyros peregrine* revealed the presence of Alkaloids, Tannins,

PRINCIPAL
BHASKAR PHARMACY COLLEGE
Bhaskar Nagar, Yenkapally (V),
Moinabad (M), R.R. Dist.
Hyderabad-500 075. T.S.

Evaluation And Characterization Of Bioadhesive Drug Delivery Systems

Niranjan Panda[1] , Satyabrata Jena[2] , Putta Rajesh Kumar[3] , Mrs. Ayushi Pradhan[4] , Pragati Ranjan Satpathy[5] , Mrs. Madhu Chhanda Mishra[6]

[1]Professor & HOD, Department of Pharmaceutics, Anwarul Uloom College of Pharmacy, Hyderabad niranjanpharma82@gmail.com

[2]Associate Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Hyderabad

[3]Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Hyderabad

[4]Assistant Professor, Department of Pharmaceutics, School of Pharmacy and Lifesciences Centurion University of Technology and Management, Bhubaneswar, Odisha

[5]Associate Professor, Department of Pharmaceutical Analysis Sri Jayadev College of Pharmaceutical Sciences, Naharkanta, Bhubaneswar

[6]Associate Professor, Department of Pharmaceutical Analysis Sri Jayadev College of Pharmaceutical Sciences, Naharkanta, Bhubaneswar

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Abstract

Due to their capacity for localized medication administration and sustained release, bio adhesive systems are gaining more and more attention. As a result of the non-specific targeting, side effects are reduced. This review gives a general overview of the knowledge of bioadhesive drug delivery systems and the most current developments in their composition.

Keywords- Bioadhesive, Mucoadhesion, Nanoparticles, Drug Delivery Systems.

INTRODUCTION

Adhesion may be defined simply as a process of "fixing" of two surfaces to one another. Bioadhesion may be defined as the binding of a natural or synthetic polymer to a biological substrate. When the substrate is Mucus layer, the term is known as Mucoadhesion. The rationale behind using mucoadhesive system is the prolonged retention time in the Gastro-intestinal tract resulting in maximum absorption and hence enhanced bioavailability.

(i) General Concepts of Mucoadhesion-Mucus is a viscous and heterogeneous biological product that covers many epithelial surfaces. Cells secreting mucus are located at various locations in the body like Gastrointestinal, Ocular, Nasal, Buccal, Reproductive and Respiratory tracts. Mucus functions as a lubricant to reduce shear stress and acting as barrier against harmful substances. Goblets cell containing Mucus are located in the epithelium. Mucus is located in large granules in the goblet cells. Mucus granules are located in the apical side of the goblet cell giving a balloon shaped appearance of these cells. It is released by the process of Exocytosis or Exfoliation of the Whole cell. Secretion of Mucus varies with the age, sex, body location, and health condition but the average mucus turnover is nearly 6 hr. Apart from this mucus includes secretory IgA, lysozyme, Lactoferrin, lipids, polysaccharides, and various other ionic species. Goblet cells undergo two types of granules exocytosis: Basal secretion, which is featured by a low level, continuous and unregulated secretion, and stimulated secretion, which is a regulated exocytosis of granules in response to extracellular stimuli. The stimulated Pathway dramatically increases the mucus secretion. (Serra, Doménech, and Peppas, 2009) Mucus is mainly composed of water (>95) and mucins, which are glycoproteins of very high molecular weight (2-14 x 1012 g/mol). Along with these, proteins, lipids and mucopolysaccharides are found in small proportions (<1%). Mucin

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FEBRILE SEIZURES A CASE REPORT:-

Ponemoni Divyani[1]*, Dr. A Srinivasa rao [2], Dr. AV Kishore Babu[3], K. Divya[4], T. Taruni[4]

Ponemoni Divyani[1]*pharm D V year, Bhaskar pharmacy college, Yenkapally, Moinabad, Telangana

Dr.A . Srinivasa Rao, M. Pharm.,Ph.D.,F.I.C.

Dr. AV Kishore Babu, pharm D, PhD.

K. Divya[2] Pharm D V year, Bhaskar pharmacy college, Yenkapally , Moinabad, 501504

T. Taruni[2] Pharm D V year, Bhaskar pharmacy college, Yenkapally, Moinabad, 501504

ABSTRACT:-

A 7 months old female child admitted in pediatric ward with chief complaints of fever since morning, one episode of seizures activity, 10 episodes of stools. Febrile seizures are the most frequent of seizure disorder in childhood. Evaluated in OP showed the result of Febrile seizures. She has a past history of developed loose stools sudden onset of watery inconsistency .But not blood tinged or not associated with vomiting's. Then in the morning she developed sudden onset of high grade fever, which is relieved on medication. It is associated with rash,1-episode of seizures activity. The signs include ; up rolling of eyes(+), fisting of hand (+) .But not associated with deviation of mouth, and no urine incontinence. No signs of dehydration was found. No signs of pallor, icterus, cyanosis, lymphadenopathy, oedema. Initial investigations were done. Then she was started with IVF (RL- 23ml/hr) , antibiotics (ceftriaxone), Benzodiazepines(frisium, midazolam) probiotic (enterogenia).

KEYWORDS:-

FS(febrile seizures)., LP(lumbar puncture).,MTS(mesial temporal sclerosis).

INTRODUCTION:-

These are seizures, which occurs between 3 months to 5years of age, associated with fever but without evidence of Intracranial infection or defined cause for seizure, and without any H/O seizures earlier. These febrile seizures occurs because the developing brain cannot withstand rapid and large increase in temperature.

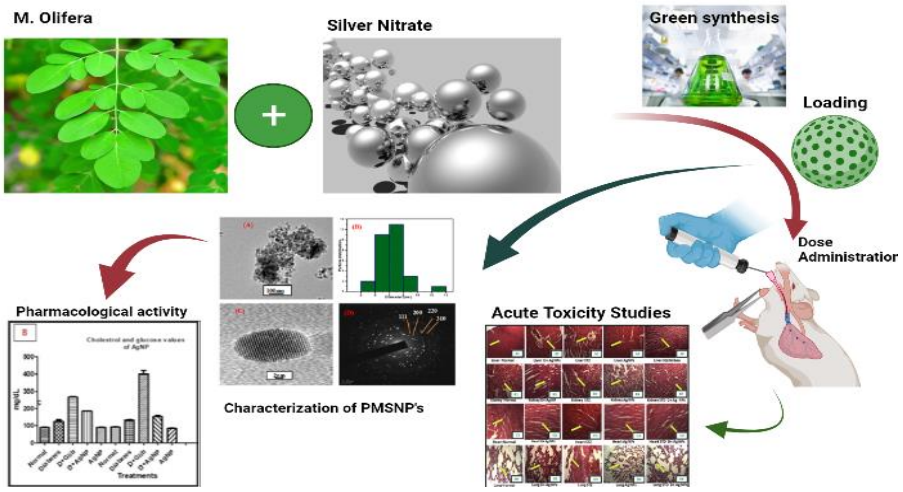
Types of seizures:-

1.Simple febrile seizures:-less then 15 minutes of duration, no focal features s/o focal origin of seizure only one attack in one febrile episode of fever

DEVELOPMENT OF PLANT-MEDIATED SILVER NANOPARTICLES& THEIR PHARMACOLOGICAL EVALUATION

Geetha P[1], Navanita S K[2], Ganesh Kumar Y[3], Hemanth Kumar Boyina[4], Vinod Kumar Reddy Bondu[5], Bala Gurivi Reddy Vemireddy[6], Mohd Abdul Hadi[7], Kalakotla Shanker[8]*

