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On

Pharmacy for Global Health: Trends and Transformation

Hybrid Mode

25th October 2025

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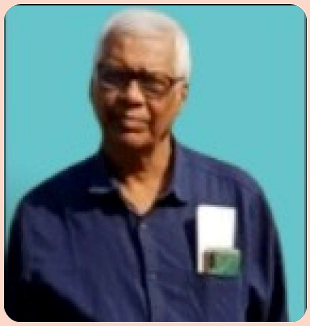
Directorate of Drug Control Administration Govt. of Bihar



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Radiant group of institutions is located at, Kishanganj Bihar. It was established under the aegis of A.M.S. Educational and Welfare Foundation in 2020 with a vision of becoming a center of excellence for professional education in all its realms. Radiant group offers Nursing, Para Medical, and Pharmacy courses. Kishanganj is in the North-East part of Bihar. It is on Delhi-Guwahati National Highway-31, The Town is well connected with all important cities and towns of Bihar and also with neighboring States by rail services. Kishanganj is only 400 km from Patna and 450 km from Kolkata and 80 Km from Bagdogra Airport, near Siliguri (Darjeeling). Radiant group of Institutions makes the world better through education, research, and innovations.

A group of noted academicians and eminent social activist's zeal has joined hands to establish Radiant group of institutions within a short period.

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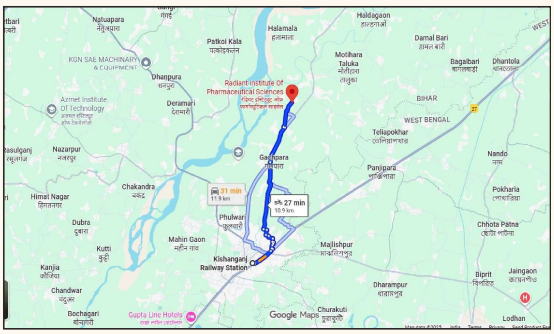

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Abstract-1

Topic: Green Synthesis Towards Sustainable Pharmaceutical Nanotechnology

Ankan Pradhan

Bengal College of Pharmaceutical Tchnology, Dubrajpur, Birbhum - 731123

Abstract: Green synthesis (GS) refers to the production of products that do not adversely affect the environment during the entire synthetic process. Green Chemistry (GC) or Sustainable Chemistry (SC) is a methodology focused on the synthesis of chemical compounds that minimises or eradicates the utilisation and generation of hazardous substances. Sustainability and environmental concerns are increasingly becoming the primary subjects in manufacturing and product development.The synthesis of nanoparticles using microbes and plants via green synthesis technology is biologically safe, economically viable, and environmentally sustainable...

Nanotechnology techniques such as liposomes and micelles ensure accurate and regulated release mechanisms, mitigating issues related to toxicity and biocompatibility.Green nanotechnology, adhering to the principles of green chemistry, emphasises the eco-friendly synthesis of nanoparticles utilising plant extracts as substitutes for traditional chemical methods. Nanotechnology-based medication delivery systems possess the capacity to revolutionise healthcare by offering personalised and eco-friendly therapy alternatives for diverse medical diseases. The implementation of GS practices in the synthesis approach can be affected by external factors such as the policy environment, business awareness, and stakeholder actions.The term associated with GS refers to a study that embodies a novel synthesis paradigm employing various green methodologies to enhance ecological viability, focussing on the creation of products or systems that utilise diminished resources and energy, substitute input materials (from non-toxic to toxic, renewable to non-renewable), minimise superfluous production, and transform output into input or recycling. This underscores the green chemistry principles affecting the life cycle of nano-products from conception to disposal.

Keywords: Green synthesis, Sustainability, Nanotechnology, biocompatibility, Green Chemistry

Abstract-2

Topic: Prediction and standardization of Dose of Ciprofloxacin in Case of Lung Targeted Delivery by PBPK Modelling

Pradip Chandra Gorain, Ahana Hazra, Mithun Bhowmick

Bengal College of Pharmaceutical Sciences and Research

Bidhannagar, Durgapur, West Bengal, 713212, India,

Corresponding Author: hazraahana00@gmail.com

Abstract: Ciprofloxacin is a widely used antibiotic which falls under second generation fluoroquinolone class. It is known for its ability in treating many bacterial infections. Food and Drug Administration (FDA) has approved Ciprofloxacin to treat various diseases and it is recommended as a second-line therapy for multidrug-resistant tuberculosis by World Health Organisation (WHO). The pharmacokinetic profiling incorporates the information on Absorption, distribution, metabolism, Excretion (ADME) and physicochemical properties of the drug molecule with physiology and biology of specific population for simulation of the drug concentration–time profile. Methods: In-silico model is designed by combining all collected physiological, biochemical and anatomical data into the open system pharmacology (PK-Sim) software. In this Study, at first Ciprofloxacin 500 mg oral dose and then 500 mg to 200 mg pulmonary dose is administered to the East Asian male adult human population and their population simulation is compared. Result: We found that, values of pharmacokinetic parameters of 500 mg oral dose with such as AUC (7132.04434 µmol*min/L), Cmax(53.75 µmol/L),tmax(0.70 h),half-life (5.36 h) are closed to the pharmacokinetic parameters of 210 mg pulmonary dose with values AUC (5454.85 µmol*min/L),Cmax(53.47µmol*L/1), tmax(0.05 h), half-life(5.36 h). Discussion: After the simulation it can be predicted that the 500 mg oral dose has almost similar pharmacokinetic parameter to 210 mg pulmonary dose of Ciprofloxacin.

Keywords: Ciprofloxacin, PBPK Modelling, PK-Sim Software, Pharmacokinetics, Oral dose, Pulmonary dose.

Abstract-3

Topic: Integrative Distribution of Free, Bound, and Esterified Phenolics in Crops (Wheat, Rice, Lentils)

Aritrika Sen, Dr.Ranbir Sahu

Department of Pharmaceutical Technology, University of North Bengal, Darjeeling 734013, West Bengal

Abstract: Phenolic compounds are important plant secondary metabolites with significant antioxidant properties, contributing to human health by neutralizing free radicals and reducing oxidative stress. These compounds exist in plants in three forms: free, bound, and esterified, each differing in bioavailability and functional activity. Understanding their distribution in staple crops is critical for evaluating nutritional quality and potential health benefits. This study investigates the distribution of free, bound, and esterified phenolics in wheat, rice, and lentils. Sequential extraction methods were employed to isolate each phenolic fraction, with bound phenolics obtained via alkaline hydrolysis and esterified phenolics via acid hydrolysis. Total phenolic content (TPC) for each fraction was determined using the Folin-Ciocalteu assay and expressed as mg gallic acid equivalents (GAE) per gram of dry weight. Statistical analysis was performed using one-way ANOVA ($p < 0.05$) to assess differences among crops and phenolic forms. Results indicated that wheat and rice predominantly contained bound phenolics, suggesting slower antioxidant release during digestion, while lentils exhibited higher levels of free phenolics, indicating more readily bioavailable antioxidants. Esterified phenolics were minor across all tested crops. These findings highlight the differential storage patterns of phenolics in cereals and legumes and underscore the importance of considering phenolic forms in dietary assessments. Knowledge of phenolic distribution can guide crop selection, food processing, and formulation of functional foods aimed at maximizing antioxidant intake and associated health benefits.

Keywords: Phenolic compounds; Free phenolics; Bound phenolics; Esterified phenolics; Wheat; Rice; Lentils

Abstract-4

Topic: Bioelectronic devices and biosensor technologies used in brain tumor management.

Abhishek Chowdhury, Ahana Hazra, Mithun Bhowmick

Bengal College of Pharmaceutical Sciences and Research

Bidhannagar, Durgapur, West Bengal, 713212, India

Email Id: abhishekchoudhoury2018@gmail.com

Abstract: Introduction: Brain tumors pose a major challenge due to their complex structure and the sensitivity of neural tissues. Conventional diagnostic and therapeutic methods often lack precision and minimally invasive efficiency. Emerging technologies such as biosensors and bioelectronics offer promising solutions by integrating biological recognition with electronic systems to improve diagnosis, monitoring, and therapy.

Methods: This review highlights advancements in bioelectronic devices and biosensor technologies used in brain tumor management. Devices like Tumor Treating Fields (TTFields) and Electrochemotherapy (ECT) apply electrical fields to disrupt tumor cell division and enhance chemotherapeutic efficacy. MicroRNA(miRNA) based and electrochemical aptamer-based biosensors provide high sensitivity and specificity in detecting tumor biomarkers. Furthermore, Focused Ultrasound (FUS) enables non-invasive, targeted drug delivery across the blood–brain barrier and facilitates localized tumor ablation.

Discussion and Conclusion: The integration of biosensors and bioelectronics enhances diagnostic precision, therapeutic control, and real-time monitoring. Despite these advantages, challenges such as mechanical and chemical mismatches between biological tissues and electronic materials limit long-term biocompatibility. Ongoing research into flexible, soft, and biocompatible materials may overcome these barriers.

Keywords: Biosensors, Bioelectronics, Brain Tumor, Focused Ultrasound (FUS), Tumor Treating Fields (TTFields), Electrochemotherapy (ECT).

Abstract-5

Topic: A Comprehensive Review on Transdermal Drug Delivery System

Mohammad Talha, Himalay De
Seacom Skills University, Kendradangal, Birbhum, WB, 731236
Email id: 123sktalha@gmail.com

Abstract: Transdermal medication delivery offers a creative approach to achieving systemic drug absorption at a controlled rate. Its benefits include reduced dose frequency, avoidance of first- pass metabolism by entering directly into the systemic circulation, suitability for elderly patients who struggle with oral medications. This system allows for self-administration with potentially fewer side effects. The success of transdermal drug delivery systems (TDDS) depends on the drug's ability to permeate the skin in sufficient quantities. This review covers the general aspects of TDDS, including drug absorption pathways, kinetics, and factors affecting skin permeation. Various types of transdermal patches and their components are
discussed, along with evaluation parameters to ensure quality and efficacy. Marketed transdermal patches and therapeutic applications are also explored. The review highlights the advantages and limitations of TDDS, including skin irritation and variable absorption rates. Advances in transdermal technology, such as microneedles and nanocarriers, a being investigated to enhance drug delivery. Characterization of transdermal patches involves time of onset and duration, assessing quality, size, adhesive properties, thickness, weight, moisture content, and uniformity. This review provides a comprehensive overview of transdermal medication delivery, including its benefits, disadvantages, mechanisms, and factors affecting skin permeation and types. Overall, TDDS offers a promising approach to managing various conditions, with ongoing research aimed at expanding its applications and efficacy.

KEYWORDS: Transdermal patch, Permeability, First-pass metabolism, Nanocarriers, Microneedles, Transdermal, Drug delivery.

Abstract-6

Topic: A Review On- Micro emulsion

Madhabi Chakraborty, Subir Paul, Himalay De
Seacom Skills University, Kendradangal, Birbhum, WB, 731236
Email id: paulsubir62@gmail.com

Abstract: Microemulsions are optically and macroscopically isotropic mixtures consisting of at least a hydrophilic component, a hydrophobic component and an amphiphilic agent. Compared to conventional emulsions, they are more stable, transparent and often require a co-surfactant. Their droplet diameter typically ranges between 10–140 nm. In recent years, microemulsion formulations have gained widespread acceptance as effective drug delivery systems for both hydrophilic and lipophilic drugs, owing to their excellent drug solubilizing capacity, long shelf life, enhanced bioavailability, ease of preparation, ultra-low surface tension and large interfacial area.
Microemulsions represent one of the most promising candidates for novel drug delivery systems, as they provide sustained and controlled release of therapeutic agents with simple preparation and administration. They are thermodynamically stable systems composed of oil, water and amphiphiles and have emerged as versatile carriers for ocular, percutaneous, topical, transdermal and parenteral drug delivery. Microemulsions can be easily distinguished from conventional emulsions by their low viscosity, high transparency and most importantly, their thermodynamic stability.

Keywords: Microemulsions, Amphiphile, Thermodynamic stability, Solubilization, Drug delivery.

Abstract-7

Topic: Bone grafts and biomaterials based nanotechnology inperiodontal tissue engineering and bone registration.

Aonkana Sengupta, Ahana Hazra, Mithun Bhowmick

Bengal College of Pharmaceutical Sciences and Research, Bidhannagar , Durgapur -713212, West Bengal , India

Email- aonkana2002@gmail.com

Abstract: Introduction-The term bone graft refers to components that are used to cure bone defects and that helps to enhance bone regeneration, particularly in periodontal diseases .Bone regeneration is a process that requires dynamic balance between the osteoblastic activity generating new bone. Nanotechnology revolutionized field by generating nanoparticles, which helps to overcome recent limitations in many strategies which includes cell differentiation, inadequate mechanical strength of biomaterials which are crucial for osteogenesis.

Objective: This review has the objective of reviewing , bone grafts act as a scaffold to promote the growth of new bone and the regeneration of periodontal tissue. Cell signalling, tissue architecture, and other biological interactions can be enhanced when biomaterials based on nanotechnology are implemented into periodontal tissue engineering.

Methods: The method of bone grafting in periodontal therapy is to replace missing periodontium and alveolar bone. Key grafting techniques include of: autografts, allografts , xenografts .

Conclusion: Large bone deformities are still difficult to restore in the orthopaedic area mainly because there aren't enough treatments that can meet all clinical requirements. Bone tissue engineering has been gaining a lot of attention recently. The application of nanotechnology to bone tissue engineering has become a viable method for creating biomaterials.

Keywords: Bone Grafts, Osteoblastic activity, Nanoparticles, Cell Signalling, Nanotechnology.

Abstract-8

Topic: Phytosome based drug delivery in implication for immunotheraphy sustainablility.

Arijit Patra, Ahana Hazra, Mithun Bhowmick

Bengal College of Pharmaceutical Sciences and Research, Bidhannagar, Durgapur- 713212, West Bengal, India

Email id: arijitpatra500@gmail.com

Abstract: The term “Phyto” means plant and “Some” means cell-like structure. These are sophisticated herbal formulations. Now a days, medicinal plants and the phytochemicals they contain can be used to treat a wide range of ailments. However, poor absorption and selectivity can limit their practical application. The introduction and utilization of phytosome technology are the main topics of the first section of the review. Phytosomes are complex molecular structures made of phospholipids and plant extracts. Information on several techniques for screening different phytosome qualities may be found under the technologies used for phytosome characterization and evaluation. The advantages of phytosomes over liposomal and conventional drug delivery techniques are also discussed. Finally, we summarize the promising clinical and experimental findings on the use of phytosomes. The study's result motivates the researchers to bring their findings from the lab to the market in order to advance the development of these goods.

Objective: To assess how phytosome technology can improve the efficacy, safety, and sustainability of immunotherapy by optimizing delivery of bioactive compounds, biologicals, or herbal extracts.

Method: Literature review of recent preclinical and clinical studies focusing on phytosome-mediated delivery systems designed for immunotherapy applications.

Conclusion: Phytosome-based drug delivery systems significantly enhance the bioavailability and stability of phytochemicals and biological agents involved in immunotherapy.

Keywords: Herbal, phytochemicals, absorption, complex, phytosome.