Abstract:
Diabetes is among the most common debilitating and non-transferable diseases on the planet. The idea of using nanoparticles as a drug to treat diabetes mellitus seems intriguing. The Ag nanoparticles (Ag NPs) were effectively produced utilizing *Moringa olifera* (family: *Moringaceae*) plant extract employing a simple, cheaper, faster, and environmentally friendly green synthesis process. The antidiabetic effect of the produced Ag NPs was also tested in vivo. In the presence of plant extract, silver nitrate was converted to silver ions (Ag). XRD, FTIR, UV, XPS, and HRTEM studies characterize the formed Ag NPs. Ag NPs that have been biosynthesized, crystal nature was confirmed through XRD analysis and confirmed by UV-visible spectroscopy. FT-IR spectra were used to verify the presence of various functional groups in the biomolecules, forming and stabilizing the nanoparticles. The size of the NPS was in the range of 20-40 nm determined by HRTEM. The induction of diabetes using STZ showed increased blood glucose, cholesterol, triglycerides, LDL, VLDL, massive loss in body weight. These changes were reversed following the treatment of diabetic rats for 28 days and showed significant inhibition ($p < 0.001$) at a dose range of 0.2 mg/kg leaf extract and 0.2 mg/kg Ag NPs compared with the extract-treated group. These obtained results suggested that plant-mediated Ag NPs have shown promising antidiabetic and anti-hyperlipidemic activity compared to the crude extract.



Graphical abstract

Keywords: Diabetes, *Moringa*, AgNPs, Anti-hyperlipidemic, Anti-diabetic activity

[1]Department of Physics, GMR institute of Technology, Rajam-532127, Andhra Pradesh, India.
[3] Department of Pharmaceutics, KVK College of Pharmacy, Surmaiguda, Abdullapurmet, R.R Dist. TS, India. 501512
[4]Department of Pharmacology, School of Pharmacy, Anurag Group of Institutions (formerly Lalitha College of Pharmacy), Ghatkesar, Medchal, Hyderabad, Telangana, 500088, India
[5]Department of Pharmaceutical Biotechnology, JSS College of Pharmacy, JSS Academy of Higher Education & Research, Ooty, Nilgiris, Tamil Nadu, India
[6]PGT Physics, New Middle East International School, Riyadh, Kingdom of Saudi Arabia
[7]Bhaskar Pharmacy college, Moinabad, R.R District, Hyderabad-500075
[2, 8]*Department of Pharmacognosy & Phyto-Pharmacy, JSS College of Pharmacy, JSS Academy of Higher Education & Research, Ooty, Nilgiris, Tamil Nadu, India.

***Corresponding Author:** Kalakotla Shanker
*Department of Pharmacognosy & Phyto-Pharmacy, JSS College of Pharmacy, JSS Academy of Higher Education & Research, Ooty, Nilgiris, Tamil Nadu, India. ORCID ID: 0000-0003-3085-3533,
Contact number: 8374602737, Email: drshanker@jssuni.edu.in, shankerkalakotla@gmail.com

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Latest drug developments in the field of Internal medicine: Cardiology, Heart failure, Diabetes, and Inflammation

Darla Raju [1*], Mahendra Kumar Panigrahi[2], Modi Yagneshkumar Dipakbhai[3],Pankaj Kumar[4], Muppaneni Srikanth[5],Boi Basanta Kumar Reddy[6], Satyabrata Jena[7],Rama Prasad Padhy [8].

1) Associate Professor,Department of Pharmacognosy and Phytochemistry,Joginpally B R Pharmacy College, Yenkapally (V), Moinabad (M), Rangareddy District, Hyderabad,Telangana,India-500075

2) Professor, Department of Pharmacognosy, Danteswari college of Pharmacy, Borapadar, Raipur Road, Jagdalpur, Chhattisgarh,India -494221.

3) Assistant Professor,Department of Pharmaceutics,Sigma Institute of Pharmacy, SIGMA campus, Bakrol, Ajwa Nimeta Road, Waghodia,District:- Vadodara, Gujarat,India-390019.

4) Professor, Department of Pharmacology, Adesh Institute of Pharmacy and Biomedical sciences, Adesh University, NH-7, Barnala Road, Bathinda, Punjab,India-151001.

5) Professor,Department of Pharmacognosy and Phytochemistry,Bhaskar Pharmacy College, Yenkapally (V), Moinabad (M), Rangareddy District, Hyderabad, Telangana,India-500075.

6) Professor, Department of Pharmaceutics, Danteswari college of Pharmacy, Borapadar, Raipur Road, Jagdalpur, Chhattisgarh,India -494221

7) Associate Professor,Department of Pharmaceutics,Bhaskar Pharmacy College, Yenkapally (V), Moinabad (M), Rangareddy District,Hyderabad,Telangana,India-500075.

8) Professor cum Vice Principal,Danteswari College of Pharmacy,Borapadar, Raipur Road, Jagdalpur, Chhattisgarh, India-494221.

Corresponding author: Email:rajudarlaofficial@gmail.com

Abstract:

Internal medicine is a field of medicine where doctors use their clinical judgment and scientific knowledge to identify and treat a wide range of illnesses and health issues in adults. The greatest cause of early death and disability in people is cardiovascular disease (CVD), and its prevalence is rising around the globe. Due to their significant impact on the rising cost of healthcare, CVDs also place a significant socioeconomic burden on the general populace. Due to its rising incidence worldwide and the tight association between persistent hyperglycemic states and obesity, liver disease, and several cardiovascular problems, type 2

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A STUDY ON HYDROALCOHOLIC EXTRACT OF CITRULLUS COLOCYNTHIS LEAVES: PHARMACOGNOSICAL, PHYTOCHEMICAL AND IN-VITRO ANTI-OXIDANT EVALUATION

Sherisha Bhavani D[1*], Laxmi Prasanna Y [3], Varsha S[3], Nikitha Reddy D[3], Swathi Goud N[3], Naveen G[3], Sumalatha K[2], Nagamani C[1]

[1]Associate Professor, Department of Pharmaceutical Chemistry, Bhaskar Pharmacy College, Hyderabad, India.
[2]Associate Professor, Department of Pharmacognosy, Bhaskar Pharmacy College, Hyderabad, India.
[3]Bhaskar Pharmacy College, Hyderabad, India.

ABSTRACT

The objective of the present work is to study the Pharmacognostical, Phytochemical characterization and in vitro anti-oxidant potential of hydro alcoholic extract of *Citrullus colocynthis*. In developing countries, herbal medicines account for about 80% of primary health care used by the global population. It is believed that this is attributed to the chemical constituents in them which are part of the physiological functions of the living flora, thus they are considered to be more compatible with the human body due to their physiological functions. *Citrullus colocynthis* (L.) Schrad. is a species of cucurbit that belongs to the family of Cucurbitaceae. It is a perennial herbaceous vine that grows up to three meters in length, flowers and has a berry-like fruit. The leaves of *Citrullus colocynthis* was collected in and around Vellore. The leaves powder was analyzed macroscopically, microscopically, physiochemically, and phytochemically by macroscopic, microscopical, and physicochemical methods. A variety of chemical tests were performed on this hydro-alcoholic extract of leaves of *Citrullus colocynthis* to identify flavonoids, phenolic compounds, alkaloids, glycosides, carbohydrates, carotenoids, proteins, tannins, amino acids, and sterols as per standard procedures. The total phenol content of *Citrullus colocynthis* was determined by the Folin-Ciocalteu colorimetric method. The aluminum chloride colorimetric technique was used for estimation of total flavonoid estimation. DPPH stable free radical method is an easy, rapid and sensitive way to survey the antioxidant activity of specific compound or plant extracts. The reducing power ability of plant extracts was screened by assessing the ability of the test extract to reduce FeCl3 solution as mentioned. The total phenolic content in the hydro alcoholic extract of C. colocynthis leaves was found to be 64.6 mg/g. The total flavonoid content in the hydro alcoholic extract of *C. colocynthis* leaves was found to be 85.5 mg/g. A hydroalcoholic extract from *Citrullus colocynthis* showed moderate antioxidant activity despite having strong antioxidant properties despite plants' strong antioxidant properties. By absorbing electrons from antioxidants, it neutralizes its free radical nature. There is a scientific foundation for the prospect of applying the leaves of *Citrullus colocynthis* for the treatment of anti-oxidants through the present study. A future scope of work includes identifying the chemical components responsible for these activities and conducting in-vivo pharmacological screenings.