Abstract-9

Topic: Prediction and standardization of Dose of Ciprofloxacin in Case of Lung Targeted Delivery by PBPK Modelling

Pradip Chandra Gorain, Ahana Hazra, Mithun Bhowmick

Bengal College of Pharmaceutical Sciences and Research, Bidhannagar, Durgapur, West Bengal, 713212, India

Email Id: pradipchandragorainrx@gmail.com

Abstract: Introduction: Ciprofloxacin is a widely used antibiotic which falls under second generation fluoroquinolone class. It is known for its ability in treating many bacterial infections. Food and Drug Administration (FDA) has approved Ciprofloxacin to treat various diseases and it is recommended as a second-line therapy for multidrug-resistant tuberculosis by World Health Organisation (WHO). The pharmacokinetic profiling incorporates the information on Absorption, distribution, metabolism, Excretion (ADME) and physicochemical properties of the drug molecule with physiology and biology of specific population for simulation of the drug concentration–time profile. Methods: In-silico model is designed by combining all collected physiological, biochemical and anatomical data into the open system pharmacology (PK-Sim) software. In this Study, at first Ciprofloxacin 500 mg oral dose and then 500 mg to 200 mg pulmonary dose is administered to the East Asian male adult human population and
their population simulation is compared. Result: We found that, values of pharmacokinetic parameters of 500 mg oral dose with such as AUC (7132.04434 µmol*min/L), Cmax(53.75 µmol/L),tmax(0.70 h),half-life (5.36 h) are closed to the pharmacokinetic parameters of 210 mg pulmonary dose with values AUC (5454.85 µmol*min/L),Cmax(53.47µmol*L/1), tmax(0.05 h), half-life(5.36 h). Discussion: After the simulation it can be predicted that the 500 mg oral dose has almost similar pharmacokinetic parameter to 210 mg pulmonary dose of Ciprofloxacin.

Keywords: Ciprofloxacin, PBPK Modelling, PK-Sim Software, Pharmacokinetics, Oral dose, Pulmonary dose.

Abstract-10

Topic: Diabetes-A Global Dreadful Health Disease

Pradip Nandi*[1], Mr. Shambo Panda[2], Mr. Basudev Das[3], Mr. Atanu Dutta[4]

(1,2)Department Of Quality Assurance, Bharat Technology, Uluberia, Howrah, West Bengal-711316, India

(3,4)Department of R&d, Albert David Limited, Kolkata, West Bengal-700050, India

Email: pn9732@gmail.com, Mobile No. : 9732298051

Abstract: Nowadays, diabetes has become a common disease to the mankind from young to old persons. And it is a dreadful disease. Diabetes can be classified into two categories such as type 1 diabetes and type 2 diabetes. The growth of diabetic patients is increasing day by day due to various causes such as bacterial or viral infection, toxic or chemical contents mixed with food, autoimmune reaction, obesity, bad diet, change in lifestyle, environmental pollution, eating habits, increased level of sugar in the blood, etc. Diagnosis of diabetes is very essential to save the human life from diabetes. The data analytics is a process of examining and identifying the hidden patterns from a large amount of data to draw conclusions. There are chemical and biochemical agent that helps in controlling diabetes but there is no permanent remedy available that helps to get removed completely from this disorder. Substances and extracts isolated from different natural resources, especially plants have always been a rich arsenal for controlling and treating the diabetes problem. The most common and effective antidiabetic medicinal plants are Aloe vera, Mangifera indica, Allium sativum, Cinnamon, etc. So, various types of herbal drug and poly herbal formulations traditionally present which can be used to treat diabetes.

Keywords: dreadful disease, herbal drug, traditional medicine

Abstract-11

Topic: Pharmacists as Pioneers in Drug Discovery: Integrating Natural Products with Novel 6,8-Difluoroindolizine-Based Anti-Tubercular Agents

Anjana Gurung, Kaustav Dhara *

Medhavi Skills University, School of Pharmacy Topakhani, Lower Chisopani, Singtam Bazar, Pakyong- 737134, Sikkim, India

Tel:7478642810 and 6290241627

E-mail: anjana.25@msu.edu.in and kaustav.d@msu.edu.in

Abstract: Pharmacists as Pioneers in Drug Discovery: Integrating Natural Products with Novel The evolving landscape of drug discovery necessitates a framework that effectively bridges traditional medicinal knowledge with advanced scientific techniques, a role ideally suited for pharmacists. Tuberculosis (TB) remains a major global health challenge, with the rise of multi-drug resistant (MDR) and extensively drug-resistant (XDR) strains necessitating new therapeutic strategies. This research addresses the gap in systematically applying modern methods to natural product scaffolds for developing new therapeutic agents, specifically focusing on the urgent need for novel anti-tubercular (anti-TB) candidates, as no indolizine- based anti-TB drugs have yet entered preclinical trials. The present study focuses on the design, synthesis, and biological evaluation of 6,8-difluoroindolizine derivatives as potential anti-tubercular agents inspired by natural product scaffolds. In this study compound 4h, 4b and 4o emerged as promising anti tubercular agent against Mycobacterium tuberculosis H37Rv with MIC 99 values of 2.61µg/mL, 4.67 µg/mL, and 5.02 µg/mL respectively.

Keywords: Pharmacists, Tuberculosis, Drug Design, Natural Products, Indolizine, Anti-tubercular.

Abstract-12

Topic: Role of prebiotic in cancer management

Pem Diki Sherpa, Jugal Sutradhar

Department of Pharmaceutical Technology, University of North Bengal, Raja Rammohunpur,

Dist.- Darjeeling, West Bengal, India, Pin-734013

Email: pemdikisherpa70@gmail.com

Abstract: In nutritional sciences there is much interest in dietary modulation of the human gut. The Gastrointestinal tract, particularly the colon, is very heavily populated with bacteria. Most bacteria are benign; however, certain gut species are pathogenic and may be involved in the onset of acute and chronic disorders. Bifidobacteria and lactobacilli are thought to be beneficial and are common targets for dietary intervention. Prebiotic is a non-viable food ingredient selectively metabolized by beneficial intestinal bacteria. Dietary modulation of the gut Microflora by prebiotics is designed to improve health by stimulating numbers and/or activities of the bifidobacteria and lactobacilli. Having an 'optimal' gut microflora can increase resistance to pathogenic bacteria, lower blood ammonia, increase stimulation of the immune response and reduce the risk of cancer. This chapter examines how prebiotics are being applied to the improvement of human health and reviews the scientific evidence behind their use. Prebiotic is a relatively neglected area in cancer research, despite evidence suggesting that it plays a key role in suppressing tumour growth and improving immune function. Including prebiotic in the diet has been shown to strengthen the immune system and can better slow down and prevent the growth of tumours. It indicate that prebiotics can contribute to the sustenance of healthy microbiome, which in turns play an important role in increasing the effectiveness and reducing the side effect of cancer treatment.

Conclusion—The present review article Highlight the mechanism by which prebiotic like Inulin, fructo-oligosaccharides, beta glucan, Pectin, Xylo-Oligosaccharide function. Furthermore the beneficial effect of incorporating prebiotics during the cancer therapy to improve gut health and prevent the damage caused to patient due to chemotherapy has also been elaborated..

Keywords: Medicinal plant, green synthesis, zinc nanoparticles, antibacterial activity.

Abstract-13

Topic: Medicinal plant, green synthesis, zinc nanoparticles, antibacterial activity.

Krishna Gopal Mondal, Ranbir Sahu

Department of Pharmaceutical Technology, University of North Bengal, Darjeeling 734013,West Bengal

Abstract: Nanotechnology has gained immense importance in the field of medicine, pharmaceuticals, and biotechnology due to its potential to create materials with novel properties. However, traditional physical and chemical methods of nanoparticle synthesis often produce hazardous by-products and require high energy input. Green synthesis using plant extracts has emerged as a sustainable and eco-friendly alternative, eliminating the need for toxic reagents. The presence of diverse phytochemicals such as flavonoids, terpenoids, tannins, and phenolic compounds enables plants to act as natural reducing and stabilizing agents. In this study, nanoparticles were synthesized using aqueous extracts of medicinal plants through a simple and environmentally benign process. The formation of nanoparticles was indicated by a distinct color change and further confirmed through characterization techniques including UV–Visible spectroscopy, Fourier-transform infrared spectroscopy (FTIR), X-ray diffraction (XRD), and scanning electron microscopy (SEM). The nanoparticles exhibited uniform morphology, small particle size, and high stability. They also showed significant antimicrobial activity against both Gram-positive and Gram-negative bacteria, demonstrating their potential as bioactive agents. The strong interaction between metal ions and plant biomolecules was responsible for efficient nanoparticle formation and enhanced biological activity. The results confirm that plant-mediated synthesis offers a promising, cost-effective, and sustainable method for producing biocompatible nanoparticles with wide applications in medicine, pharmaceuticals, and environmental science. This green route effectively bridges the gap between traditional herbal knowledge and advanced nanotechnology for future therapeutic innovations.

Keywords: Green synthesis, plant extract, nanoparticles, phytochemicals, antimicrobial activity, nanomedicine

Abstract-14

Topic: Grafting of acrylamide onto polysaccharide obtained from Taro (Colocasia esculenta) stolon: synthesis, characterization and application in sustained release tablet formulation

Prajna Gupta, Gouranga Nandi

Pharmaceutical Technology, University of North Bengal

Raja Rammohunpur, Darjeeling, West Bengal

Email: prajnadiya98@gmail.com

Abstract: Taro stolon is an edible part of plant Taro (Colocasia esculenta), popular in India and Bangladesh. Mucilage was extracted by decoction method and polysaccharide was precipitated by using acetone. Phytochemical screenings were done to check the presence of phytoconstituents. Grafting is a technique where branching of a natural polysaccharide occurs and the attached vinyl groups increase the hydrophobicity of the backbone carbohydrate polymer. In this study, we have grafted polyacrylamide on the taro stolon mucilage powder (TSP) using ceric ammonium nitrate (CAN) as reaction initiator under microwave irradiation. Seventeen different batches were grafted where the variables were amount of monomer (acrylamide), amount of CAN, microwave radiation time. Effect of these variables on grafting percentage, grafting efficiency and percentage conversion were determined. Several characterizations like FTIR, NMR, TGA, DSC, XRD, SEM, swelling study were done for the native and grafted TSP. Six batches of diclofenac sodium tablets were prepared with the polymer of six batches having different grafting percentage. Tablets were prepared by wet granulation technique. Micromeritic properties of granules were observed. Weight uniformity, content uniformity, hardness, friability of the tablets were evaluated. Effect of grafting percentage on release profile of tablets was observed from in-vitro dissolution study (upto 10 hour). It was concluded that grafted polymer was successfully applied as sustained release polymer and sustain manner was increased with increased grafting percentage.

Keywords: Taro stolon mucilage powder (TSP), grafting, sustained release tablet.

Abstract-15

Topic: Pharmacists as Pioneers in Drug Discovery: Integrating Natural Products with Novel 6,8-Difluoroindolizine-Based Anti-Tubercular Agents.

Anjana Gurung, Kaustav Dhara

Medhavi Skills University, School of Pharmacy Topakhani, Lower Chisopani, Singtam Bazar, Pakyong- 737134, Sikkim, India

Tel:7478642810 and 6290241627

E-mail: anjana.25@msu.edu.in and kaustav.d@msu.edu.in

Abstract: The evolving landscape of drug discovery necessitates a framework that effectively bridges traditional medicinal knowledge with advanced scientific techniques, a role ideally suited for pharmacists. Tuberculosis (TB) remains a major global health challenge, with the rise of multi-drug resistant (MDR) and extensively drug-resistant (XDR) strains necessitating new therapeutic strategies. This research addresses the gap in systematically applying modern methods to natural product scaffolds for developing new therapeutic agents, specifically focusing on the urgent need for novel anti-tubercular (anti-TB) candidates, as no indolizine based anti-TB drugs have yet entered preclinical trials. The present study focuses on the design, synthesis, and biological evaluation of 6,8-difluoroindolizine derivatives as potential anti-tubercular agents inspired by natural product scaffolds. In this study compound 4h, 4b and 4o emerged as promising anti tubercular agent against Mycobacterium tuberculosis H37Rv with MIC 99 values of 2.61µg/mL, 4.67 µg/mL, and 5.02 µg/mL respectively.

Keywords: Pharmacists, Tuberculosis, Drug Design, Natural Products, Indolizine, Anti-tubercular.

Abstract-16

Topic: Phytochemical and Pharmacological Evaluation of Mangrove Plants in the Sundarbans with a Special Emphasis on Wound Healing Properties via Hydrogel Formulations in Diabetic Rats

Shubhadeep Mondal, Subhankar Saha, Jaita Sarkar, Subhajit Maity, Tulika Ghosh, Ketousetuo Koutsu

Department of Pharmaceutical Technology, Jadavpur University, Kolkata, West Bengal, India

Abstract: Mangrove plants of the Sundarbans, the world's largest deltaic mangrove ecosystem, represent an untapped reservoir of bioactive phytochemicals with immense pharmacological potential. The present study investigates the phytochemical composition and wound-healing efficacy of selected mangrove species, emphasizing the development of hydrogel formulations for diabetic wound management. Phytochemical screening and chromatographic analyses revealed the presence of diverse secondary metabolites (flavonoids, alkaloids, tannins, terpenoids, phenols, saponins, and steroids), particularly abundant in Heliotropium curassavicum, Lumnitzera racemosa, Avicennia officinalis, Ceriops decandra, and Bruguiera parviflora. In-vitro assays confirmed potent antioxidant and antimicrobial activities, while in-vivo studies using alloxan- and streptozotocin-induced diabetic rat models demonstrated accelerated wound contraction, enhanced epithelialization, and increased collagen deposition in animals treated with mangrove-extract-loaded hydrogels compared to diabetic controls. Hydrogels prepared with biocompatible bases such as natrosol and carbopol exhibited optimal pH, viscosity, and moisture-retention properties and were found to be non-toxic and non-irritant in safety and biocompatibility assessments. Mechanistic insights indicated that mangrove-derived phytoconstituents modulate oxidative stress, inflammatory responses, and growth factor expression to promote tissue regeneration under diabetic conditions. The findings substantiate the therapeutic promise of Sundarbans mangroves in diabetic wound care and support their translational potential for developing safe, effective, and eco-sustainable phytopharmaceutical hydrogel formulations.

Keywords: Sundarbans mangroves, diabetic wound healing, hydrogel formulation, tissue regeneration, pharmacological evaluation.

Abstract-17

Topic: A Systemic review on biosensor and bioelectronics in the treatment of brain tumor.

Abhishek Chowdhury, Ahana Hazra, Mithun Bhowmick

Bengal College of Pharmaceutical Sciences and Research, Bidhannagar, Durgapur, West Bengal, 713212, India

Email Id: abhishekchoudhoury2018@gmail.com

Abstract: Brain tumors pose a major challenge due to their complex structure and the sensitivity of neural tissues. Conventional diagnostic and therapeutic methods often lack precision and minimally invasive efficiency. Emerging technologies such as biosensors and bioelectronics offer promising solutions by integrating biological recognition with electronic systems to improve diagnosis, monitoring, and therapy.

Methods: This review highlights advancements in bioelectronic devices and biosensor technologies used in brain tumor management. Devices like Tumor Treating Fields (TTFields) and Electrochemotherapy (ECT) apply electrical fields to disrupt tumor cell division and enhance chemotherapeutic efficacy. MicroRNA(miRNA) based and electrochemical aptamer-based biosensors provide high sensitivity and specificity in detecting tumor biomarkers. Furthermore, Focused Ultrasound (FUS) enables non-invasive, targeted drug delivery across the blood–brain barrier and facilitates localized tumor ablation.

Discussion and Conclusion: The integration of biosensors and bioelectronics enhances diagnostic precision, therapeutic control, and real-time monitoring. Despite these advantages, challenges such as mechanical and chemical mismatches between biological tissues and electronic materials limit long-term biocompatibility. Ongoing research into flexible, soft, and biocompatible materials may overcome these barriers.

Keywords: Biosensors, Bioelectronics, Brain Tumor, Focused Ultrasound (FUS), Tumor Treating Fields (TTFields), Electrochemotherapy (ECT)

Abstract-18

Topic: Antioxidant and Anticoagulant Properties of Pineapple Extract.

Sipra Banerjee, Dhrubo Jyoti Sen, Sudip Kumar Mandal, Beduin Mohanty

Department of Pharmaceutical Technology, Brainware University

School of Pharmacy, Techno India University

Dr. B.C Roy College of Pharmacy and Allied Health Sciences

Corresponding author- ssb.pt@brainwareuniversity.ac.in

Mob-9903076438

Abstract: Introduction- Pineapple (Ananas comosus) is a tropical fruit rich in phytoconstituents that exhibit diverse pharmacological properties. The present study aims to evaluate the antioxidant and anticoagulant activities of pineapple extract and to identify the chemical groups responsible for these effects.