Key words: Citrullus Colocynthis, Herbal Medicine, Anti-Oxidant Activity, Phenolic, Flavonoid Content.

Corresponding Author: **Sherisha Bhavani D** Email: sherisha0110@gmail.com

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INTRODUCTION

In indigenous cultures (such as Black African and Native American cultures) herbal remedies have played a significant role in healing rituals, while other cultures have developed traditional medical systems (such as Siddha, Ayurveda, Unani and Traditional Chinese Medicine) that also incorporated herbal remedies (Ampofo

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MALDI-TOF HR-MS TECHNIQUES FOR FRAGMENTATION ANALYSIS OF NOVEL POLYCYCLIC MICROTUBULE DISASSEMBLY INHIBITOR DRUG MOLECULES

Madhuchhanda Mishra
Associate Professor, Department of Pharmaceutical Analysis, Sri Jayadev College of Pharmaceutical Sciences, Naharkanta, Bhubaneswar, Odisha India-752001,

Pragati Ranjan Satpathy* (Corresponding Author)
Associate Professor, Department of Pharmaceutical Analysis, Sri Jayadev College of Pharmaceutical Sciences, Naharkanta, Bhubaneswar, Odisha India—752001
Email pharm.prsathpathy@gmail.com

Nilima Shukla
3Professor Cum Principal, Department of Pharmaceutical Analysis, Sri Jayadev College of Pharmaceutical Sciences, Naharkanta, Bhubaneswar, Odisha India—752001

Sriram Chandra Nandi
M.Pharm, Department of Pharmaceutical Analysis, Sri Jayadev College of Pharmaceutical Sciences, Naharkanta, Bhubaneswar, Odisha India—752001

P. Sobitha Rani
Associate Professor, Department of Pharmaceutics,
Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075

Abstract— Since 2010, matrix-assisted laser desorption ionisation time-of-flight mass spectrometry (MALDI-TOF MS) has been used in healthcare settings. Over the traditional method of biochemical identification, MALDI-TOF MS has a number of advantages, including simplicity, speed, precision, and affordability. Numerous challenges to detecting bacteria, fungi, and viruses can be overcome using this method. As technology developed, a growing number of databases tracked spectra, enabling the identification of species that had similar morphological, genotypic, and biochemical features. Due to improvements in sample preparation and database enrichment, using MALDI-TOF MS for identification has become more precise and rapid. MALDI-TOF MS has yielded encouraging results for colony identification and quick sample detection. Rapidly diagnosing extremely contagious and drug-resistant illnesses is a crucial use of MALDI-TOF MS. Here, we give a review of the scientific literature evaluating the efficiency of MALDI-TOF MS for identifying pathogenic bacteria, fungi, and viruses that are relevant to clinical settings. Although MALDI-TOF MS offers several advantages for finding clinical infections, it also has significant disadvantages. Because there aren't many spectra in the database and organisms have inherent similarities, it might be challenging to tell one species from another, leading to misidentifications. Additional testing

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THYMOQUINONE (TQ) INHIBITS INFLAMMATORY RESPONSE IN AN ALZHEIMER'S DISEASE RAT MODEL BY INHIBITING TNF-PRODUCTION

Ramya Krishna Ravuri

Bhaskar pharmacy College Department Pharmacology.

ABSTRACT

A promising therapeutic agent for Alzheimer's disease is thymoquinone (TQ) in Nigella sativa. In a rat model of AD, where aggregated Aβ(42) was infused into the hippocampus, TQ was administered orally at a dose of 25 mg/kg/day. Cognitive function was assessed using the Morris Water Maze task, and levels of inflammatory cytokines in the animals brain were measured. Protein expression related to synaptic plasticity, apoptosis, and neuronal migration was examined. On Day 3, the Aβ(42)-infused group exhibited cognitive impairment compared to the control group, but TQ administration mitigated this effect. Levels of TNF-alpha, IL-1 alpha, and IL-1 beta did not differ significantly between groups. Aβ(42) infusion slightly reduced IFN-γ levels, which were restored by TQ treatment. TQ improved memory performance, reduced inflammation (indicated by decreased IL-1 beta levels), and increased DCX protein levels, suggesting enhanced neurogenesis. Both Aβ(42) groups showed lower MAP2 and PARP protein activation, indicating potential neuroprotective effects. Furthermore, a positive correlation was observed between IL-1 beta and DCX levels. These findings suggest that TQ may benefit AD by promoting neurogenesis, modulating IFN-γ levels, and reducing inflammation. TQ shows promise as a therapeutic agent for AD by targeting neuroinflammation and neuroprotection pathways. Further research is needed to understand the underlying mechanisms and assess the translation of these findings to human studies.

Keywords: Alzheimer's Disease, IFN-γ levels, Mitogen-Activated Protein Kinase2, protein Poly (ADP-ribose) Polymerase.

INTRODUCTION

In Alzheimer's disease (AD), plaques and neurofibrillary tangles are two of the main pathological hallmarks. Inflammatory activity of microglia is triggered by the neurotoxicity caused by these aberrant structures, resulting in neuronal death Animal models and AD patients show a microglial-driven response. A high level of specific cytokines and chemokines are produced when microglia become activated. ILs (Interleukins), TNFs (Tumour Necrosis Factors), IFNs (Interferons), and TGFs (Transforming Growth Factors) are linked in the aetiology of Alzheimer's disease and other brain illnesses. AD neuroinflammation may cause neuro-degeneration. In animal studies and humans, cytokine levels and administration were contradictory. The conflicting results complicated the definition of the roles of cytokines and chemokines in diagnosing and treating AD neurodegenerative disease. Traditional AD medication with acetylcholinesterase inhibitors (AChE) and N-methyl-D-aspartate receptor antagonists concentrates on mental functioning or cholinergic malfunction. Current Alzheimer's treatments focus on delaying intellectual abilities, behavioural, and psychological development. Complementary therapy is needed to avoid or minimize clinical signs and remove Pathological changes. As a result of their neuroprotective properties, herbal medicine has recently become more popular for treating AD. Black cumin seeds (Nigella sativa) contain thymoquinone (TQ), one of the main active ingredients. TQ may be used as a herbal medicine because of its wide range of therapeutic benefits. TQ's antioxidant, anti-inflammatory, and neuroprotective effects might help fight Alzheimer's.

Corresponding Author: - **Ramya Krishna Ravuri** Email: - ramyakrishna.ravuri@gmail.com

Impact of Technology on Alzheimer's Patients to Memorize Things

Chinmaya Mahapatra [1*], Soham Mandal[2], Abhra Das[3], Rasmita Jena[4],Pragati Baghel[5], Satyabrata Jena[6].

1) Associate Professor and HOD, Department of Pharmaceutics, School of Pharmacy, The Neotia University,Jhinger Pole, Diamond Harbour Rd, Sarisha, West Bengal-743368

*Corresponding author: Email:drchinmaya212@gmail.com

2) Assistant Professor, School of Pharmacy, The Neotia University,South 24 Parganas, West Bengal-743368.

3) Assistant Professor, Department of Pharmaceutics, School of Pharmacy, The Neotia University,Jhinger Pole, Diamond Harbour Rd, Sarisha, West Bengal-743368.