Methods: The antioxidant potential of the pineapple extract was analyzed using the free radical scavenging method, and the concentration required to inhibit 50 percent of free radicals (IC_{50}) was determined. The anticoagulant activity was assessed through in vitro experimental methods. Additionally, Fourier Transform Infrared spectroscopy was employed to identify the functional groups contributing to the biological activities of the extract.

Results: The pineapple extract demonstrated considerable antioxidant activity with an IC_{50} value of 41.67 µg/mL, indicating strong free radical inhibition. Fourier Transform Infrared analysis revealed the presence of functional groups such as hydroxyl, amine, carbonyl, aldehyde, carboxylic acid, ketone, aromatic benzene ring, and aliphatic hydrocarbon chains, which are commonly associated with antioxidant activity.

Discussion: The presence of these active functional groups supports the potent antioxidant and anticoagulant effects of pineapple extract. The findings suggest that the extract may serve as a natural source of therapeutic agents useful in managing oxidative stress and coagulation-related disorders.

Keywords: Pineapple extract, antioxidant capacity, IC_{50} value,

Abstract-19

Topic: Formulation and Evaluation of a Topical Herbal Ointment Using Psidium guajava Leaf Extract.

Anshika Yadav, Jannat Ul Firdaus

School of Pharmacy, Sharda University, Greater Noida 201310

Abstract: Introduction: The leaves of Psidium guajava (guava) are rich in bioactive phytochemicals such as polysaccharides, flavonoids, and phenolic acids, which provide remarkable anti-inflammatory and antioxidant activities. This study aims to formulate and scientifically evaluate a stable herbal ointment from P. guajava leaf extract for topical application.

Methodology: The guava leaves were processed to obtain a crude ethanol extract, followed by phytochemical screening to confirm the presence of key therapeutic compounds. The extract was uniformly incorporated into a semisolid base prepared with standard pharmaceutical excipients (petroleum jelly, lanolin, etc.) using the levigation method, forming the final herbal ointment.

Results: The formulated ointment evaluation, demonstrating excellent organoleptic and physicochemical properties. It was observed to be homogenous and smooth, with good spreadability and a skin-appropriate pH value (range 5.5–6.5), ensuring good patient compliance. Initial in-vitro evaluations further confirmed the ointment's beneficial potential for treating minor skin conditions due to its established anti-inflammatory and antioxidant activities.

Discussion/Conclusion: The results validate that the developed P. guajava leaf ointment is a safe, cost-effective, and natural alternative considered as a first choice in minor topical infection and inflammation. The formulation successfully translates traditional knowledge into a quality-controlled product, supporting the plant's potential for utilization in dermatological care.

Keywords: Herbal Ointment, Psidium guajava Leaf, Polysaccharides, Anti-inflammatory, Antioxidant, Topical.

Abstract-20

EVALUATION OF HEPATOPROTECTIVE ACTIVITIES OF IRIS ENATA THUNB. AGAINST CCL4-INDUCED HEPATOTOXICITY IN WISTAR RAT

Sufia Syed (Email id)sufia.syed@syneoshealth.com

Teerthaker Mahaveer University, Pharmacy Department, Moradabad, Uttar Pradesh

Dr. Perwaiz Alam (Email id) perwaizalam786@gmail.com

Radiant College of Pharmacy, Kisanganj, Bihar

Shobhit Mishra (Email id) shobhitpharmacist @gmail.com

Amity Institute of Pharmacy, Amity University, Sector-125, Noida-201313, Uttar Pradesh, India

Abstract: Liver disorders remain a major global health concern, and conventional therapeutic agents often exhibit limited efficacy and adverse effects. *Iris ensata* Thunb., a rhizomatous perennial plant traditionally used for liver ailments, was investigated for its antioxidant and hepatoprotective potential against carbon tetrachloride (CCl_4)–induced hepatotoxicity in Wistar albino rats.

Thirty rats were divided into five groups (n = 6). Group I served as the normal control; Group II received CCl_4 (1.25 mL/kg, 1:1 with olive oil) as toxic control; Group III received Silymarin (100 mg/kg); and Groups IV and V received ethanolic extract of *Iris ensata* roots at doses of 200 mg/kg and 400 mg/kg, respectively, for 14 days. Hepatotoxicity was induced on day 14 by CCl_4administration.

Pretreatment with *Iris ensata* extract significantly reduced serum hepatic enzyme levels (SGOT, SGPT, ALP), bilirubin, and triglycerides compared to the toxic control group, showing comparable efficacy to Silymarin. Antioxidant assays (DPPH, H_2O_2, and ABTS radical scavenging, total phenolic and flavonoid content) confirmed potent free-radical scavenging activity.

These findings indicate that the ethanolic extract of *Iris ensata* roots possesses significant antioxidant and hepatoprotective properties, supporting its traditional use in liver disorder management.

Keywords: *Iris ensata*, hepatoprotection, antioxidant activity, CCl_4-induced toxicity, Silymarin.

Abstract-21

"PHARMACY GLOBAL HEALTH: TRENDS & TRANSFORMATION (SCIENTIFIC & TECHNOLOGICAL TRANSFORMATION)"

Anurag, Kishan Singh, Shabnam Ain, Qurratul Ain, Babita Kumar & Ajeet
Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email:anuragguptag1001@gmail.com, 9310247238

ABSTRACT

Introduction: Pharmacy is transforming on a grand scale, becoming the driving force behind world health. It's not just about dispensing prescriptions anymore prescriptions, but about sparking innovation and giving every single person, everywhere, access to better health. Pharmacists are merging new technology, biotech innovations, and a genuine interest in what patients need most. They're moving from the back of the store to the front, bridging science breakthroughs with humans' fundamental, human desire to be nurtured and healed.

Methods: Synthesizing qualitative recent global pharmacy trends was carried out with a focus on artificial intelligence applications, biopharmaceutical science, and digital health integration.

Sources used included recent research studies, policy reports, and international health programs.

Results: Findings suggest far-reaching changes such as AI-based drug discovery, telepharmacy growth, and precision medicine innovation. Digital technologies are enabling rational use of drugs, access is being improved, and global health inequities are being alleviated. Convergence of academia-industry-policy has accelerated innovation in low-cost therapeutics.

Discussion: The global profession of pharmacy is shifting toward a more technologically advanced and more just system. Pharmacists become broader in preventive disease, health education, and public health guiding more. This transformation puts pharmacy as a critical pillar in the achievement of sustainable global health results.

Keywords: Global health, Artificial intelligence, Pharmacy innovation, Drug discovery, Pharmacist role, Health education.

Abstract-22

PHARMACY GLOBAL HEALTH: TRENDS & TRANSFORMATION (SOCIO-ECONOMIC & POLICY TRANSFORMATION)

Kishan Singh, Anurag, Shabnam Ain, Qurratul Ain, Babita Kumar & Ajeet
Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email: kishansingh972031@gmail.com, 9720315862

ABSTRACT

Introduction: "Pharmacy of Global Health: Trends and Transformation" discusses how determinants of socioeconomic factors and health policy shape the position of pharmacy in realizing universal health coverage. The profession is a vital link today between healthcare innovation and public service.

Methods: A survey of existing pharmacy policies, community pharmacy models, and international health programs was conducted to determine future trends that will shape access and cost of medicines.

Results: There are indications that greater global emphasis is on local drug production, control of generic medicine, and private-public partnerships. Better regulation of drugs and open supply chains have improved the safety of drugs. The crisis has also highlighted the importance of pharmacists being prepared for crisis moments.

Discussion: Pharmacy growth is extending beyond the province of science to equity, ethics, and social accountability. Policy-making and community engagement are redefining worldwide outreach. While health systems evolve, they have a pivotal function in building sustainable, strong, and equitable health infrastructures in nations.

Keywords: Global health, Socio-economic determinants, Generic medicine, Drug manufacturing, pharmacy policy, Drug safety.education.

Abstract-23

Pharmacy Global Health: Trends & Transformation (Environmental and Sustainable Perspective)

Jitendra Kumar, Shabnam Ain, Qurratul Ain, Babita Kumar & Ajeet

Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: jitendrakumar01608@gmail.com, 9871923991

ABSTRACT

Introduction: The topic "Pharmacy of Global Health: Trends and Transformation" highlights the importance of how environmental health are slowly becoming an internal part of the practice of pharmacy. Pharmacy has a many role to play nowadays—increasing global health and to make minimal impact on environment from drugs

Methods: A bibliometric analysis and review of new publications and worldwide initiatives were undertaken to explore sustainable drug practice, green pharmaceutical production, and waste management practices that affect public and environmental health.

Results: The research reveals a new world trend of green drug development, biodegradable packaging, and environmentally sustainable drug residue disposal. Public-private partnership modalities among governments, industries, and institutions of higher education have enabled green innovations to happen at a faster rate. Pharmacists are increasingly being included in environmental consciousness, rational drug use, and safe medicine life cycle.

Discussion: Sustainability is redefining pharmacy as a health profession to one becoming the custodian of planetary health across the world. Incorporation of environmental stewardship in pharmacy practice ensures global health advancement with synergy with ecology. Pharmacy's future is on human health because we have to protect the environment.

Keywords: Sustainable Pharmacy, Global Health, Green Pharmaceuticals, Eco-friendly Practices, Health Equity, Planetary Health.

Abstract-24

"ROLE OF PHARMACISTS IN EARLY DETECTION AND MANAGEMENT OF ALZHEIMER'S DISEASE IN PRIMARY CARE SETTINGS"

Kartikay, Shabnam Ain, Qurratul Ain, Manu Kaushik, Ajeet & Babita Kumar

Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: kartikaysharma4115@gmail.com, 7065364115

ABSTRACT

Introduction: Alzheimer's disease (AD) is a progressive neurodegenerative disease posing increasing difficulties to healthcare systems throughout the world especially as populations grow older. Detecting the disease early and managing the condition in a timely manner are necessary for managing the progressive disease and improving the quality of life for patients. The aim of this study is to explore the pharmacist's role in early detection and management of Alzheimer's disease in primary care practice.

Methods: The authors employed a narrative review methodology which emphasized recent literature from 2015 to 2025 that included clinical practice guidelines, public health reports and peer-reviewed literature. Important themes were examined related to pharmacist cognitive screening, medication therapy management and inter professional collaboration to improve care for individuals with Alzheimer disease.

Results: Research shows that pharmacists play an important role in the early identification of cognitive decline by utilizing screening tools such as the Mini Cog and MMSE conducting timely medication reviews to assess for drug induced cognitive impairment and providing support for individuals and families. There are several barriers to widespread implementation which includes limited education, time limitations and lack of reimbursement.

Discussion: Inclusion of pharmacists as part of a primary care setting to manage Alzheimer's disease will enhance early recognition of dementia, medication safety issues and continuity of care. Improved training and policy structures and inter professional work can enhance the role of pharmacists as important members of the dementia team.

Keywords: Alzheimer's disease, pharmacist role, early detection, cognitive screening, medication management

Abstract-25

Blood Brain Barrier Penetration in Alzheimer's Disease: Advances in Formulation and Targeted Drug Design

Manu Kaushik, Shabnam Ain, Qurratul Ain, Kartikay, Ajeet & Babita Kumar

Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: manukaushik0003@gmail.com, 9627502381

ABSTRACT

Introduction: Alzheimer's disease (AD) continues to be among the most difficult types of neurodegenerative disease. There is limited capacity of therapeutic agents to cross the blood brain barrier (BBB) which makes treating Alzheimer's difficult. The BBB has high selectivity of permeability that limits the capacity of drug delivery for the central nervous system (CNS) resulting in poor treatment effectiveness. This review aimed to assess more recent advances in the formulation strategies and targeted drug design to improve BBB penetration for effective Alzheimer's therapy.

Methods: An extensive narrative review was performed using information from peer reviewed journals, pharmaceutical databases and clinical reports published between 2015 and 2025. Studies describing nanocarrier formulations, receptor mediated transport systems and prodrug strategies were examined to summarize advancements in bypassing BBB restrictions.

Results: Novel formulation methods such as lipid based nanoparticles, polymeric micelles and solid lipid nano particles have demonstrated improved stability and better central nervous system bioavailability. Targeted systems using ligands for transferrin, lactoferrin and insulin receptors show encouraging results in promoting receptor mediated transcytosis across the blood brain barrier. Furthermore, multifunctional nanocarriers with antioxidant properties and anti-amyloid effects offer complementary therapeutic potential in preclinical models.

Discussion: New formulations and targeted delivery systems are a significant advancement in addressing the BBB barrier for the treatment of Alzheimer's disease. Ongoing interdisciplinary research and translation of our work will be required to bring these technologies to clinic and enhance patient outcomes.

Keywords: Alzheimer's disease, blood brain barrier, targeted drug delivery, nanotechnology, receptor-mediated transport, formulation development

Abstract-26

"THE ROLE OF COMMUNITY PHARMACISTS IN SCREENING & SUBSEQUENT MANAGEMENT OF CHRONIC RESPIRATORY DISEASE"

Madhur Yadav, Shabnam Ain, Deepal Jaiswal, Qurratul Ain, Babita Kumar, & Cutee

Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: madhuryde63@gmail.com, 7042810469

ABSTRACT

Introduction: Chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (COPD), kill more than four million people every year world-wide and affect hundreds of millions more, the role and the impact of community pharmacists in the screening/assessment for undiagnosed COPD and poorly controlled asthma with or without subsequent management.

Methods: An extensive literature search using four databases (i.e. Medline, PubMed, International Pharmaceutical Abstracts (IPA) and Scopus). Searches were limited to the years 2003-2013, those in English and those reporting research with humans. Data retrieval, analysis and result presentation employed a scoping review method.

Results: More than half of the people screened were found to be poorly controlled and up to 62% of people were identified at high risk for COPD by community pharmacists. The studies varied in the method and type of asthma control assessment/screening, the type of intervention provided and the outcomes measured. While many different methods were used for risk assessment and management services by the pharmacists, all the studies demonstrated that community pharmacists were capable of identifying people with poorly controlled asthma and undiagnosed COPD, providing them with suitable interventions.

Discussion: Community pharmacists can play an effective role in screening of people with poorly controlled asthma and undiagnosed COPD along with delivering management interventions. Future research should focus on development of patient care delivery model incorporating a screening protocol followed by targeted management interventions delivered by the community pharmacist.

Keywords: Mass Screening; Lung Diseases, Outcome Assessment (Health Care), Community Pharmacy Services, Professional Practice, Professional Role.

Abstract-27

"PARKINSON'S: HOMEOPATHY AS COMPLEMENTARY AND APPROACHABLE SOURCE"

Cutee,Shabnam Ain, Qurratul Ain,HimaniBansal, HitenKhattar& Babita Kumar
Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email: cuteemittal@gmail.com, 7428228805

ABSTRACT

Introduction: Parkinson's disease is the second most common neurodegenerative disorder which is an idiopathic condition seen maximum in males and those with less than equal to 65 years of age. Pathologically Parkinson's disease involves the loss of dopaminergic neurons in the substanianigra pars compacta which causes the dopamine deficiency. The hallmark is the formation of lewy bodies, aggregate of alpha-synuclein. The main cause of the Parkinson is unknown but various environmental factors are responsible for the cause. Clinically the Parkinson's involves the movement disorders like tremors and bradykinesia, with non-motor symptoms such as olfactory and mood defects.

Methods: Conventional treatment of Parkinson's disease involves levodopa and dopamine agonists for the management of symptoms. Including this medication the homeopathic therapies are also explored. Specific homeopathic medicines mentioned include Agaricusmuscarius and causticum.

Results: These treatments effectively manage symptoms but do not halt the disease progression that may result in the long-term complication like motor fluctuations and dyskinesias. Regarding homeopathy, some cases reports indicate improvements in symptoms management.

Discussion: The pathogenesis of the Parkinson's disease involves the complex processes like mitochondria dysfunction and oxidative stress. The failure of conventional treatments to slow the disease progression drives interest in complementary approach. However, despite the widespread use of homeopathy, the evidence for its definitive effectiveness is limited. Therefore, there is a need for rigorous clinical trials to establish its role in Parkinson's management.

Keywords: neurodegenerative disorder, Lewy body, alpha- synuclein, Amygdala, Substantianigra pars compacta,, and homeopathy medicines.

Abstract-28

ALZHEIMER'S DISEASE: EFFECT OF NEUROPROTECTIVE PHYTO DRUG

Hiten Khattar[1], Shabnam **Ain[1], Himani Bansal[1], AyanaAin[2], Babita Kumar[1]&Cutee[1]**
[1]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
[2]Ryan International School, Ghaziabad
Corresponding email: hitenkhattar2005@gmail.com, 8287545570

ABSTRACT

Introduction: Alzheimer's disease is a leading cause of dementia and a progressive neurodegenerative disorder. It is basically characterized by the accumulation of the amyloid beta (Aβ) plaques and neurofibrillary tangles, which are composed of hyperphosphorylated tau proteins, with the presence of dystrophic neurites and neuropil threads. These pathological changes are responsible for the impaired neuronal communication and gradually lead to the memory loss and behavioral changes.

Methods: The paper reviews the neuroprotective role of the phytocompound "CURCUMIN" in the prevention and the early management ofAlzheimer's disease. The neuroprotective drugs are the drugs that are designed to protect the neuronal structure and its function, mainly in the disorders that are related to the degeneration or injury of the neurons. Curcumin has been noticed due to its anti-inflammatory, antioxidant, and anti-amyloidogenic properties, which are responsible for its neuroprotective potential.

Result: Curcumin is a polyphenolic compound that contains a diketone moiety and two phenolic hydroxyl groups. These groups enable the drug to scavenge reactive oxygen species and chelate metal ions. It readily binds to the plasma proteins and distributes to tissues such as the brain, liver, and intestine. Curcumin can cross the blood-brain barrier, which makes it suitable forneurological applications. In the early stages the curcumin prevents the amyloid-beta aggregation into toxic oligomers and plaques, reduces inflammation, and interferes with kinase responsible for tau phosphorylation.

Discussion: Curcumin behaves as a great neuroprotective drug when used in early stages of Alzheimer's disease. It may delay disease progression, protect neurons, and improve cognitive function by targeting multiple pathological pathways.

Keyword: neurodegenerative, amyloid-beta plaque, diketone, chelate metal ion, tau phosphorylation.

Abstract-29

"HUTCHINSON-GILFORD PROGERIA SYNDROME: CLINICAL FEATURES, PATHOGENESIS, AND EMERGING THERAPEUTIC OPTIONS"

HimaniBansal, Shabnam Ain, Qurratul Ain,Cutee, HitenKhattar, Babita Kumar & Ajeet

Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: h7302533511@gmail.com,7302533511

ABSTRACT

Introduction: **Hutchinson-Gilford progeria syndrome** (HGPS) is an extremely rare, uniformly fatal, segmental "**premature aging**" disease characterized by extreme short stature, low body weight, early loss of hair, lipodystrophy, scleroderma, decreased joint mobility, osteolysis, and facial features that resemble aged persons. The disorder is caused almost exclusively by a de novo point mutation in the **LMNA gene**, resulting in the production of progerin, a defective form of the lamin A protein.

Methods: Genetic testing is used to diagnose HGPS, revealing the LMNA mutation (c.1824C>T; p.G608G) in more than 90% of those affected. Data on 10 of our own cases and 132 cases from literature are presented. HGPS leads to multiple organ systems being affected, including cardiovascular, skeletal, neurological, and dermatological systems, causing severe disability and increased mortality. Primary morbidity and mortality for children with HGPS is from atherosclerotic cardiovascular disease and strokes, with death occurring at an average age of 14.6 years.

Result: The farnesyltransferase inhibitor **lonafarnib** has shown minor improvements in vascular stiffness and improved lifespan. New therapeutic interventions using antisense oligonucleotides and CRISPR/Cas9 aimed at correcting LMNA mutations show some potential in preclinical studies.

Discussion: The current treatment options for HGPS are limited, but lonafarnibhas shown promise in improving lifespan and reducing cardiovascular disease progression. The therapy also improves low-tone hearing and may decrease headache frequency. Side effects are primarily gastrointestinal and vary in severity and duration. Further research is needed to develop effective treatments and improve the lives of children with HGPS.

Keywords: Hutchinson-Gilford Progeria Syndrome, LMNA gene, premature aging, lonafarnib.

Abstract-30

"PERINATAL ASPHYXIA: A DEVASTATING CONDITION WITH EMERGING THERAPEUTIC OPTIONS"

Rohit Pal, Suhani, Sameer Saifi, Shabnam Ain, Babita Kumar, BhawnaBisht, Ajeet & Cutee

Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: rohitpal6296@gmail.com, 8899492611

ABSTRACT

Introduction: **Perinatal asphyxia** is a severe condition characterized by oxygen deprivation and lack of perfusion in the perinatal period, leading to **hypoxic-ischemic encephalopathy** and long-term neurological sequelae. This condition can result in cerebral palsy, mental retardation, cerebral visual impairment, epilepsy, and learning disabilities, often with fatal outcomes or severe life-long pathologies.

Methods: A cross-sectional study was conducted in a tertiary care Military Hospital in Pakistan, selecting 196 asphyxiated cases through consecutive non-probability sampling technique from the neonatal intensive care unit (NICU). Data was collected and analyzed using SPSS version 15.0, with descriptive statistics and chi-square test applied to find statistical significance.

Result: The study highlights the significant morbidity and mortality associated with perinatal asphyxia, consistent with the complex pathophysiology involving oxidative stress, inflammation, and excitotoxicity.

Discussion: **Therapeutic hypothermia** has been shown to reduce brain injury and improve outcomes in neonates with perinatal asphyxia. Emerging therapies, including antioxidants, anti-inflammatory agents, and **stem cell-based treatments**, are being explored for their potential to mitigate brain damage. Timely identification of perinatal risk factors, improved antenatal and **perinatal care**, and early intervention are crucial in reducing the burden of perinatal asphyxia. Preventive measures can significantly decrease mortality and morbidity associated with perinatal asphyxia.

Keywords: Perinatal asphyxia, hypoxic-ischemic encephalopathy, therapeutic hypothermia, stem cell based treatments, and perinatal care.

Abstract-31

"PHARMACY FOR GLOBAL HEALTH: AN ANALYSIS OF EMERGING TRENDS AND TRANSFORMATION"

SiddharthVardhan Singh, Shabnam Ain, Tanya Devi,M.Manisha, Sagar, Prerna&Suhani
Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email: siddharthsingh0912@gmail.com, 9650491392

ABSTRACT

Introduction: Pharmacy shapes global health by expanding access to medicines, improving affordability, and driving therapeutic innovation. Rapid shifts digital platforms, precision therapies, and resilient supply chains are redefining practice and policy worldwide. Focusing on implementation challenges and opportunities, it highlights strategies for strengthening systems, protecting vulnerable populations, and promoting sustainable, evidence-based interventions that optimize health outcomes, and informing future global health priorities effectively.

Methods: The study focuses on several important trends including the increasing life expectancy and aging, the rise of non-communicable diseases, the risks of pandemics, medication expenditure, the globalization of healthcare and technological innovations such as digitization, robotic and nanomedicine.

Results: The analysis indicates that the world populations will be much older in the near future and the healthcare sector will witness significant growth opportunities. The aging populations will put more pressure on healthcare systems. The surge in the medication expenditure will put much pressure on healthcare systems, insurers, patients etc. The sector is characterized by its above-average growth in the USA and much of the developed world. Therefore, the share of healthcare in gross domestic product continues to rise. The digitization and globalization of healthcare may involve major disruptions in the type of care. Nanoparticles will be used to enhance the precision, quality and efficacy of diagnostics, medications and treatments.

Discussion: The paper touches on several areas including demographic, clinical, financial, managerial and technological transformations and examines their implications for the healthcare sector.

Keywords: Digitization, Healthcare prospects, Medication expenditure, Personalized and precise medicine, Globalization of healthcare.

Abstract-32

"PHARMACY FOR GLOBAL HEALTH: INSPIRING PROGRESS AND FUTURE PROSPECTS"

Al Alexis Ain[1], Anju Sharma[1], Sachin Kumar Gupta[1], Ajay Kumar Tyagi[1] & Madhur Yadav[2]
[1]Ryan International School, Ghaziabad
[2]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email: alexis1409@gmail.com, 9457030131

ABSTRACT

Introduction: Health care and health systems all over the world are undergoing intensive reforms. Internationally, the existing institutions for multilateral cooperation are facing unprecedented challenges. Multiple forces are transforming the pattern of disease and health as well as creating a need for new institutional arrangements.

Methods: A structured review of both peer-reviewed and gray literature on the subject was conducted. The search was conducted using the keywords "health systems progress", "achievements", "challenges, health indicators, future of healthcare" and "technology use in health". The relevant information was collected.

Results: The rapid, unplanned and unsustainable style of urban development will make developing countries cities, the key focal points for emerging environmental and health hazards. Changes will be seen in design, culture and practices of hospitals to better meet the needs of patients, families and providers. Top driving factors of global healthcare system for next 30 years will be leading causes of mortalities, non-health factors (impact of nutrition, sanitation and women's empowerment), investment in health workforce and growth of medical tourism in future healthcare scenario.

Conclusion: Evaluating the patterns of previous 30 years predicting the progress and challenges of future health system are no rocket science. Medical care will be more self-directed in a more tech-savvy population as information will be more accessible and user friendly with higher quality. Health driving factors such as clean water, sanitation and food will take the center stage in humanities struggle and even increase population size.

Keywords: Health systems, indicators, progress, future of healthcare, healthcare technology.

Abstract-33

"PHARMACY FOR GLOBAL HEALTH"

Varun Kumar[1], Shabnam Ain[1], Punita Sharma[2], Shivam Chauhan[1], Bhuvnesh[1]&Srishti

[1]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

[2]Department of Chemistry, SMJN (PG) College, Haridwar, Uttarkhand

Corresponding email: kumarvarun0517@gmail.com, 8010798088

ABSTRACT

Introduction: This provides information on the crucial and growing part of pharmacy and pharmaceutical sciences in advancing global health equity. Although traditionally focused on drug dispensing and patient counseling, the modern pharmacist and pharmaceutical expert personals are uniquely positioned to address pervasive global health challenges through their knowledge.

Methods: This blends findings from a review of global health policy documents, pharmaceutical supply chain management practices, and case studies detailing pharmacist-led interventions. The analysis focuses on following key areas: Pharmacist-led Antimicrobial Stewardship (AMS) Programs and Infectious Disease Management, Supply Chain Resilience and Combating Substandard/Falsified Medicines, Integration into Primary Healthcare (PHC) for Chronic Disease Management.

Results: Evidence shows that strategic engagement of pharmacists leads to significant improvements in global health metrics. Specifically, Pharmacist integration in supply chain optimization decreases medicine stock outs by an around 25%. AMS programs significantly having involvement of pharmacists show up to 40% decrease in inappropriate antibiotic prescribing. Involvement of pharmacists into PHC teams for chronic disease management has been shown to increase medication adherence rates by 30% and decrease emergency department case related to chronic conditions by up to 20%.

Discussion: Pharmacy professionals must be recognized and utilized as frontline public health problems, contributing their knowledge to policy-making, and direct patient care. Furthermore future efforts should focus on standardized global training, leveraging digital health technologies, and advocating for regulatory frameworks that fully empower pharmacists to lead global health initiatives.

Keywords: Global Health Equity, Primary Healthcare, Supply Chain Resilience, Pharmacist Role.

Abstract-34

"CRISPR-CAS PLATFORMS FOR TARGETED DRUG DELIVERY AND GENE THERAPY APPLICATIONS"

Mohd Uzair[1], Shabnam Ain[1], Qurratul Ain[1], Ayana Ain[2], Rumal Singh[3] &Punita Sharma[4]

[1]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

[2]Ryan International School, Ghaziabad

[2]Department of Chemistry, SMJN (PG) College, Haridwar, Uttarakhand

[4]Department of Chemistry, Pali Inter College, Shikohabad, Dist. Firozabad

Corresponding email: uzairtomer786@gmail.com, 8650017644

ABSTRACT

Introduction: Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) and CRISPR-associated (Cas) proteins have revolutionized genetic engineering by providing a highly precise and efficient tool for genome editing. Their integration into targeted drug delivery and gene therapy represents a transformative advancement for treating a wide range of genetic, malignant, and infectious diseases.

Methods: The CRISPR-Cas system, originally derived from a bacterial adaptive immune mechanism, functions through RNA-guided nucleases that enable site-specific genome modifications. Current research focuses on developing advanced carriers—such as nanoparticles, liposomes, and viral and non-viral vectors—to improve the delivery efficiency, stability, and tissue specificity of CRISPR components.

Results: Preclinical studies have demonstrated successful correction of disease-causing mutations and modulation of gene expression with minimal off-target effects. The use of engineered delivery vehicles has enhanced therapeutic precision, reduced systemic toxicity, and improved gene editing outcomes in models of genetic disorders and cancers.

Discussion: Despite significant progress, challenges including delivery barriers, immune responses, and ethical considerations related to germline editing remain. Continued optimization of vector design and regulatory oversight will be crucial for clinical translation. Overall, CRISPR-Cas technologies are poised to redefine personalized medicine by enabling targeted, efficient, and safe genome modifications that offer hope for conditions once deemed untreatable.

Keywords: CRISPR, genome editing, gene therapy, targeted drug delivery, personalized medicine

Abstract-37

"EVOLVING ROLE OF PHARMACY IN GLOBAL HEALTH: EMERGING TRENDS AND TRANSFORMATIVE PRACTICES"

FarhanWaris, Shabnam Ain, Qurratul Ain, Babita Kumar, AbhinavArya& Sazid Khan
Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email: farhanwaris2020rox@gmail.com, 8953604354

ABSTRACT

Introduction: The field of pharmacy has evolved rapidly over the past decade, playing a crucial role in improving global health outcomes. With growing healthcare challenges, including antimicrobial resistance, chronic diseases, and limited access to medicines, pharmacists have become essential contributors to global health systems. This study highlights the key trends and transformations shaping the modern pharmaceutical landscape.

Methods:**farhanwaris2020rox@gmail.com**
A comprehensive literature review was conducted using scientific databases such as PubMed, Scopus, and Google Scholar. Publications from 2015 to 2024 were analyzed to identify emerging trends in pharmaceutical practices, digital health, and patient-centered care. Data were organized under major themes including technological advancement, regulatory innovation, and public health impact.

Results: The review revealed significant progress in personalized medicine, digital pharmacy services, and telepharmacy, especially in low- and middle-income countries. The integration of artificial intelligence, blockchain, and data analytics has improved drug safety, supply chain transparency, and clinical decision-making. Moreover, pharmacists are increasingly involved in preventive healthcare, vaccination programs, and community health education.

Discussion: The transformation in pharmacy practice is reshaping global health by promoting accessibility, affordability, and quality of care. Collaborative approaches between healthcare professionals, supported by policy and education reforms, are essential for sustaining these improvements. Pharmacy is moving beyond traditional dispensing roles toward a more patient-centered, technology-driven, and globally integrated profession. These transformations hold great promise for advancing global health equity.

Keywords: Global Health, Pharmacy Practice, Digital Pharmacy, Personalized Medicine, Public Health, Transformation

Abstract-38

"The Evolving Role of Pharmacists in Global Health Transformation"

Shailja Srivastava[1], Anju Sharma[1], Al Alexis Ain[1], Shabnam Ain[2] & Qurratul Ain[2]
[1]Ryan International School, Ghaziabad
[2]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
Corresponding email: shailjapulak@gmail.com, 9818678689

ABSTRACT

Introduction: Global health is always changing as a result of demographic changes, technological development and expanding burdens from both chronic and infectious diseases. Accessible healthcare professionals pharmacists play a key role in providing safe, effective and equitable use of medications. This paper describes several trends and transformative changes in pharmacy practice that can play a role in improving global health outcomes.