4) Assistant Professor, School of Pharmacy and Life Science,Centurion University of Technology and Management, Bhubaneswar, Odisha-752050

5)Associate Professor,Department of Pharmacognosy,Faculty of Pharmacy,Bharti Vishwavidhalaya, chandrakhuri, Durg, Chhattisgarh- 49122

6)Associate Professor, Department of Pharmaceutics,Bhaskar Pharmacy College, Bhaskar Nagar,Yenkapally, Moinabad ,Hyderabad, Telangana-500075

ABSTRACT: The work shows the effects and the methods that can be applied by the medical representative to provide the best methods in the application of the treatment of the patients. The use of technology is in making the improvement of the health and mental conditions of humans. This also shows some of the issues faced in the making of the improvement of the mental condition of the patients. It also shows that the rapid increase of diseases makes increase of the condition of the make the loss of the memory of humans. Thus leads to their non-independent movement around nature. The disease generally starts with the general loss of the short time memories but as time changes it increases and damages the cells of the brain. In some of cases, the rapid increase of the dieses in the brain of the human makes them face sudden death. Finally we discussed the ANOVA description for virus vector.

KEYWORDS: *Alzheimer's disease, technology, mental stability, Side effects of Alzheimer's disease, Quick remedies of Alzheimer's disease,*

Methods for Producing a Lipidic Drug Delivery System with Maximal Bioavailability Improving the Absorption of a Poorly Water-Soluble Anti-Hypertensive Drugs

Sobitha Rani* (Corresponding Author)[1]

[1] Associate Professor , Department of Pharmaceutics, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075,

Email sobhitarani@gmail.com

V Lokeswara Babu[2]

[2]Associate Professor & HOD , Department of Pharmaceutics, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075,

Satyabrata Jena.[3]

[3]Associate Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075

G Susmitha.[4]

[4]Assistant Professor, Department of Pharmacy Practice, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075

Surisetty Sridevi.[5]

[5] Assistant Professor, Department of Pharmaceutics, Mallareddy College of Pharmacy, Maisammaguda, Dhulapally, Secunderabad, Hyderabad, Telangana, India-500014

N. Rajitha[6]

[6] Assistant Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075

Mannam Mounika[7]

[7] Assistant Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075

Sanjay Kumar Gupta[8]

[8] Associate Professor and HOD, Department of Pharmaceutics, Global College of Pharmacy, Moinabad, Hyderabad. Telangana, India-501504

Abstract— A standard delivery technique is utilised to provide the majority of pharmaceuticals used to treat various illnesses, which are often taken orally. Due to its weak water solubility, chemical stability, and pre-systemic metabolism, oral dosage has a low bioavailability. Pharmaceuticals with low solubility and bioavailability in water pose a challenge to formulation experts. One of the new technologies created to solve these issues is lipid-based medicine delivery systems (LBDDS). Increased bioavailability can be achieved by encapsulating or solubilizing the drug in lipid excipients, which can also aid in solubilization

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FORMULATION AND EVALUATION OF ATENELOL LIQUID FILL FORMULATIONS FOR SOFT GELS

Sowmya Maddukuri[1*], Devineni Jyothirmayee[2], Sobitha Rani Pedireddi[1] and Udaya Chandrika Pulla[1]

[1]Bhaskar Pharmacy College, Bhaskar Nagar, Yenkapally, Moinabad, RR District 500075, Telangana, India.
[2]KVSR Siddhartha College of Pharmaceutical Sciences, Siddhartha Nagar, Vijayawada 520008, Andhra Pradesh, India.

***Corresponding Author: Sowmya Maddukuri**
Bhaskar Pharmacy College, Bhaskar Nagar, Yenkapally, Moinabad, RR District 500075, Telangana, India.

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ABSTRACT
The present investigation was under taken with the objective of enhancing the permeability of Atenolol (ATL), a β1 selective receptor antagonist through the preparation of liquid fill formulations for soft gels. Liquid fill formulations for ATL(25mg) soft gels were prepared using excipients such as dimethyl sulfoxide(DMSO), Ethanol, hydrophilic vehicles like Propylene glycol (PG), polyethylene glycol(PEG-400) and HP-β-CD, Water. The prepared formulations were evaluated for Appearance, pH, content uniformity, viscosity, drug excipient compatibility and *in vitro* drug release parameters. Stability of the optimised formulation was evaluated by storing for six months, at 40^0C and 75% RH. Among all the prepared formulations, formulation F3 containing 40% DMSO, 23.75% PEG-400 and 23.75% PG showed superior drug release (100% within 75sec) with definite physical and chemical stability. The results provide surveillance for developing soft gel capsule of ATL that give better rate of absorption, than existing dosage form and provide quick onset of action with better patient compliance.

KEYWORDS: Atenolol, *In vitro* dissolution, Liquid fill formulations, Stability, Viscosity.

INTRODUCTION
Atenolol (ATL) is a selective β1 receptor antagonist, a drug belonging to the group of beta blockers[1], without membrane stabilizing or intrinsic sympathomimetic activities.[2] ATL was introduced in 1976. It was developed as a replacement for propranolol in the treatment of hypertension.[3] Approved by US FDA in1981, whereas generic products of atenolol were available since 1988.[4] It has lower absorption window in the GIT.[5] Thus, it seems that an increase in gastric residence time may increase the absorption and bioavailability of drug.[6] The objective was to enhance its rate of absorption by formulating into soft gels.

Hypertension is the most common risk factor for Cardiovascular diseases and affects nearly two-thirds of adults aged 60 years or older. It is estimated that uncontrolled HTN is responsible for 7.5 million deaths per year worldwide and in USA alone accounts for over 47 billion dollars spent in health care services, medications and absent workforce. Despite various advances in the field it is projected that 1.56 billion people will suffer from HTN by 2025. 3 various randomized controlled trails have demonstrated that even slight blood pressure decreases such as 10mmHg reduces patients risk of stroke related mortality by 40%. ATL reduces renal vascular resistance in hypertensive patients.[7] Hence, ATL was chosen because of its anti-hypertensive activity, in order to increase its absorption.

Atenolol is white powder, freely soluble in methanol, DMSO and is practically insoluble in Acetonitrile, Chloroform.[8] ATL is used in the management of hypertension, angina pectoris, cardiac arrhythmias and myocardial infraction. It may also be used for the prophylaxis of migraine.[9] ATL is rapidly, but incompletely absorbed from the GIT, the oral bioavailability being about 50-60%.[10] ATL belongs to BCS class-III.[11] It has poor permeability in the lower GIT due to its hydrophilic nature.[12] The permeability is enhanced by addition of penetration enhancers like DMSO.[13] The originator brand name of ATL is TENORMIN where it is manufactured by AstraZeneca pharmaceuticals.[4] The dosage forms available in the market are tablets (25,50,100mg) and injection (0.5mg/ml). CATENOL (25,50,100mg), ATEN (25,50,100mg). ATL is mostly used in combination with Amlodipine ABITEN-A (Atenolol (50mg) + Amlodipine (5mg)).[14]

The pharmaceutical industry manufactures approximately 75% of its solid dosage form as

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PHARMACOGNISTIC, PHYTOCHEMICAL ANALYIS AND INVITRO OXIDANT ACTIVITY OF HYDRO-ALCOHOLIC EXTRACT OF PERGULARIA DAEMIA LEAF

Nagamani C[1]*, Tejashwini A[3], Tulasi reddy D[3], Uday Kiran Mudhiraj B[3], Shiva Kumar Goud N[3], Divya E[3], Sherisha Bhavani D[1], Sumalatha K[2]

[1]Associate Professor, Department of Pharmaceutical Chemistry, Bhaskar Pharmacy College, Hyderabad, India.
[2]Associate Professor, Department of Pharmacognosy, Bhaskar Pharmacy College, Hyderabad, India.
[3]Bhaskar Pharmacy College, Hyderabad, India.