Methods: A recent literary and narrative review of literature, global health policies and reports published by the World Health Organization (WHO) was undertaken to understand emerging trends, innovations and evolving roles of pharmacists in global health systems. The analysis focused on themes related to digital health integration personalized medicine and public health engagement.

Results: According to the findings the advent of digital health technologies, telepharmacy and pharmacogenomics has begun to transform the practice of pharmaceutical care through increased patient safety and improved treatment outcomes. Pharmacist's involvement in antimicrobial stewardship, chronic disease management and immunization have notably increased capabilities in public health on a worldwide scale. The cooperation of education reform and policy alignment is creating a more competent pharmacy workforce globally.

Discussion: The evolution of is crucial to the progress of global health. Improving collaborative networks adopting technological innovation and prioritizing equitable access to medicines will empower pharmacists as sustainable health leaders in every corner of the globe.

Keywords: Global Health, Pharmacy Practice, Digital Health, Public Health Transformation.

Abstract-35

"EPILEPSY: A GLOBAL NEUROLOGICAL CONCERN"

Punita Sharma[1], Shabnam Ain[2], Cutee[2], Hiten Khattar[2], Sazid Khan[2]&Farhan Waris[2]

[1]Department of Chemistry, SMJN (PG) College, Haridwar, Uttarakhand

[2]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

*Corresponding email: 010sharmapunita@gmail.com, 9760504331

ABSTRACT

Introduction: Epilepsy is a chronic disease of the brain characterized by an enduring predisposition to generate siezures, unprovoked by any immediate central nervous system insult, and by neurobiologic, cognitive, physiological and social consequences of seizure recurrences.

These transient episodes result from sudden, excessive electrical discharges in the brain cells, including sensory changes, loss of awareness, uncontrollable jerking or stiffing movements, convulsions and temporary confusion. Epilepsy is major Global health concern affecting approximately 50 million people in world by reducing their quality of life.

Methods: This abstract consists of information regarding definition, etiology, diagnosis and therapeutic strategies for epilepsy. The Interictal EEG provides information and aids in diagnosis and management. It has significant limitations and cannot substitute good judgement. Nonetheless, in skilled hands, it provides vital information in patients, hence, enhances understanding of condition.

Result: Causation is an aspect of epilepsy neglected in the scientific literature and in the conceptualization of epilepsy at a clinical and experimental level. Causes of epilepsy include encompassing genetic factor, brain damage, stroke, lesions, or tumors. Neuroimaging, effective management primarily with medications can control seizures up to 70% of individuals.

Discussion: Epilepsy imposes a significant global strain, aggravated by a wide treatment. Despite effective treatment, seizures can be controlled. WHO projects indicated that training primary health-care providers to diagnose and treat epilepsy can effectively reduce the epilepsy treatment gap.

Keywords: Epilepsy, Seizures, Interictal EEG, Convulsions, Global health.

Abstract-36

"PHARMACY FOR GLOBAL HEALTH: THE ROLE OF DIGITAL HEALTH TECHNOLOGIES IN TRANSFORMING GLOBAL PHARMACY PRACTICE"

Shivam Chauhan[1], Shabnam Ain[1], Anju Sharma[2], Al Alexis Ain[2] & Ayana Ain

[1]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

[2]Ryan International School, Ghaziabad

Corresponding email**:** chauhanshivam1969@gmail.com, 7703861223

ABSTRACT

Introduction: As global healthcare systems evolve, digital health technologies are becoming increasingly essential in transforming pharmacy practice. From telepharmacy to AI-powered tools and mobile health apps, these innovations are reshaping how pharmacists deliver care, particularly in remote areas. This shift is crucial for improving access to medicines, enhancing patient safety, and supporting global health equity.

Methods: This narrative review synthesizes recent evidence on the impact of digital health technologies on pharmacy practice worldwide. Literature was gathered from peer-reviewed journals.Key areas of focus included telepharmacy, electronic prescriptions, AI in clinical decision-making, and mobile pharmacy services. Data were matically analyzed to identify global trends, and implementation challenges.

Results: The review identified three major digital trends in pharmacy: **Telepharmacy**: Expanding pharmacy services to rural and remote communities, improving access to counseling and medication management, **AI and Automation**: Supporting pharmacists in clinical decision-making, inventory management, and error reduction and **E-prescriptions and Electronic Health Records**: Enhancing prescription accuracy, reducing duplication, and improving continuity of care, maintaining medical records in digital form.

Discussion: Digital technologies are redefining the scope of pharmacy practice, enabling pharmacists to play a more proactive role in healthcare delivery. However, disparities in digital infrastructure, training, and regulatory support limit widespread adoption in many regions. To fully harness the potential of digital pharmacy forglobal health, international collaboration is needed to build inclusive digital ecosystems, standardize digital competencies, and promote equitable access to technology.

Keywords: Digital Pharmacy, Telepharmacy, Global Health,Pharmacy Practice,Health Technology

Abstract-39

"LEUKEMIA: AN OVERVIEW"

Bhawana Bisht, Punita Sharma[#], Shabnam Ain, Babita Kumar, Manu Kaushik & Cutee
Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
[#]Department of Chemistry, SMJN (PG) College, Haridwar, Uttarakhand
Corresponding email: bhawana.bisht@sanskar.org, 9220236178

ABSTRACT

Introduction: Leukemia is a clonal proliferation of hematopoietic stem cells in the bone marrow, which is characterized by the uncontrolled proliferation of abnormal white blood cells. It disrupts normal hematopoiesis leading to anemia, infection, and bleeding tendencies. Leukemia is mainly classified into four types: acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), and chronic myeloid leukemia (CML). Each type of leukemia varies in onset, progression, and response to treatment.

Methods: The study provides an overview of leukemia through a review of various scientific literature, clinical findings, and epidemiological data. The information was collected from peer-reviewed medical journals, research articles, and global cancer databases to summarize the causes, pathological mechanisms, and current treatment strategies related to the leukemia.

Result: The research indicates that leukemia arises due to the genetic mutations, chromosomal abnormalities like Philadelphia chromosome, exposure to ionizing radiation, certain chemicals and inherited genetic disorders. These all factors alter the regulation of normal cell which results in the accumulation of immature leukocytes. The advancement in the diagnostic tools like flow cytometry, cytogenetic analysis, and molecular testing have improved early detection and classification of disease. The treatment approaches may include chemotherapy, targeted therapy, immunotherapy and bone marrow transplantation, which have significantly enhanced the survival rate of the patients.

Discussion: Despite the therapeutic progress, drug resistance and relapse are the major challenges in the leukemia management. The continue research into molecular pathways, personalized medicine, and novel immunotherapies offer promising direction for improving the patient outcomes and to achieve long-term remission.

Keywords: Hematopoietic, hematopoiesis, epidemiological, Philadelphia, immunotherapies.

Abstract-40

"NANOTECHNOLOGY- ENHANCED HERBAL THERAPEUTICS FOR SITE-SPECIFIC AND EFFECTIVE DRUG DELIVERY"

Bhuvnesh[1], Ajay Kr. Tyagi[2] & Al Alexis Ain[2], Punita Sharma[3], Mohd Uzair[1] & Shabnam Ain[1]
[1]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad
[2]Ryan International School, Ghaziabad
[3]Department of Chemistry, SMJN (PG) College, Haridwar, Uttarakhand
Corresponding email: bhuvnesh3978@gmail.com, 9654910483

ABSTRACT

Introduction: The convergence of nanotechnology and traditional herbal medicine has paved the way for the development of nano-herbal therapeutics that promise targeted, efficient, and safer drug delivery. Herbal medicines are rich in bioactive compounds and have been widely used for their therapeutic benefits. However, their broader clinical use is hindered by limitations such as poor solubility, low bioavailability, rapid metabolism, and absence of tissue specificity.

Methods: Nanoformulation approaches employ nanosized carriers—such as liposomes, polymeric nanoparticles, solid lipid nanoparticles, nanocrystals, and nanoemulsions—to enhance pharmacokinetic properties. These nanocarriers improve solubility, stability, and circulation time while enabling passive and active targeting. Surface modification with ligands including antibodies, peptides, or folic acid further facilitates receptor-mediated delivery to specific tissues or diseased cells.

Results: Experimental studies reveal that nanoformulations of herbal compounds such as curcumin, quercetin, and resveratrol exhibit significantly enhanced bioavailability, stability, and therapeutic efficacy compared to their conventional forms. The use of nanocarriers has also demonstrated reduced systemic toxicity and improved pharmacodynamic profiles in preclinical models.

Discussion: Despite these promising outcomes, key challenges such as large-scale manufacturing, reproducibility, standardization of herbal extracts, and evolving regulatory frameworks remain. Addressing these barriers through interdisciplinary collaboration will accelerate clinical translation and commercialization. Overall, nano-herbal formulations exemplify a modern approach to precision medicine, merging the benefits of phytotherapy with nanoscale engineering for safe and effective treatment delivery.

Keywords: nanotechnology, herbal therapeutics, nanoformulation, targeted drug delivery, phytomedicine.

Abstract-41

"The Changing Face of Pharmacy in Global Health"

Sachin K. Gupta[1], Al Alexis Ain[1], Anju Sharma[1], Ajay K. Tyagi[1], Kartikay[2] & Qurratul Ain[2]

[1]Ryan International School, Ghaziabad

[2]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

*Corresponding email: qurratul.ain@sanskar.org, 9457030131

ABSTRACT

Introduction: Significant challenges in global health like pandemics, antimicrobial resistance and inequitable access to medicines have highlighted the evolving function of pharmacy in supporting health care systems. The profession of pharmacy is transitioning from a product centered discipline to a patient and systems centered profession that contributes to global health outcomes directly. This study will identify key trends and changes that are informing modern pharmacy practice as it relates to global health.

Methods: A narrative review approach was utilized bringing together new literature from international health agencies, academic publications and professional reports published in the period 2015 to 2025. Themes related to the integration of technology, workforce development, educational reform and global health policy were identified.

Results: The results indicate substantial changes such as a wider role for pharmacists in public health projects, growing digital health tool utilization and increased integration into multidisciplinary care. New technologies including telepharmacy, artificial intelligence and pharmacogenomics are enhancing access and efficiency for pharmaceutical care. Nonetheless training standards, policy frameworks and equitable access of medicines are inconsistent across established brick and mortar settings and remain significant challenges most notably in low resource settings.

Discussion: Global health transformation is at the forefront of pharmacy and supporting universal health coverage and sustainable health service provision. The full realization of pharmacy's potential as a pillar of global health transformation requires strengthened global collaboration, education standardization and capital investment in digital innovation.

Keywords: Global health, Pharmacy practice, Digital health, Pharmaceutical & transformation.

Abstract-42

"TRANSFORMING PHARMACY PRACTICE FOR GLOBAL HEALTH: INTEGRATING INNOVATION, ACCESS, AND SUSTAINABILITY"

Rumal Singh[1], Shailja Srivastava[2], Al Alexis Ain[2], Mohd Uzair[3], Kartikay[3] & Suhani[3]

[1]Pali Inter College, Shikohabad, Dist. Firozabad

[2]Ryan International School, Ghaziabad

[3]Sanskar College of Pharmacy and Research, NH-9, Jindal Nagar, Ghaziabad

Corresponding email: rmlsingh767@gmail.com, 8630100476

ABSTRACT

Introduction: The global health landscape is rapidly evolving, demanding a parallel transformation in the pharmacy profession. Pharmacists now play a pivotal role not only in dispensing medicines but also in promoting public health, ensuring equitable access, and integrating innovative healthcare solutions.

Methods: A descriptive review of recent literature (2015–2024) was conducted to identify key trends in pharmacy practice impacting global health. Data sources included WHO reports, PubMed, and international pharmacy associations. The analysis focused on innovations, policy changes, and digital integration in pharmaceutical care.

Results: The findings reveal three major transformative trends: the expansion of pharmacist-led clinical services, particularly in chronic disease management and immunization; digital health innovations, including telepharmacy and AI-based prescription monitoring; and sustainable pharmaceutical practices aimed at reducing environmental impact. Furthermore, global collaboration and education reform are enhancing pharmacists' competencies to meet international health goals.

Discussion: The transformation of pharmacy practice aligns closely with the United Nations Sustainable Development Goals (SDGs), especially those related to health and well-being. However, challenges such as unequal access to technology, policy barriers, and workforce disparities remain. Addressing these gaps requires coordinated global action and continuous professional development. Pharmacy's transformation is central to advancing global health. Strengthening innovation, accessibility, and sustainability within pharmacy systems will ensure equitable healthcare outcomes worldwide.

Keywords: Pharmacy practice, Global health, Innovation, Sustainability, Digital health, Transformation

Abstract-43

"MEDICAL DEVICE SINGLE AUDIT PROGRAM: EVALUATING ITS ROLE IN INTERNATIONAL"Rutuja

Chaudhari

ABSTRACT

Abstract: Medical Device Single Audit Program is a system of a medical device manufacturer that meets the requirements of more than one regulatory jurisdiction. The program was created by the International Medical Device Regulators Forum (IMDRF) to enhance medical device safety and regulation on a global level. The MDSAP enables manufacturers of medical devices to be audited one time for conformity with the standard and regulatory needs of up to five various medical device markets, such as Australia, Brazil, Canada, Japan, and the United States. The program's main objective is to pool regulatory resources together and use them to regulate makers of medical devices through the administration of a single program of audit that is effective, efficient, and sustainable. Making sure medical devices meet the needs of several markets can be costly, time consuming and disruptive. MDSAP enables you to guarantee compliance with ISO 13485 and the regulatory needs of Australia, Brazil, Canada, Japan and the US. Medical device manufacturers are held accountable for ensuring their products are safe and that they meet the legal and regulatory standards of the market(s) they are intended. Because the majority of nations have their own rules, compliance can be an expensive process involving numerous audits against a number of requirements. Far preferable is one auditing program serving several markets.

Abstract-44

"OKRA (HIBISCUS ESCULENTA) FRUIT POLYSACCHARIDE-G-POLY(SODIUM ACRYLATE): SYNTHESIS, CHARACTERIZATION, AND APPLICATION IN FORMULATION OF BUCCOADHESIVE HYDROGEL FOR PERIODONTITIS"

Sanjukta Sen [b]* , Gouranga Nandi [a]

a. Department of Pharmaceutical Technology, University of North Bengal, Raja Rammohunpur, Dist. – Darjeeling, West Bengal, India, Pin- 734013.

b. Gitanjali College of Pharmacy, Lohapur, Nalhati, Birbhum, West Bengal, India, Pin-31237.

ABSTRACT

Abstract: The objective of the present study was to modify okra (Hibiscus esculenta) by graft- copolymerization and characterize and fabricate it into buccoadhesive hydrogel. Okra gum was grafted with sodium acrylate employing a synergistic combination of free-radical initiator and microwave irradiation. The molar mass, zeta potential, and viscosity study corroborate the formation of okra fruit polysaccharide-g-poly (sodium acrylate). The maximum % grafting (%G) and highest molar mass were found to be 717 and 8.22 × 105 (Da), respectively. The viscosity was increased after grafting, and the highest viscosity was 828 cp. The toxicity and biodegradability study also exhibited the biocompatible and biodegradable nature of the copolymer, which might make the copolymer suitable for sustained-release drug delivery systems as a smart semi-synthetic biopolymer.

Keywords: okra fruit polysaccharide, acrylic acid, graft-copolymer, hydrogel

Abstract-45

"GUT–BRAIN AXIS IMBALANCE: A KEY DRIVER IN NEURODEGENERATION"

Mridul Panda*, Sakshar Saha
Department of Pharmaceutical Technology, JIS University, Kolkata-700109, West Bengal
E. Mail: mridulpanda100@gmail.com

ABSTRACT

Abstract: Neurodegenerative disorders such as Alzheimer's and Parkinson's disease affect more than 55 million people worldwide, with India accounting for approximately 8–9 million dementia cases due to aging demographics, unhealthy lifestyles, and limited healthcare resources. The gut–brain axis, a complex bidirectional communication pathway between the gastrointestinal tract and the central nervous system, plays a fundamental role in sustaining neurological health and function. Recent studies employing metagenomic and metabolomic analyses, animal experiments, and interventional approaches have investigated how gut microbiota imbalance, known as dysbiosis, influences the onset and progression of neurodegenerative diseases. These methods focused on assessing microbial diversity and the activity of key metabolites, including short-chain fatty acids and tryptophan derivatives, to understand their effects on neuroinflammation, neurogenesis, and the permeability of intestinal and neural barriers. Results demonstrate that dysbiosis leads to systemic and neuroimmune inflammation, disrupts the gut and blood–brain barriers, and permits the entry of neurotoxic molecules into the brain, ultimately accelerating neuronal damage and degeneration. Furthermore, microbial metabolites regulate the activation of glial cells, especially microglia and astrocytes, which are integral to neurodegenerative pathophysiology observed in conditions such as Huntington's, Alzheimer's, and Parkinson's disease. Distinct microbial dysregulation patterns are associated with protein misfolding, chronic inflammation, and immune dysfunction—key pathological features underlying these disorders. Overall, these findings suggest that modulation of the gut microbiome through probiotics, prebiotics, dietary interventions, or fecal microbiota transplantation offers promising opportunities for early diagnosis, prevention, and individualized therapy, providing a novel microbiome-targeted approach for managing neurodegenerative diseases.

Keywords: Neurodegenerative disorders, Gut–brain axis, Neuroinflammation, Blood–brain barrier, Personalized therapy.

Abstract-46

"PHASES OF NECROSIS (CELL DEATH)"

Md Nasim, Md Mursalim, Asad Arzoo
Radiant Group of Institutions, Kishanganj

ABSTRACT

Abstract: Necrosis is a form of unregulated cell death that results from severe and irreversible cellular injury. It commonly occurs due to factors such as trauma, ischemia, toxins, or infection. The process is characterized by cellular swelling, disruption of the plasma membrane, and leakage of intracellular components into the extracellular space. Unlike apoptosis, necrosis lacks regulatory control and invariably triggers an inflammatory response in the surrounding tissue. Understanding the mechanisms and consequences of necrosis is essential for identifying its pathological role in various diseases and tissue injuries.

Abstract-47

"ROLE OF PROBIOTICS IN THE MANAGEMENT OF ACETAMINOPHEN INDUCED NEPHROTOXICITY"

Tanusree karmakar, Tarun Kumar Dua
Department of Pharmaceutical Technology, University of North Bengal, rajarammohunpur,
Darjeeling 734013, West Bengal India

ABSTRACT

Abstract: Paracetamol (APAP) is frequently given as an analgesic and antipyretic. The hazardous metabolite N-acetyl-p-benzoquinone imine (NAPQI) is formed when APAP undergoes metabolism by oxidation or conjugation by glucuronate and sulphate, just like any other medication or drugs. Additionally, conjugation with reduced glutathione detoxifies the NAPQI. Remarkably, APAP is also converted into p-aminophenol, another extremely hazardous but small metabolite, in the kidney by a deacetylation reaction with the N-deacetylase enzyme present. Both p-aminophenol and NAPQI exhibit hepatotoxicity and nephrotoxicity. Therefore, continued carelessness may result in nephrotoxicity, which can cause uremia and ultimately renal failure, making long-term therapeutic dose use and needless overdose of APAP extremely concerning. Probiotic treatment has been shown in recent studies to prevent the series of events linked to APAP-induced nephrotoxicity. The role of various probiotics that have previously been studied in nephrotoxicity or uremia brought on by an APAP overdose is highlighted in this review.

Keywords: Acetaminophen · Nephrotoxicity · Probiotic · Kidney

Abstract-48

"ANTIOXIDANT AND ANTICOAGULANT PROPERTIES OF PINEAPPLE EXTRACT"

Sipra Banerjee [a], Dhrubo Jyoti Sen [b], Sudip Kumar Mandal [c], Beduin Mohanty [b]
a.Department of Pharmaceutical Technology, Brainware University,
b School of Pharmacy, Techno India University
c Dr. B.C Roy College of Pharmacy and Allied Health Sciences
*Corresponding author- ssb.pt@brainwareuniversity.ac.in

ABSTRACT

Introduction: Pineapple (Ananas comosus) is a tropical fruit rich in phytoconstituents that exhibit diverse pharmacological properties. The present study aims to evaluate the antioxidant and anticoagulant activities of pineapple extract and to identify the chemical groups responsible for these effects.

Methods- The antioxidant potential of the pineapple extract was analyzed using the free radical scavenging method, and the concentration required to inhibit 50 percent of free radicals (IC_{50}) was determined. The anticoagulant activity was assessed through in vitro experimental methods. Additionally, Fourier Transform Infrared spectroscopy was employed to identify the functional groups contributing to the biological activities of the extract.

Results- The pineapple extract demonstrated considerable antioxidant activity with an IC_{50} value of 41.67 µg/mL, indicating strong free radical inhibition. Fourier Transform Infrared analysis revealed the presence of functional groups such as hydroxyl, amine, carbonyl, aldehyde, carboxylic acid, ketone, aromatic benzene ring, and aliphatic hydrocarbon chains, which are commonly associated with antioxidant activity.

Discussion- The presence of these active functional groups supports the potent antioxidant and anticoagulant effects of pineapple extract. The findings suggest that the extract may serve as a natural source of therapeutic agents useful in managing oxidative stress and coagulation- related disorders.

Keywords: Pineapple extract, antioxidant capacity, IC_{50} value, anticoagulant activity, phytochemical analysis

Abstract-49

"PHYTOCHEMICAL ANALYSIS AND ANTI-OXIDANT ACTIVITY OF MIKANIA MICRANTHA LEAVES"

Ambika Bag*, Pintu Kumar De , Moumita Ray
Department of Pharmaceutical Technology, JIS University, Kolkata-700109, West Bengal, India
* E.mail: ambikabag03@gmail.com

ABSTRACT

Abstract: Mikania micrantha Knuth commonly know as mile-a-minute or bitter vine, is a rapidly growing tropical herb from the family Asteraceae.Modern pharmacological studies provide scientific evidence that bitter vine possesses outstanding therapeutic potencies, i.e., antimicrobial, anti-inflammatory, cytotoxic, anticancer, antidiabetic, antioxidant, and wound healing activities. The present study mainly focused on phytochemical analysis and evaluation of anti-oxidant activity of Mikania micrantha leaves collected in the winter season. Mikania micrantha leaves were collected in the winter season and authenticated, and hydroalcoholic extracts were prepared using maceration. Phytochemical analysis and anti-oxidant study were performed. Assessment of anti-oxidant activity of Mikania micrantha extract is done using DPPH free radical scavenging assay ,Nitric oxide scavenging assay and Reducing power study. Recent experiment assessed Mikania micrantha leaves, finding Presence of alkaloids, glycosides, anthocyanin, flavonoid, and phenolic content . Present study showed that total phenolic content of winter sample is 111.98mg/GAE g while the total flavonoid content of the winter sample is 230.032mg/QE g of extract. The IC50 value of hydroalcoholic extract of Mikania micrantha leaves based on DDPH free radical method has been determined for winter at the concentration of 11.79 µg/ml which showed significant anti-oxidant activity .The active phytoconstituents of the Mikania micrantha leaves mostly the phenolic , and flavonoids its derivatives must be a promising source of therapeutic approach for the multifaceted disease and its associated complications.Mikania micrantha therapeutic benefits can be better understood with further research into the mechanisms of action underlying its pharmacological activity.

Keywords: Mikania micrantha Knuth, Phytochemical analysis, Antioxidant activity, DPPH assay, Nitric oxide scavenging, Reducing power assay

Abstract-50

"LIVER FIBROSIS: BREAKTHROUGHS IN THERAPEUTIC INTERVENTION"

Sagar Dey*, Sakshar Saha, Moumita Ray
Department of Pharmaceutical Technology, JIS University, Kolkata-700109, West Bengal, India
* E. Mail: sagardeyofficial25@gmail.com

ABSTRACT

Abstract: Liver fibrosis is a progressive condition marked by excessive scar tissue accumulation from chronic liver injury, posing a major global health challenge. It can lead to serious complications such as cirrhosis, liver failure, portal hypertension, ascites, hepatic encephalopathy, internal bleeding, and even increased risk of liver cancer. Present study is a comprehensive review of the potential drug candidates applicable for treatment of liver fibrosis and its emerging future direction. Viral hepatitis B and C remain the leading causes, with estimated global incidence rates of 3.3% for advanced fibrosis and 1.3% for hepatic cirrhosis. Now a days. obesity is one of the predisposing factors to increase the prevalence of non alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH), also termed metabolic dysfunction associated steatosis liver disease (MASLD). Presently, no approved medications can reverse liver fibrosis, but several agents show promise in the management. Belapectin targets NASH, while Pirfenidone and Nintedanib, developed for pulmonary fibrosis, demonstrate antifibrotic potential in liver disease. Cenicriviroc, a chemokine receptor 2 or 5 antagonist, has shown anti-inflammatory and antifibrotic effects in early clinical trials, and Obeticholic acid, a Farnesoid X Receptor agonist, is under investigation for NASH-related fibrosis. Emerging therapeutic strategies are focused on hepatic stellate cells, fibrogenic signaling pathways, and the gut–liver axis, which clinical validation will enhance the patient outcomes in future with improved disease prognosis.

Keywords: Liver fibrosis, therapeutic strategy, disease prognosis.

Abstract-51

"NEGLIGENCE IN PHARMACEUTICAL WASTE MANAGEMENT IN RURAL AREAS: A SILENT THREAT TO HUMAN AND ANIMAL HEALTH"

Nasihat Perween
Radiant Institute of Pharmaceutical Sciences, Fatma Nagar, Salki Tengarmari, Kishanganj, Bihar, 855107
E-mail:- nasihatnazir@gmail.com

ABSTRACT

Abstract: Pharmaceutical waste mismanagement in rural areas poses a growing yet often overlooked environmental and public health concern. The absence of proper waste segregation, inadequate disposal infrastructure, and limited awareness among healthcare workers and the general population contribute to the accumulation of expired, unused, or improperly discarded medicines. Such negligence leads to the contamination of soil and water resources, resulting in severe ecological imbalance. Exposure to pharmaceutical residues can cause antibiotic resistance, hormonal disruption, and toxic effects in both humans and animals. Livestock consuming contaminated water or feed are at risk of developing health complications that may indirectly affect human health through the food chain. Despite existing guidelines for biomedical and pharmaceutical waste disposal, implementation remains weak in rural healthcare settings due to lack of training, resources, and monitoring systems. Addressing this silent threat requires urgent action through community education, enforcement of regulatory measures, and establishment of proper waste management systems. Promoting awareness, encouraging the use of color-coded disposal bins, and adopting eco-friendly disposal methods are essential steps toward safeguarding public and environmental health in rural areas.

Keywords: Pharmaceutical waste, rural areas, environmental pollution, human health, animal health, antibiotic resistance, waste management, awareness, sustainability.

Abstract-52

"TRENDS IN PCOS MANAGEMENT: PHARMACOTHERAPY AND DIGITAL SOLUTIONS "

Shayaque Niyaz
Radiant institute of Pharmaceutical Sciences, Fatma Nagar, Salki Tengarmari, Kishanganj, Bihar-855107
*E-mail:- shayaqueniyaz@gmail.com

ABSTRACT

Abstract: Polycystic Ovary Syndrome (PCOS) is a multifactorial endocrine disorder that affects millions of women of reproductive age globally, characterized by hormonal imbalance, insulin resistance, and reproductive dysfunction. Over the years, management strategies have evolved significantly, moving from conventional symptom-based treatments to more holistic, individualized, and technology-driven approaches. Pharmacotherapy remains the cornerstone of PCOS management, with agents such as metformin, oral contraceptives, and anti-androgens being widely used to regulate ovulation, restore hormonal balance, and improve insulin sensitivity. Recent advancements highlight the growing use of inositols, GLP-1 receptor agonists, and selective estrogen receptor modulators, offering improved metabolic and reproductive outcomes with fewer side effects. Alongside pharmacological innovation, digital health technologies are emerging as transformative tools in PCOS care. Mobile applications, telemedicine, artificial intelligence-based monitoring systems, and wearable devices are empowering patients to track symptoms, optimize lifestyle interventions, and maintain treatment adherence. These digital solutions foster continuous communication between patients and healthcare providers, promoting early intervention and data-driven decision-making. The convergence of pharmacotherapy and digital health has created a more personalized, efficient, and patient-centric model of PCOS management. Future trends suggest an integrated ecosystem where pharmacological treatments are complemented by digital platforms to enhance monitoring, engagement, and overall quality of life for women with PCOS.

Keywords: PCOS, pharmacotherapy, metformin, inositol, GLP-1 receptor agonist, digital health, telemedicine, personalized medicine, women's health.

Abstract-53

"HIV AND AIDS: A PERSISTENT GLOBAL HEALTH CHALLENGE"

Falak Siddique
Radiant Institute of Pharmaceutical Sciences, Fatma Nagar, Salki Tengarmari, Kishanganj, Bihar, 855107
E-mail:- falaksiddique505@gmail.com

ABSTRACT

Abstract: Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) continue to represent one of the most serious public health challenges worldwide. HIV weakens the immune system by attacking CD4 cells, making individuals more vulnerable to infections and diseases. Despite remarkable advances in treatment and prevention, including the availability of antiretroviral therapy (ART), millions of people, particularly in developing and rural areas, still lack adequate access to healthcare and awareness programs. Social stigma, discrimination, and misinformation further hinder early diagnosis and effective management. Women, children, and marginalized communities remain disproportionately affected. The transmission of HIV occurs mainly through unprotected sexual contact, contaminated needles, and from mother to child during childbirth or breastfeeding. Continuous education, safe sexual practices, regular testing, and adherence to ART are crucial for controlling the spread of HIV and improving the quality of life of affected individuals. Strengthening healthcare infrastructure, promoting awareness, and ensuring equitable access to treatment are essential to achieve the global goal of ending the HIV/AIDS epidemic.

Keywords: HIV, AIDS, immune system, public health, antiretroviral therapy, awareness, prevention, stigma, global health.

Abstract-54

"A REVIEW ON RECENT ADVANCES IN NATURALLY DERIVED BIO ADHESIVE MATERIALS FOR THE REGENERATION OF DURA MATER"

Raihan Sarkar[1]*, Ahana Hazra[1], Mithun Bhowmick[1]
1Bengal College of Pharmaceutical Sciences and Research
Bidhannagar, Durgapur, West Bengal, 713212, India
Email Id: ra8927985963@gmail.com

ABSTRACT

INTRODUCTION: Dura mater is the tough outer layer of tissue that protects brain and spinal cord, located near to the skull. It provides physical safety and structural support to the central nervous system (CNS). The thickness of the dura mater in humans is 1.06 ± 0.2 mm with increasing age, the dura thickness approximately 29.2% in males and 28.2% in females. Naturally derived bio adhesive materials from lipids, proteins, and polysaccharides (cellulose, fibrin, chitosan, collagen) are biocompatible, biodegradable biopolymers widely used for medical and dura mater tissue repair.
METHODS: Naturally derived bio adhesive materials and techniques effectively support dural repair. Electrospun nanofibrous scaffolds mimic the dura's matrix, enhancing cell growth. Hydrogel-based adhesives polymerize in situ for strong bonding. Composite membranes of collagen, chitosan, and silk fibroin replicate dura layers, while fibrin and collagen sealants close tears and promote natural healing. These techniques show promise for efficient and functional dura mater regeneration.
RESULTS: Chitosan-based adhesives showed adhesion strength of 35–50 kPa, while fibrin sealants achieved 95% dural closure in animal studies. Collagen–gelatin composites improved tensile strength by 40–60% and maintained over 85% cell viability. Hybrid alginate systems degraded within 14–21 days, supporting effective tissue regeneration and superior sealing compared to synthetic materials.
DISCUSSION: Bio adhesive materials derived from natural polymers exhibit promising mechanical and biological properties for dura mater regeneration. Overall, natural bio adhesives are revolutionizing medical treatments by offering safer and more efficient solutions for tissue repair and regeneration.