ABSTRACT

Pergularia daemia (Forssk.) Chiov. of family Asclepidaceae commonly known as utaran which is used to cure cough, asthma and treating various diseases in traditional system of medicine. In this study, various phytochemicals were screened from *Pergularia daemia* leaves and physicochemical characteristics were analyzed. In addition to the leaf constants, the macroscopic and microscopic pharmacognostical characteristics were also measured. Physicochemical analysis of the powdered leaf drug was performed to assess its ash values, total ash value, acid soluble ash value and acid insoluble ash value, extractive value (alcohol and water soluble), and moisture content. Alkaloids, flavonoids, terpenoids, saponins, carbohydrates, amino acids, and flavonoids have been identified in preliminary phytochemical screenings.

KEY WORDS: *Pergularia Daemia*, Pharmacognostical Study, Physicochemical analysis, and Phytochemical Screening.

INTRODUCTION

A pharmacognosy profile studies natural products, the goal of which is to discover sources of natural drugs (plants, microorganisms, fungi, algae, animals) and products derived from their metabolic processes, which can be used for treating, preventing, and diagnosing diseases in humans and animals. The procedure for synthesizing, isolating, and identifying biologically active substances, as well as modifying them technologically and categorizing them according to their effects [1]. Herbal products manufactured in compliance with the Pharmacopoeial guidelines are widely used in a wide range of medical systems because the industry is well-organized. A number of universities and institutes have conducted extensive basic and clinical research using advanced methods on medicinal plants. [2]. Phytochemicals found in plants are responsible for most physiological effects in the body. Plant phytochemicals play an important role in maintaining and improving the health of living organisms. Phytochemicals have different added benefits when it comes to biochemical reactions that occur in the body. An antioxidant protects a biological system from oxidative stress. Aerobic respiration results in the generation of free radicals by macrophages, polymorphonulcear leukocytes, and peroxisomes. ROS and antioxidants are maintained in balance when antioxidants donate electrons to free radicals without becoming unstable themselves [3].

A variety of medicinal uses have been reported

Corresponding Author: - **Nagamani C** Email: manisunil212@gmail.com

A Prospective Observational Study on Prescribing Patterns of Restricted Antimicrobials and Determining Outcomes

[1]R. Srinidhi, [2]Mohd. Athar Hussain, [3]Simhadri Sugnaneswary, [4]G. Sushmitha, [5]A. V. Kishore Babu

[1,2,3]Doctor of Pharmacy Intern, [4] Asst. Professor and of college, [5]Professor and Head of Department
Department of pharmacy practice,
Bhaskar Pharmacy College, Bhaskar Nagar,
Yenkapally (V), Moinabad (M) Hyderabad, Telangana, India-500075.

Abstract-

Background:

Treatment with Antimicrobial agents appears to be so efficacious and rational that they are occasionally prescribed for dubious indications and for extended than required where the priority for adverse effects and development of resistance is hardly any. AMR could be a global problem. Eradication of AMR requires a big reduction within the use of antimicrobials. As a result, some antimicrobials are restricted and prescribed only under the supervision of a physician for which they are grouped under Restricted Antimicrobial Agents.

Objective:

This study illustrates the factors influencing the need for prescribing Restricted Antimicrobials and evaluating the patient outcomes. Restricted Antimicrobials are regularly classified under a 'traffic light system'. While this isn't a necessary need, one of these machines is diagnosed throughout many Australian healthcare centers and it's far usually taken into consideration to be an effective device for teaching prescribers approximately a local policy of restricted antimicrobials.

Methodology:

The study was conducted over a period of 6 months at territory hospital. A total of 114 patients were considered. This study was conducted on those patients who got admitted in general wards.

Results:

Study carried out in those subjects revealed that most of the cases were of CAI and had got admitted due to LRTI (18%) followed by surgery (17%) and the highly prescribed RA was found to be Meropenem (41%). Patients who got specific therapy got less no. of hospital stay. Samples were collected from subjects for culture tests before starting therapy and was found that most of the organisms detected to be KLEBSILLA (23.4%) and E. COLI (10.6%) and maximum no. Of organisms detected were found to be resistant to Ciprofloxacin (13.2%) and Levofloxacin (10.6%). Outcome showed that 89% of the patients got successfully treated and discharged.

Conclusion:

AMS can offer all healthcare professionals an intention to save the public from an inappropriate use of AMR and help in achieving positive outcomes in patients. In our study, we observed that patients receiving specific therapy benefited more than patients on empirical therapy and surgical prophylaxis. Through our study, we conclude that RA has greater impact in treating various infections and decreasing resistance.

Keywords: **Antimicrobials, Resistance, Restricted Antimicrobials, Global problem, Positive outcomes, Successful therapy.**

INTRODUCTION:

The factor that rubs out microscopic life forms or ceases their expansion [(1)]. Antimicrobial drug treatments may be sorted in step with the microscopic living entities that behave themselves mostly conversely, as an illustration, bacterial growth is destructed by antibiotics, and against fungal growth, antifungals are prescribed. They can also be graded according to their functioning. Improvements in antimicrobial technology have led to answers which could move past genuinely hindering microbial boom. Rather, positive forms of porous media were advanced to assassinate microorganisms [(2)].

To fight communicable disorders, antimicrobial drugs which might be powerful in controlling, eradicating, or getting rid of the boom of beasts of prey of microbes has been advanced. The highest of those antimicrobial drugs present in herbal merchandise in which they had been at first utilized by diverse creatures to shield against an attack of microbes [(3, 4)]. Had in fact been remote and marked, a lot of those "herbal" merchandise was in the end changed through humanity to propose extra or magnified action of antimicrobials [(3)]. The moves of a lot of those antimicrobial drugs are precise to precise kinds of infectious organisms even though others may also have an effect on vast tiers of microorganisms. The management of antimicrobial agents within the remedy and eradication of communicable disorders has aggravated an evolutional reaction amongst microorganisms through generating antimicrobial resistance [(5)]. The main causes of AMR are microbial, human, clinical usage, public perception and behavior, vaccination reluctance.

The execution of suitable formulary regulations of antimicrobial drugs is taken into consideration a center method of antimicrobial stewardship in Australian hospitals [(6)]. This Recommended list of Antimicrobial Restrictions presents steering to centers that might

PRINCIPAL
BHASKAR PHARMACY COLLEGE
Bhaskar Nagar, Yenkapally (V),
Moinabad (M), R.R. Dist.
Hyderabad-500 075. T.S.