KEYWORDS: Dura mater, natural bio adhesive materials, hydrogel-based adhesives, tissue regeneration/repair, biocompatibility and biodegradability.

Abstract-55

"TITLE: OF PHARMACIST IN VACCINE AND DRUG DEVELOPMENT"

Jafar Equbal
Radiant Institute of Pharmaceutical Sciences, Fatma Nagar, Salki Tengarmari, Kishanganj, Bihar, 855107
E-mail:- jequbal567@gmail.com

ABSTRACT

Introduction: Pharmacists play a crucial role in every stage of vaccine and drug development—from discovery to patient delivery. In the early stages, they contribute to **drug design, formulation, and dosage optimization** through their understanding of pharmacology and medicinal chemistry. During **clinical trials**, pharmacists ensure proper drug handling, dosing accuracy, and monitor **adverse effects** to ensure safety and efficacy. In vaccine development, they assist in **formulation stability, cold chain management**, and **immunization programs** to ensure effective distribution and administration. Pharmacists also play a vital part in **pharmacovigilance**, tracking post-marketing effects and promoting **rational drug use**. Moreover, their role extends to **public education, awareness campaigns, and combating misinformation** regarding vaccines and medicines. Through research, regulatory support, and patient counseling, pharmacists bridge the gap between laboratory innovation and community health, making them essential members of the healthcare and pharmaceutical research teams.

Keywords: Pharmacist, Vaccine Development, Drug Discovery, Clinical Trials, Pharmacovigilance, Public Health, Immunization.

Abstract-56

"3D PRINTING: TRANSFORMING PHARMACY PRACTICE AND GLOBAL HEALTH THROUGH"

Rohit Kumbhakar*, Aryarup Chakraborty
Bengal College of Pharmaceutical Technology, Dubrajpur, Birbhum, 731123
Corresponding Author mail id : kumbhakarrohit8@gmail.com

ABSTRACT

Introduction: Three-dimensional (3D) printing, or additive manufacturing, is bringing a major change in the field of pharmacy by allowing the production of customized medicines. It creates dosage forms layer by layer from digital models, offering precision, flexibility, and better patient care. The approval of Spritam® (levetiracetam) in 2015 as the first FDA-approved 3D-printed drug proved the real-world success of this technology.

Methods: Different materials such as polymers (PVA, PLA, PEG, HPMC), drug powders, and bio-inks are used in 3D printing. Common printing techniques include Fused Deposition Modeling (FDM), Stereolithography (SLA), Selective Laser Sintering (SLS), Inkjet Printing, and Binder Jetting. These methods allow the creation of tablets with accurate doses, multiple drug combinations, and controlled drug release profiles.

Results: Recent studies show that 3D printing can produce multi-drug polypills, orodispersible tablets,
and personalized pediatric formulations. Bioprinting has also shown promise in tissue and organ development for regenerative medicine. These applications improve drug delivery, patient compliance, and treatment efficiency.
Discussion/Conclusion:
3D printing supports global health by making drug production faster, cheaper, and more accessible, especially in remote or low-resource areas. It reduces waste and allows on- demand manufacturing. In the future, combining 3D printing with artificial intelligence and nanotechnology could lead to smart drug systems and even home-based medicine printing, making healthcare more personalized and efficient.

Keywords: 3D printing, personalized medicine, drug manufacturing, global health, additive manufacturing

Abstract-57

"PAST, PRESENT, AND FUTURE PROSPECTS OF NUTRACEUTICALS"

Santanu Maity [1], Suprodip Mandal [2], Dr. Shaileyee Das [3]*

1 M. Pharm, 2nd Year, 2 Associate Professor, Department of 3* Associate Professor, HOD
Department of Pharmacognosy , Bharat Technology ,Uluberia,
Email: drshaileyeedas@gmail.com

ABSTRACT

Introduction- Nutraceuticals bioactive compounds derived from food have gained prominence in India due to rising lifestyle disorders and increased public health awareness. Rooted in ancient traditions like Ayurveda, these products are now central to preventive healthcare strategies.

Methods: This review synthesizes current literature, market data, and regulatory frameworks to evaluate the evolution, clinical relevance, and future prospects of nutraceuticals in India. Emphasis is placed on functional foods, dietary supplements, and phytomedicines validated through modern pharmacognostic approaches.

Results: India's nutraceutical market has grown from USD 4 billion in 2020 to a projected USD 18 billion by 2025. Key drivers include 100% FDI in manufacturing, omnichannel retail expansion, and consumer demand for immunity boosters, cardio-protective agents, and gut health enhancers. Regulatory oversight by FSSAI has intensified, with emerging frameworks for nutrivigilance and phytovigilance to monitor safety and efficacy.

Discussion: Despite rapid growth, challenges persist—irrational product combinations, lack of clinician training in nutrition science, and insufficient real-world evidence. Future success depends on robust clinical trials, nano-formulations, personalized nutrition, and ethical marketing. India's unique blend of biodiversity, traditional knowledge, and manufacturing excellence positions it as a global leader in nutraceutical innovation.

Keywords: Consumer health, dietary supplements, food safety, functional foods, public health

Abstract-58

"PHARMACOLOGICAL ACTIVITIES OF NELUMBO NUCIFERA: A MEDICINAL"

Satyam Kumar, Aryan Kumar, Kishor Kumar Roy*

Department of Pharmaceutical Science, Jharkhand Rai University, Raja Ulatu, Namkum, Ranchi (Jharkhand) 834010
Email: satyamkumar2s003@gmail.com
*Corresponding author: kishor.roy@jru.edu.in

ABSTRACT

Introduction-Nelumbo nucifera Gaertn., commonly known as the sacred lotus, is an aquatic plant highly valued in traditional medicine for its diverse therapeutic applications. Every part of the plant, including its leaves, flowers, seeds, and roots —has health benefits. It contains many natural compounds such as alkaloids, flavonoids, and polyphenols, which are responsible for its healing properties. Scientific studies have shown that Nelumbo nucifera has antioxidant, anti inflammatory, antidiabetic, and anticancer properties.it can help reduce blood sugar levels, protect the liver and heart, and support brain health. The seeds are known to help manage cholesterol and lower blood sugar, while the leaves and flowers may help with weight loss and anxiety. The roots are often used for improving digestion and healing wounds. Because of its wide range of benefits, Nelumbo nucifera is considered a valuable natural remedy with few side effects. However, most of the studies have been done in labs or on animals, more clinical studies on humans are needed to confirm its safety and effectiveness, scientists should focus on identifying the active compounds, understanding how they work in the body, and developing safe herbal medicines based on this plant, Overall, Nelumbo nucifera is truly a medicinal treasure of nature with great potential for developing new and effective natural drugs.

Keywords: Nelumbo nucifera, sacred lotus, antioxidant, anti-inflammatory, antidiabetic, cardioprotective, traditional medicine.

Abstract-59

"FROM AYURVEDA TO MODERN MEDICINE: A COMPREHENSIVE INSIGHT INTO AEGLE MARMELOS"

Soumili Gorai 1*, Debajit Dewan 1, Soma Jana 1, Biplab Debnath 1

1 Department of Pharmaceutical Technology, Bharat Technology, Uluberia, Howrah, West Bengal- 711316, India.

ABSTRACT

Introduction- Aegle marmelos (Bael) holds great significance in Indian medicinal and spiritual traditions. Various parts of the plant—fruit, leaves, and bark—have long been utilized to treat ailments such as jaundice, asthma, diarrhea, and wounds. Its wide range of therapeutic applications highlights the medicinal potential of the whole plant.

Methods: Information was collected and compiled from traditional Ayurvedic texts and recent scientific studies focusing on the phytochemical constituents and pharmacological activities of Aegle marmelos. Literature databases and ethnobotanical sources were analyzed to correlate traditional uses with modern pharmacological evidence.

Results: Phytochemical analyses reveal the presence of bioactive compounds including flavonoids, alkaloids, tannins, carotenoids, phenolic acids, and essential oils. These constituents contribute to Aegle marmelos's diverse pharmacological effects such as antibacterial, anti-inflammatory, antioxidant, and anti-ulcer activities. The edible fruit is rich in vitamins and minerals, the pulp has a soothing impact on the stomach, and the leaves and bark support systemic healing.

Discussion/Conclusion: The review establishes Aegle marmelos as a plant of significant medicinal value, bridging its traditional importance with validated modern pharmacological uses. Its therapeutic potential in managing disorders like asthma, hypertension, jaundice, anemia, and gastrointestinal disturbances underscores the necessity for further clinical evaluation and formulation development.

Keywords: Aegle marmelos, Bael, traditional medicine, phytoconstituents.

Abstract-60

"UNDERSTANDING THE FUNCTIONS OF NEURO-NUTRACEUTICALS IN NEURODEGENERATION: A STUDY ON ZEBRAFISH"

Sribas Rakshit [1], Dr. S M Firdous [2], Suprodip Mandal [3], Shaileyee Das [4]*

1 M. Pharm, 2nd Year, Department of Pharmacognosy, Bharat Technology, Howrah, West Bengal – 711316

2 Professor, HOD, 3 Associate Professor4 *Associate Professor, HOD, Department of Pharmacognosy, Bharat Technology, Howrah,West Bengal – 711316, Email- drshaileyeedas@gmail.com

ABSTRACT

Introduction: Neurodegenerative disease indicates a chronic disease, which usually associated with mutated genes, accumulation of abnormal proteins, increased reactive oxygen species (ROS) or progressive loss of functions of neurons (nerve cells) in the brain. Cadmium is a worldwide environmental pollutant that causes serious threats to humans and the ecosystem by affecting the central nervous system. Morin is a promising flavanol which improves the functions of the brain. On the other hand, zebrafish is an interesting model organism that can offer new opportunities to study the beneficial effects of morin on neurodegenerative diseases caused by cadmium.

Methodology: In this study, zebrafish were used as a model organism to investigate the beneficial effects of morin on cadmium-induced neurodegenerative diseases. Several behavioral tests such as the Open Field test, Mirror Biting test, and Novel Tank Diving test were performed to determine the efficacy of morin.

Results: The behavioral tests conducted on zebrafish provided significant insights into the effects of morin on brain function. The tests revealed observable improvements in the behavioral performance of zebrafish treated with morin when compared to those exposed only to cadmium.

Discussion: The findings of this study suggest that morin, a natural flavanol, plays a protective role against cadmium-induced neurodegenerative effects. The improved performance of zebrafish in various behavioral tests indicates that morin helps in restoring normal brain function. These results support the potential use of morin as a neuroprotective nutraceutical in the treatment of neurodegenerative diseases such as Alzheimer's and Parkinson's diseases caused by environmental pollutants like cadmium.

Keywords: Neurodegeneration, morin, zebrafish, Alzheimer's disease

Abstract-61

"IMPACT OF ABIOTIC STRESS ON ANTHOCYANIN PRODUCTION: INVESTIGATING THE EFFECTS OF TOXICITY"

Amrita Jana[1], Surashree Samanta[2], Dr. Shaileyee Das[3]*

[1] M. Pharm, 2nd Year, Department of Pharmacognosy, Bharat Technology, Uluberia, Howrah-711316

[2] M. Pharm, 2nd Year, Department of Pharmacognosy, Bharat Technology, Uluberia, Howrah-711316

[3] *Associate Professor, HOD, Department of Pharmacognosy, Bharat Technology, Uluberia, Howrah-711316

Email: - drshaileyeedas@gmail.com

ABSTRACT

Introduction- A biotic stresses such as heat, drought, salinity, low temperature, and toxicity adversely affect plant growth and crop productivity. Their increasing intensity, driven by climate change and industrialization, disrupts normal plant metabolism. Plants counter these stresses by accumulating secondary metabolites like anthocyanins, flavonoids, terpenoids that protect against oxidative damage.

Methodology: This study examines the effects of toxicity stress on anthocyanin production in the Asteraceae family through a literature-based analysis. Research data related to the phenylpropanoid and mevalonate pathways were reviewed to understand the biochemical mechanisms influencing anthocyanin and terpenoid synthesis during toxic exposure.

Results: Findings indicate that moderate toxicity enhances anthocyanin accumulation, contributing to improved stress tolerance and antioxidative defense. In contrast, severe toxicity disrupts growth and reduces metabolite synthesis. The Asteraceae family demonstrates adaptive responses, where anthocyanins play a key role in maintaining cellular homeostasis under stress conditions.

Discussion: Toxicity-induced abiotic stress significantly modulates secondary metabolite pathways in plants. The enhanced production of anthocyanins, flavonoids, and terpenoids acts as a protective mechanism against oxidative injury. Understanding these metabolic responses can aid in developing stress-resilient plant varieties. Further experimental studies are needed to quantify anthocyanin variations and identify genetic factors governing stress adaptation.

Keywords: Abiotic stress, Anthocyanin, Toxicity.

Abstract-62

"STUDY OF MOSQUITO REPELLENT ACTIVITY OF ACALYPHA INDICA LEAF"

Suman Mandal [1], Lopamudra Chakravarty [2], Shaileyee Das [1]

1 Department of Pharmaceutical Technology, Bharat Technology, Uluberia, Howrah, West Bengal- 711316, India.

2 Department of Pharmaceutical Technology, Calcutta Institute of Pharmaceutical Technology & amp; A.H.S, Uluberia, Howrah, West Bengal- 711316, India.

ABSTRACT

Introduction: In 2021, India reported over 160,000 cases of mosquito-borne diseases, posing a major public health concern. Mosquitoes belonging to the Anopheles, Culex, and Aedes genera transmit several viral and parasitic infections such as malaria, dengue, and Japanese encephalitis. Since there is no effective vaccine for malaria, vector control remains the primary preventive strategy. Although conventional synthetic repellents are effective, they are associated with adverse health effects and environmental hazards.

Research: The increasing demand for eco-friendly and sustainable mosquito control methods has driven the exploration of plant-based repellents. Acalypha indica is known for its diverse phytochemical composition, which may possess repellent potential. This research aims to investigate the mosquito-repelling efficacy of Acalypha indica and identify its active phytoconstituents responsible for the activity.

Methodology: Gas Chromatography–Mass Spectrometry (GC-MS) analysis was conducted on Acalypha indica extract to identify bioactive compounds. The analysis revealed the presence of several phytoconstituents possessing heterocyclic rings and functional groups similar to those found in established mosquito repellents. Experimental assessments were performed to evaluate the mosquito-repelling efficacy of the plant extract.

Discussion/Results: The GC-MS results confirmed that Acalypha indica contains multiple compounds with potential mosquito-repellent properties. The plant's natural phytochemicals demonstrated notable activity against common vector species, indicating its potential as a viable botanical alternative to synthetic repellents.