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ORIGINAL ARTICLE **OPEN ACCESS**

Investigation of hypoglycemic, anticholesteremic, *in vivo* antioxidant and pancreatic beta cell protective effect of *Tecoma gaudichaudi DC* leaves in streptozotocin-induced diabetic rats

Kedar Kalyani Abhimanyu*[1], Chaudhari Sanjay Ravindra[2] and Rao Srinivasa Avanapu[3]
[1*]Department of pharmacognosy, P. E. Society's Modern College of Pharmacy, Nigdi, Pune Maharashtra - 411044 and Jawaharlal Nehru Technological University (JNTU), Hyderabad, Andra Pradesh, India 500072
[2]KJ's Educational Institute, Trinity College of Pharmacy, Pune 411 048
[3]Bhaskar Pharmacy College, Amdapur X Road, Moinabad, Ranga Reddy, Andhra Pradesh
*E.Mail ID: kk_pharma20@rediffmail .com

ABSTRACT
Bignonia Linn (Bignoniaceae) is a monotypic genus of woody climbers, native to North America and mostly grown for ornament in the tropics of the old world. The antidiabetic potential of core species of Bignoniaceae was carried out on some species of Tecoma genus such as Tecoma gaudichaudi DC. In present study, in-vivo antidiabetic potential of isolated fraction of ethyl acetate extract of Tecoma gaudichaudi DC has been investigated. The identification of triterpenoid and their related functional group in bioactive fraction was categorized by using HRMS and IR. Oral administration of ethyl acetate extract of Tecoma gaudichaudi DC at dose 250 mg/kg & 500mg/kg) significantly increase in the body weight, decrease in the blood glucose and total cholesterol (P<0.05) and restore function of SOD and CAT enzymes. Histologically EATG (250 & 500mg/kg) treated group shows no significant effect on pancreatic β- cells while fraction rich with Ursolic acid treated group shows increased cell size of pancreatic β- cells. Insulin treated group shows normal density of islets of β- cells along with few areas showing necropsy. These finding reveals that ethyl acetate extract of leaves of Tecoma gaudichaudi DC shows significant antihyperglycemic, anti-cholesterolemic, in-vivo antioxidant activity and improved the cell density of β-cells of islets of langerhans in diabetic rats.
Keywords: *Tecoma gaudichaudi DC, Streptozotocin; Antihyperglycemic; Anti-cholesterolemic; Antioxidant*

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INTRODUCTION

Diabetes mellitus is a metabolic disease, characterized by hyperglycemia and impaired metabolism of glucose and other energy-yielding fuels, such as lipids and proteins and is the result of a deficiency of insulin secretion or a resistance to insulin action, or both [1]. Diabetes constitutes a worldwide public health problem [2]and according to International Diabetes Federation 382 million people get affected by diabetes in 2013 and recent projections suggests that this prevalence is likely to increase in the next 20 years, affecting 592 million people (10.1%) in 2035. Diabetes mellitus type 1 and type 2 are caused by damage due to chronic inflammation of pancreatic β-cell island. It causes abnormal insulin release, effects insulin receptor and post receptor events and ends with liver, kidney, eye damage [3]. Various complications get arises during diabetes from these vascular complications are the leading cause of morbidity and mortality among patients with type 1 and type 2 diabetes mellitus. These vascular abnormalities result of a chronic hyperglycemia state, which leads to an increase in oxidative stress and inflammatory responses [4].Herbal medicines overcome various side effects of synthetic drugs therefore the study of hypoglycemic plants is then encouraged [5,6].Plant families which are confirmed to show hypoglycemic activity include: Leguminoseae, Lamiaceae, Lilliaceae, Cucurbitaceae, Asteraceae, Moraceae, Rosaceae, Euphorbiaceae, Araliaceae, Polygalaceae, Asclepidaceae, Meliaceae etc [7]. The effect of the medicinal plants may delay the diabetic complications and rectify the metabolic abnormalities. Now a day's more focus on to isolate bioactive compounds and it shows hypoglycemic activity [8].From all secondary metabolite's pentacyclic triterpenes, are an important group of it considered as lupenyl, ursanyl, betulenyl or oleanyl. They are presented in plant species as the form of aglycone's saponin triterpenoids [4-5]. Previous reports state that species of Bignoniaceae family show presence of promising active constituents such as tannins, flavonoids, triterpenes, alkaloids, carbohydrates, etc. [6].

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ORIGINAL ARTICLE **OPEN ACCESS**

Cytotoxic, antioxidant and phytochemical analysis of *Tecoma gaudichaudi* DC (Bignoniaceae)

Kedar Kalyani Abhimanyu[1*], Sneha Nawale[2], ChaudhariSanjay Ravindra[3], Rao Srinivasa Avanapu[4]
[*1]Pharmacognosy Department, P. E. Society's Modern College of Pharmacy, Nigdi, Pune- 411044, Maharashtra, Indiaand Jawaharlal Nehru Technological University (JNTU), Hyderabad, Andra Pradesh, India 500072
[2]Pharmacognosy Department, GokarajuRangaraju College of Pharmacy, Nizampet, Bachupally, Hyderabad, 500090 (Osmania University), India
[3]Kj's Educational Institute, Trinity College of Pharmacy, S. No. 25 & 27, A/P. Pisoli, BopdevGhat Road, Next to Yevlewadi, Pune-411 048
[4]Bhaskar Pharmacy College, Amdapur X Road, Moinabad, Ranga Reddy, Andhra Pradesh, India – 500072
Email : kk_pharma20@rediffmail .com

ABSTRACT
Bignonia Linn (Bignoniaceae) is a monotypic genus of woody climbers, native to North America and mostly grown for ornament in the tropics of the old world. In the present work, invitro cytotoxic (SRB) assay was carry out against five melanoma cell lines such as MCF 7, B16F10, B16F1, SK-MEL-2, MDA-MB-231 for determining the cytotoxic effects in cells in response to plant extracts. Initially Tecoma gaudichaudiDC were first sequentially extracted with pet ether, ethanol, ethyl acetate respectively by soxhlet extraction and subjected to phytochemical analysis. Preliminary phytochemical investigation of extracts of Tecoma gaudichaudi DC species was carried out by chemical test it reveals that plant contains triterpenoids, steroids, tannins, flavonoids. The ethyl acetate, ethanol, pet ether extract of Tecoma gaudichaudiDC along with Ursolic acid was not found effective on these five cancer cell lines at concentrations 10-80µg/ml by in-vitro cytototoxic assay.
Keywords*: Tecoma gaudichaudi dc, bignoniaceae, cytotoxic activity, melanoma cell lines.*

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INTRODUCTION

Bignonia Linn (Bignoniaceae) is a monotypic genus of woody climbers, native to North America and mostly grown for ornament in the tropics of the old world [1]. Bignoniaceae family was having 100 genera and more than 750 plant species observed in various tropical regions of India. Known numbers of this family are Bignonia, Tecoma, Catalpa, Tabebuia and Jacaranda. These are succulent herbs, shrubs, stem sometimes reduced to a rhizome or tuber. Numerous species of this family are observed as poisonous to leeches [2]. In Charak, Sushruta, the root, bark, stem and leaf of some species of Bignoniaceae family is useful for snake bite, the stem and wood for scorpion sting. Previous reports state that species of Bignoniaceae family show presence of promising active constituents such as tannins, flavonoids, triterpenes, alkaloids, carbohydrates, etc. [3]. The phytochemical analysis of various species of Bignoniaceae family was not studied so far hence; the following research deals with to carry an out phytochemical analysis of various extracts of leaves of *Tecoma gaudichaudi* DC. However, no previous biological activities have been reported for *Tecoma gaudichaudi* DC leaf powder except some ethnomedicinal claims were reported such as in Bangladesh whole plant of *Tecoma gaudichaudi* DC use of a remedy for diabetes and infertility problems [3]. The present study aims to evaluate the in vitro cytotoxic activity of ethanol, ethyl acetate, pet ether extract of *Tecoma gaudichaudi* DC against five cancer cell lines, such as human breast cancer cell line MDA-MB-231, MCF 7, mouse melanoma cell line B16F10 and B16F1, human melanoma cell line SK-MEL-2 and study also focus on analysis of various chemical moiety by preliminary phytochemical analysis. This study is considered to be the first report on the *Tecoma gaudichaudi* DC use against these cancer cell line.

BHASKAR PHARMACY COLLEGE HYDERABAD-75

PRINCIPAL
BHASKAR PHARMACY COLLEGE
Bhaskar Nagar, Yenkapally (V),
Moinabad (M), R.R. Dist.
Hyderabad-500 075. T.S.

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VIRTUAL REALITY IN HEALTHCARE EDUCATION: A REVIEW OF ITS DEVELOPMENT, APPLICATIONS AND CHALLENGES.

[1]Sultan Muhammad Salahudeen, [2]*Dr. A. Srinivasa Rao, [3]Dr. Muzibunnisa Abdul Hathi Begam, [4]Muhammad Hasan, [5]Dr. Mohammed Gousuddin

[1]Faculty of Pharmacy, Lincoln University College, Malaysia.

[2]Professor and Principal, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad, Telengana-500075. India.

[3]Adjunct Assoc.Prof. and Consultant of Foetal Medicine, MBRU of Health Sciences, Dubai, United Arab Emirates.

[4]Leeds School of Medicine, Leeds, United Kingdom.

[5]Faculty of Pharmacy, Lincoln University College, Malaysia.

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***Corresponding Author**
Dr. A. Srinivasa Rao
Professor and Principal,
Bhaskar Pharmacy College,
Yenkapally, Moinabad,
Hyderabad, Telengana-
500075. India.

ABSTRACT

Virtual Reality (VR) has made extensive inroads into both the consumer and professional sphere of life worldwide. In the education sector, virtual reality (VR) offers learners an immersive and interactive learning experience, enabling them to understand challenging concepts and ideas more efficiently. As VR has developed into a very useful technology, its overall practicality for use in education has tremendously increased over the years. However, due to the continuous and enormous evolution of the technology, the field of education struggles to stay informed of the latest advancements, changing affordances, and pedagogical applications. The usefulness of VR is multifaceted, and its application is ranging from the entertainment industry to the highly sophisticated space technology. The VR applications in healthcare is really promising and it is efficiently used to help children with autism, postnatal depression, and anxiety, and even to help patients with strokes recover. The application of VR to treat the patients with injury or illness are already into practice. However still there are unanswered questions that need to be addressed. The advances and technological innovations in healthcare sectors have occurred throughout history, continually advancing in the diagnosis and management of many diseases. These include the first vaccine for smallpox in the 18th

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EVALUATION OF CORONARY ARTERY DISEASE IN ASYMPTOMATIC TYPE-2 DIABETICS: THE ROLE OF EXERCISE STRESS TESTING

Kanchana N. Dussa[1]*, P.Prapulla[2], Manisha Madhukar Tonape[3], Muppaneni Srikanth[4], Somnath De[5], Jyothi Chatarla[6] and Sakshi Aole[7]

[1]Professor and Head, Department of Pharmacy Practice, Anwarul Uloom College of Pharmacy, Hyderabad, Telangana, India. *Corresponding Author Email: kanchu2512@gmail.com
[2]Associate Professor, Department of Pharmaceutical Chemistry, Mother Teresa College of Pharmacy, NFC Nagar, Ghatkesar, District:- Medchal, Telangana, India.
[3]Associate Professor & HOD , Department of Physiotherapy, School of Health Sciences, The Assam Kaziranga University, Koraikowa, Jorhat, Assam.
[4]Professor, Department of Pharmacognosy and Phytochemistry, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad, Telangana, India.
[5]Professor and HOD, Department of Pharmacology, St. Pauls College of Pharmacy , Turkayamjal (V), Abdullapurmet (M), Ranga Reddy District. , Hyderabad, Telangana, India.
[6]Associate Professor, Department of Pharmaceutics, Swami Vekananda Institute of Pharmaceutical Sciences/JNTUH, Vangapally, Yadadri , Bhuvangiri District, Telangana, India.
[7]PG Research Scholar, School of Pharmacy, LNCTU, Bhopal, LNCTU, Near J K. Hospital, Kolar Road, Bhopal, MadhyaPradesh, India.

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Abstract

Controlling micro vascular disease and coronary artery disease becomes significantly more challenging in those with type 2 diabetes. Examining the state of one's arteries on a regular basis is, thus, crucial. One of the most practical and inexpensive methods for monitoring changes in blood volume is the photoplethysmogram (PPG). In order to draw conclusions about the patient's health, doctors used one of the many applications of photoplethysmography (PPG), the second derivative photoplethysmogram (SDPPG). Instead of the SDPPG formal ageing index, also known as the SDPPG-AI, we shall utilise the SDPPG informal technique. When comparing the 23 patients with diabetes to the healthy people who served as controls, the researchers observed that the patients with diabetes had a higher index of vascular ageing.

Keywords: Type 2 Diabetes, Photoplethysmograph, SDPPG, Vascular Aging

I. INTRODUCTION

The metabolic condition known as diabetes mellitus, or simply diabetes, is characterised by insulin resistance and/or insufficient insulin synthesis. Diabetes is a common shorthand for diabetes mellitus. When diabetes goes untreated for a long time, it can cause tissue and blood vessel damage in vital organs like the kidneys, heart, muscles, and eyes. kinds 1 and 2 diabetes, or simply kinds 1 and 2, are the two most often diagnosed forms of the disease [1].

Younger people are more likely to be diagnosed with type 1 diabetes, which is related to genetics, whereas middle-aged adults are more likely to develop type 2 diabetes, which is related to lifestyle [2]. Younger persons are more likely to be diagnosed with type 1 diabetes. People tend to get diagnosed with type 1 diabetes at a younger age. The global health issue caused by the increasing incidence of type 2 diabetes is reaching epidemic proportions. Estimates for the prevalence of diabetes in the United States range from 7.4% in 1995 to 8.9% in 2025 [3]. Microvascular disease and the rapid worsening of coronary artery disease are both much more common in people

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FORMULATION DESIGN AND CHARACTERIZATION OF PITAVASTATIN CALCIUM LIPID BASED SOLID SELF-EMULSIFYING DELIVERY SYSTEM

Niranjan Panda* (Corresponding Author)
Professor and HOD, Department of Pharmaceutics, Anwarul Uloom College of Pharmacy
New Mallepally Hyderabad, Telangana, India--500 001,
Email niranjanpharma82@gmail.com

Vurathi Sreenivasulu
Professor, Department of Pharmaceutics.
St. Johns College of Pharmaceutical Sciences, Yerrakota, Yemmiganur, Kurnool (Dist.),
Andhra Pradesh, India, -518 360

Vakkalagadda Ravi Kumar
Professor, Department of Pharmaceutical Biotechnology, School of Pharmacy,
Guru Nanak Institutions Technical Campus, Ibrahimpatnam, Hyderabad, Telangana, India-501506

V.Kiran Kumar
Principal and HOD, Department of Pharmaceutical Analysis,
Mother Teresa College of Pharmacy, NFC Nagar, Ghatkesar, Medchal (D)
Hyderabad, Telangana, India-501301

L.Rajesh Patro
Professor cum Principal, Department of Pharmaceutics
Ranchi College of Pharmacy, Ute Toli,Tetri,Ranchi,Jharkhand, India-834010

P. Sobitha Rani
Associate Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Yenkapally, Moinabad, Hyderabad. Telangana, India-500075

Abstract: Oil and hydrophilic surfactants were used to create a solid self-emulsifying delivery system containing calcium Pitavastatin. Pitavastatin calcium has limited solubility and bioavailability, so it was important to increase these attributes by utilising the right formulation process and component. Oleic acid, Tween 20, and PEG 400 were used to create a self-emulsifying system based on early research. Pseudo-ternary phase diagrams were used to pinpoint the Microemulsion zone. For spray drying, a liquid system: adsorbent (Aerosil 200) at a 2:1 ratio was used. The system underwent testing for in vitro dissolution, emulsification time, and drug content percentage. Fourier transform infrared spectroscopy (FTIR), DSC, scanning electron microscopy (SEM), particle size, zeta potential, and XRD were among the additional analytical methods employed for characterization. The drug content detected in the

Innovative Research on Garcinia Kola Heckel Seed Extracts Phytochemicals and Related Enzymes Ability to Prevent Important Blood Glucose Levels

Darla Raju[1]*(Corresponding Author), Devender Kodati [2],Sandeep Kumar Galipelly [3], Pragati Baghel[4],Sachinkumar Dnyaneshwar Gunjal[5],T. Naga Aparna[6], Satyabrata Jena[7].

1) Associate Professor, Joginpally B R Pharmacy College, Bhaskar Nagar,Yenkapally, Moinabad Hyderabad, Telangana-500075. Email id: rajudarla@jbrpc.edu.in

2) Associate Professor and HOD,St. Peter's Institute of Pharmaceutical Sciences, Vidhyanagar,HanumakondaTelangana-506001

3) Assistant Professor,St.Peter's Institute of Pharmaceutical Sciences, Kakatiya University VidyaNagar,HanamkondaTelangana-506001

4) Associate Professor,Department of Pharmacognosy,Faculty of Pharmacy,Bharti Vishwavidhalaya, chandrakhuri, Durg, Chhattisgarh- 49122,

5) Department of Pharmaceutics, Amrutvahini College of pharmacy, Sangamner, Savitribai Phule Pune University.Maharashtra State,India. Pin-422605.

6) Associate professor,Department of Pharmaceutics,Sri Indu Institute of Pharmacy , Sheriguda, Ibrahimpatnam, Telangana, India 501510

7) Associate Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Bhaskar Nagar,Yenkapally, Moinabad,Hyderabad, Telangana-500075

Abstract— a member of the Guttiferae family of Angiosperms, garcinia kola is the term "bitter kola" is used in trade. Its relevance in folkloric medicine as a purgative, mastcatory, aphrodisiac, etc. is significant. The seed seeds are used in the therapy of a variety of illnesses, including diabetes. Diabetes mellitus is a metabolic illness with several underlying causes characterised by chronic hyperglycemia that can cause serious side effects such neuropathy, nephropathy, retinopathy, and foot ulcers. A screening for qualitative phytochemicals was done. The structure of the isolated chemical was clarified using Gas Chromatography-Mass Spectrophotometry and Fourier Transformed-Infra Red spectroscopy after column chromatographic analysis of the ethyl acetate extract. Under predetermined circumstances, pig pancrease and seed small intestine were used to extract pancreatic -amylase and intestinal glucosidase. The following substances were found: phenolics, flavonoids, cardiac glycosides, alkaloids, coumarins, and phlobatannins. The IC50 values for methanol, ethyl acetate, and n-Hexane preparations were used to block –amylase 0.78 mg/ml, 3.44 mg/ml, 4.89 In contrast, the concentrations of glucosidase were 2.67 mg/ml, 1.68 mg/ml, and 10.29 mg/ml, respectively. from an ethyl solution acetate, the substance ZAAK was obtained. Fourier ZAAK contains an ester and a carboxylic acid, according to transformed-infrared spectra. The ZAAK total ion chromatogram showed three main peaks that correspond to Zaak numbers 1, 2, and 3 are. ZAAK1, ZAAK2, and

A LEARNING EXAMINATION OF MICROALBUMINURIA DISEASE IS IN NON-HYPERTENSIVE AND NON-DIABETIC PATIENTS WITH RECENT ISCHEMIC STROKE

Damayanthi Dalu [1*](Corresponding Author), Somnath De[2], Pankaj Kumar[3], Isha Kapila[4],Ritika Kalia[5], Satyabrata Jena[6].

1) Professor and HOD, Department of Pharmacology, St Mary's College of Pharmacy, St.Francis Street, Secunderabad, Hyderabad, Telangana-500025

*Corresponding author: Email:damayanthidalu3@gmail.com

2) Professor and HOD, Department of Pharmacology,St.Pauls College of Pharmacy , Turkayamjal (V), Abdullapurmet (M), Ranga Reddy District. , Hyderabad, Telangana, India-501510.

3) Professor, Department of Pharmacology, Adesh Institute of Pharmacy and Biomedical sciences, Adesh University, NH-7, Barnala Road, Bathinda, Punjab-151001

4)Assistant professor,Department of Pharmaceutical Sciences, Chandigarh college of Pharmacy ,Punjab-140307.

5)Assistant professor,Department of Pharmaceutical Sciences,Chandigarh college of Pharmacy ,Punjab-140307.

6)Associate Professor, Department of Pharmaceutics,Bhaskar Pharmacy College, Bhaskar Nagar,Yenkapally, Moinabad ,Hyderabad, Telangana-500075

ABSTRACT: The work states that Microalbuminuria (MA) is an amount of urinary albumin that is higher than the standard value, but also lesser than the amount identified by a predictable measuring scale. It also shows that in non-diabetic patients, the amount of sugar level in the urine of the person increases. The increases of the sugar level make increase of the drowsiness and the stress of the individual. The insulin level of humans decreases. These diseases in hypertension are elaborated as early identification of damage in the kidney and an interpreter for last stage in the kidney disease and cardiovascular disease. Thus makes the increase of the values of the keratin amount of the patient. This results as the major factor in making the uneven function of the body in making the filtration of the liquid. The malfunction of the kidney in the internal function of the body makes increase of other organ's dysfunction.

Keywords: *Microalbuminuria, non-hypertensive, Non-diabetic, Heart diseases, Kidney diseases*

Design and Formulation optimization by Using Design of Experiment of Trilayered Sustained Release Tablets containing an Antihypertensive Drug

K.Vijayasantoshalakshmi [1,]Taru Vats[2], T. Naga Aparna[3],K.P.S.Praneetha[4], L. Rajesh Patro[5],Boi Basanta Kumar Reddy[6], Satyabrata Jena[7],Rama Prasad Padhy [8].

Assistant Professor, Department of Pharmaceutics, St.Johns college of Pharmaceutical Sciences,Yerrakota,Yemmiganur,Kurnool,Andhrapradesh,India.

Assistant Professor, Department of Pharmacy,IIMT College of Pharmacy, Plot No. 19 & 20, Knowledge Park -III Greater Noida, Uttar Pradesh.India-201306.

Associate professor,Department of Pharmaceutics,Sri Indu Institute of Pharmacy , Sheriguda, Ibrahimpatnam,Hyderabad,Telangana,India-501510

Assistant Professor, Department of Pharmaceutical Regulatory Affairs, Vikas Institute of Pharmaceutical Sciences, Rajahmundry,Andhrapradesh,India-533102

Professor cum Principal,Ranchi College of Pharmacy,Kute Toli, Tetri, Namkum, Ranchi, Jharkhand,India-834010

Professor, Department of Pharmaceutics, Danteswari college of Pharmacy, Borapadar, Raipur Road, Jagdalpur, Chhattisgarh,India -494221

Associate Professor,Department of Pharmaceutics,Bhaskar Pharmacy College, Yenkapally (V), Moinabad (M), Rangaredddy District, Hyderabad, Telangana, India-500075.

Professor cum Vice Principal,Danteswari College of Pharmacy,Borapadar, Raipur Road, Jagdalpur, Chhattisgarh, India-494221.

vijayasantoshalakshmi@gmail.com

ABSTRACT

The purpose of this effort is to design, produce, and test extended-release trilayer matrix tablets that contain Ramipril for the purpose of administering the medicine over a longer period of time. Direct compression method with Response surface technique for polymers that included HPMC K4M, HPMC K15M, and xanthan gum (low, intermediate, and high concentrations) were used to construct a total of twelve different formulations (RTF1–RTF12) for the active layer (middle layer) by utilising Design of experiment software. These formulations were named RTF1–RTF12. One formulation was selected on the basis of its physicochemical qualities and drug release, and it was further made into prolonged release trilayered matrix tablets by altering amounts of polymers using the direct compression method. These tablets were then put through an evaluation. Characterization of the best possible optimised formulation was performed for the FTIR studies. RTF8 was selected as the best