Keywords: Mosquito-repellent, Acalypha indica, phytochemicals, GC-MS analysis

Abstract-63

"BIOMEDICAL APPLICATION OF MXENE BASED HYDROGELS ON WOUND HEALING"

Avirup Mukherjee [1]* , Ahana Hazra [1], , Mithun Bhowmick [1]
1 Bengal College of Pharmaceutical Sciences and Research
Bidhannagar,Durgapur-713212, West Bengal , India
Email : Avirup.dgp2k24@gmail.com

ABSTRACT

Introduction: MXene-based hydrogels, which combine the special qualities of 2D MXenes with the adaptability of hydrogels, represent a major breakthrough in biomedical science. These hydrogels can be used in tissue engineering, antibacterial activity, medication delivery, and wound healing. MXenes improve the mechanical characteristics, conductivity, and environmental responsiveness of hydrogels. They have demonstrated potential in delivering medications, acting as antimicrobial agents, and speeding up wound healing. They might also be used in cancer treatments. Biocompatibility and large-scale production optimization . The biggest organ in the human body, the skin serves as the body's first line of defense against microbial invasion, chemical harm, and radiation exposure. In the medical field, delayed wound healing following an accident is a major problem that can lead to major health problems. A variety of wound dressings, such as hydrogels, gelatin sponges, and bandages, have been created to encourage faster healing. Additionally, some contain bioactive substances like growth hormones, antibiotics, and nanoparticles

KEYWORDS : Mxene , Hydrogels , Biomedical Application, Wound Healing

Abstract-64

"FORMULATION & EVALUATION OF HERBAL OINTMENT CONTAINING NEEM & TURMERIC EXTRACT"

Saptak Dhank [1] , Mr. Krishnendu Roy [2], Dr. Shaileyee Das [3]*
1 M. Pharm 2 nd year, Bharat Technology, Uluberia, 2 Assistant professor, Calcutta Institute of Pharmaceutical Technology &; AHS, Uluberia, Howrah,
3* Associate Professor, HOD, Bharat Technology, Uluberia, Howrah, West Bengal, 711316, India.
Email: - drshaileyeedas@gmail.com

ABSTRACT

Introduction: In this modern medicinal system mostly, people show interested on Herbal medicine & increase their used rapidly. Herbal medicine which derived from plant or plant parts (leaf, stem, bark, gum, flower, fruit) have rich source of bioactive compounds that used in traditional & modern medicinal system. In present study give attention on Formulation & Evaluation of Herbal ointment containing neem & turmeric extract. For using Maceration method at first Ethanolic extract of both Neem & Turmeric were prepared, then Herbal extract included into by levigation method. Evaluation of Herbal ointment for check physicochemical parameters like – Colour, Odour, pH, Spreadability, Extrudability, Consistency, Solubility & Washability. Then conduct Stability studies under different temperature produced no significantly changes in irritancy or spread ability, so confirming the formulation have strong potency. at least this Herbal ointment is ready to use as simple dosage form in medicinal system. In this Herbal ointment have medicinal value like antibacterial, anti-inflammatory, antioxidant, antiviral, anticancer, antifungal activity that's work quickly. This product used widely because it has no side effect or less side effects.

Keywords: Maceration, Levigation, Extrudability, Spreadability.

Abstract-65

"ANTIBIOTIC RESISTANCE: A DEADLY GLOBAL THREAT"

Souvik Pradhan* Dr. Purna Chandra Pal
Department of Pharmaceutical Technology, Brainware University, 398, Ramkrishnapur Road, Kolkata 700125.
*Presenting Author's Mail: souvikpradhan2005@gmail.com

ABSTRACT

Introduction: Antibiotic resistance (AR) has emerged as one of the most critical global health crises, driven by the misuse of antibiotics and the rapid adaptability of microorganisms. The continuous evolution of resistance—mediated by mutations, horizontal gene transfer, and mobile genetic elements—has undermined the effectiveness of nearly all antibiotic classes. Methods: This review synthesizes findings from global epidemiological databases, peer- reviewed studies, and surveillance reports published between 2000 and 2025. Data were collected to assess the global burden of antimicrobial resistance (AMR).

Results: An estimated 4.95 million deaths in 2019 were associated with bacterial AMR, with 1.27 million directly attributable to resistant infections. The highest mortality burdens were observed in sub-Saharan Africa and South Asia, particularly in India (~297,000 attributable deaths), China (~145,000), Nigeria (~64,500), and Pakistan (~59,200). In contrast, higher-income regions such as the United States (>35,000 deaths annually) and the European Union/EEA (~133,000 deaths in 2019) reported predominantly hospital-acquired cases. Emerging studies also highlight the epigenetic mechanisms—notably DNA methylation of adenines and cytosines—that modulate mutation rates and phenotypic heterogeneity, enabling transient resistance. Furthermore, bacterial persistence phenotypes and environmental reservoirs have been identified as key facilitators of antibiotic resistance evolution and transmission.

Discussion: The growing prevalence of antibiotic resistance demands integrated global surveillance and innovative therapeutic strategies. Understanding both genetic and epigenetic resistance mechanisms can inform novel drug discovery and diagnostic tools. Environmental control measures, antimicrobial stewardship, and international policy coordination are essential to mitigate this escalating threat and preserve the efficacy of existing antibiotics.

Keywords: Antibiotic resistance (AR), Antimicrobial resistance (AMR), Global health crisis, Resistant infections, Antimicrobial stewardship.

Abstract-66

"INTEGRATIVE: EFFECT OF MODERN EXTRACTION TECHNIQUES ON PLANT SECONDARY METABOLITES"

Rinita Barai, Dr. Ranabir Sahu
Department of Pharmaceutical Technology, University of North Bengal, Darjeeling-West Bengal- 734013

ABSTRACT

Introduction: Plant secondary metabolites (PSMs) are a major source of bioactive compounds with significant applications in pharmaceuticals, nutraceuticals, food additives, and other industries. These metabolites possess antioxidant, therapeutic, and disease-preventive properties, making them a focal point in modern research aimed at discovering new and unique bioactive molecules. However, the extraction of these compounds presents various challenges that require careful selection of suitable techniques based on plant species and chemical classes. Traditionally used extraction methods are often time-consuming, solvent- intensive, and environmentally taxing. In response to the growing demand for sustainable and efficient extraction, novel green extraction technologies have emerged. Techniques such as supercritical fluid extraction, microwave-assisted extraction, ultrasound-assisted extraction, pressurized liquid extraction, instant controlled pressure drop, and negative-pressure cavitation have demonstrated improved yields, reduced solvent usage, and enhanced process sustainability. These advanced methods align with eco-friendly principles and support the circular economy through zero-waste valorization of plant biomass. Additionally, integrating phytochemical extraction with biorefinery approaches enhances resource efficiency and promotes holistic utilization of plant materials. A thorough evaluation of literature and technique selection is essential to optimize extraction for both phytochemical research and industrial applications. This provides an in-depth overview of current extraction, screening, and analytical strategies for plant secondary metabolites, with a focus on improving extraction efficiency and environmental sustainability. By critically analyzing emerging technological innovations, sustainable solvents, and green methodologies, it offers valuable insights into advancing natural product research and maximizing the therapeutic potential of plant-derived compounds.

Keywords: Plant secondary metabolites, phytochemicals, green extraction, ultrasound-assisted extraction, supercritical fluid extraction, microwave-assisted extraction.

Abstract-67

"FORMULATION OF GREEN SYNTHESIS OF SILVER NANOPARTICLES FROM MACROPANAX UNDULATUS LEAF EXTRACT AND ITS CHARACTERIZATION, BIOLOGICAL EVALUATIONS, AND PROTEIN AND DNA INTERACTIONS"

Ranabir Sahu*, Ankrita Thapa
Department of Pharmaceutical Technology, University of North Bengal, Darjeeling 734013, West Bengal, India
Corresponding author email: ranabirsahu@nbu.ac.in

ABSTRACT

Introduction: Green silver nanoparticle synthesis has proven to be an efficient, cost-effective, and eco-friendly method in modern research. The current work used Macropanax undulatus aqueous extract to synthesize silver nanoparticles (AgNPs). The synthesized AgNPs were characterized by UV-Vis spectroscopy, Dynamic light scattering (DLS), Fourier transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), X-ray powder diffraction (XRD), transmission electron microscopy (TEM), and energy-dispersive X-ray analysis (EDX). Further antioxidant, anti-inflammatory, antidiabetic, cytotoxicity, and antimicrobial activities were evaluated to evaluate pharmacological properties.In response to surface plasmonic resonance, MU-AgNPs' characteristic absorption peak at 442 nm (λmax) was visible in UV-Vis spectroscopy. The FT-IR confirmed functional groups of the extract and MU-AgNPs. The particle size of *124.46 nm*was determined through DLS. The SEM and TEM confirmed further spherical shape and size. A Zeta potential study was carried out to assess the stability of the silver nanoparticles. XRD confirmed the crystalline nature of MU-AgNPs. EDX obtained confirmation of the presence of silver. A protein corona (PC) forms when nanoparticles come into contact with proteins upon introduction into the body. Protein and DNA binding studies were carried out to investigate this function further.MU-AgNPs showed potent antioxidant, anti-inflammatory, antidiabetic, cytotoxicity, and antimicrobial activities. The results concluded that MU-AgNPs might be a powerful therapeutic agent for novel drug delivery.

Key words: *Macropanax undulatus*; green synthesis; silver nanoparticles; pharmacological properties; Protein and DNA binding.

Abstract- 68

"MODERN ANTIDEPRESSANTS: HOW NEW DRUGS ARE TRANSFORMING DEPRESSION TREATMENT"

Md Afiat Daniyal
Radiant Institute of Pharmaceutical Sciences, Fatma Nagar Salki Tengramari, Kishanganj, Bihar-0855107
Email: - mdafiatdaniyal894@gmail.com

ABSTRACT

Introduction: Depression affects over 300 million individuals worldwide and remains one of the leading causes sof disability. Although conventional antidepressants such as tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), and monoamine oxidase inhibitors (MAOIs) have been used for decades, their delayed onset of action and limited efficacy in treatment-resistant cases highlight the need for innovation.

Recent advances in neuropharmacology have led to the development of novel, rapid-acting antidepressants that target new pathways beyond the traditional monoamine hypothesis. Agents such as ketamine/esketamine act via NMDA receptor antagonism, stimulating AMPA–mTOR–BDNF signaling and promoting rapid synaptic plasticity, while brexanolone and zuranolone modulate GABA-A receptors, restoring inhibitory–excitatory balance in the brain. These mechanisms result in significantly faster symptom relief, particularly in treatment-resistant and postpartum depression.

This shift from neurotransmitter modulation to synaptic and neuroplasticity enhancement represents a major transformation in modern depression therapy. Pharmacists play a crucial role in patient counseling, monitoring, and ensuring the rational use of these innovative agents. As these trends evolve, they hold great promise for improving global mental health outcomes through faster, more effective, and personalized depression treatment.

Keywords: Depression, Ketamine, Brexanolone, Neuroplasticity, Rapid-acting antidepressants, Pharmacist role

Abstract-69

"TARGETING DNA REPAIR TO COMBAT CANCER CHEMORESISTANCE"

Khushkadam Usman
Radiant Institute of Pharmaceutical Sciences, Kishanganj
Email:-usmankne123@gmail.com

ABSTRACT

Introduction: Chemoresistance is a major challenge in cancer therapy, often resulting in treatment failure and tumor relapse. One of the key mechanisms by which cancer cells acquire resistance is through the activation of DNA repair pathways. These pathways repair chemotherapy-induced DNA damage, allowing tumor cells to survive and proliferate. Targeting DNA repair mechanisms, therefore, represents a promising approach to overcome resistance and enhance therapeutic efficacy. This study highlights the role of DNA repair pathways in chemoresistance and discusses potential molecular targets, including PARP, ATR, and DNA-PK, for developing effective combination therapies.

Keywords: Chemoresistance ,chemotherapy, DNA, tumor cells, PARP,ATR etc

Abstract-70

"Abstract Effects of ultrasound-assisted extraction of caffeine and polyphenols from green tea leaves with high-performance thin-layer chromatography"

Tarun Kumar Dua
Department of Pharmaceutical Technology, University of North Bengal, Rajarammohunpur, Darjeeling 734013, West Bengal India
E-mail: tarunkdua@nbu.ac.in

ABSTRACT

Introduction: With a high caffeine and polyphenol content, tea is the most widely used daily beverage in the world.This work used high-performance thin-layer chromatography and a 2^3-full factorial design to examine and optimise the effects of ultrasonic-assisted extraction and measurement of caffeine and polyphenols from green tea. Three factors were adjusted to optimise the amount of caffeine and polyphenols extracted by ultrasound: temperature (20–40 °C), ultrasonication period (10–30 min), and crude drug-to-solvent ratio (1:10–1:5). The following were the ideal circumstances that the tea extraction model produced: The extractive value was 16.8% at a temperature of 39.9°C and a duration of 29.9 minutes, with a crude drug-to-solvent ratio of 0.199 g/ml. Sonication, which produces a larger extractive yield and a significant concentration of caffeine and polyphenols than the conventional technique, with a smaller amount of solvent and faster analytical periods, may simplify this process. The outcome of high-performance thin-layer chromatography study demonstrates a substantial positive association between extractive value and caffeine and polyphenol contents.

Keywords: Caffeine, extraction, optimisation, polyphenols, tea.

Abstract-71

"Medicinal plants used by tribal people of Darjeeling, West Bengal"

Partha Pratim Maiti*, Ankrita Thapa, Ranabir Sahu

Department of Pharmaceutical Technology, University of North Bengal, Darjeeling 734013, West Bengal, India

ABSTRACT

Introduction: The Eastern Himalayas' diverse range of indigenous plant and animal species has greatly influenced its applied knowledge and range of uses for the local population. The wide range of uses for these native plants has influenced the cultural and social fabric of the local populace over time. Additionally, the natives still frequently use these plants to treat illnesses. A rich history of traditional medical practices and a variety of ethnomedicinal plants define the Darjeeling Himalayan region. In addition to using medicinal plants to treat minor illnesses like headaches, stomach-aches, food poisoning, wounds, and diarrhoea, the locals also frequently utilize them to treat more serious conditions including renal difficulties, fractures, diabetes, and hypertension. Anti-venom and anti-cancer medications can also be found in some medicinal plants. The depressing trend of synthetic drug prices in medicine has sparked a rush to identify plant-based substitutes that might have fewer or less severe side effects than synthetic ones. This review offers comprehensive information on the various pharmacological investigations with scientific confirmation as well as the ethnomedicinal plants used locally in the Darjeeling district. Additionally, this review has documented the many phytochemicals that are present in these plants, which is a first.

Keywords: Darjeeling; Folklore; Medicinal plants; Pharmacological properties; Phytoconstituents.

Abstract-72

"Green synthesis of zinc oxide nanoparticles by *Leucas lavandulifolia* leaf aqueous extract "

Swapan Kumar Pathak*, Gouranga Nandi

Department of Pharmaceutical Technology, University of North Bengal, Raja Rammohunpur, Dist.- Darjeeling, West Bengal, Pin 734013

*Presenting author: **Swapan Kumar Pathak**

ABSTRACT

Introduction: The aim of the present study was to synthesise zinc oxide nanoparticles using aqueous extract of *Leucas lavandulifolia* leaves. At first, the leaves were dried and ground into a fine powder. 5gm of the powder was added to 100 ml of distilled water and heated at 60°C in a water bath for 1hour with continuous stirring in a magnetic stirrer. The mixture was then filtered,and the filtrate (extract) was collected. 10 ml of extract was added to 90 ml of 0.1 M aqueous solution of $ZnNO_3$, and the mixture was heated at 60 °C for 30 minutes with continuous magnetic stirring. The colour was found to change to white; if not, then the pH was adjusted with NaOH (1M) solution up to 8. The mixture was stirred for another 1 hour, and centrifuged at 20000 rpm for 5 mins. The precipitate was finally collected and freeze-dried.

Abstract-73

"Mental Health Awareness Among Young Adults: Understanding Challenges and Promoting Wellbeing."

Nurani Jahan
Radiant Institute of Pharmaceutical Sciences

ABSTRACT

Introduction: Mental health is a crucial component of overall wellbeing, yet awareness among young adults remains limited. This study explores the prevalence of stress, anxiety, and depression in the younger population and evaluates the effectiveness of awareness programs in improving mental health literacy. Using surveys and focus group discussions, data was collected from undergraduate and postgraduate students. Results indicate a significant gap in knowledge regarding mental health resources, stigma associated with seeking help, and coping strategies. The findings highlight the need for targeted educational interventions and mental health promotion initiatives to foster resilience and early intervention among young adults. This poster emphasizes strategies for increasing awareness, reducing stigma, and supporting mental wellbeing in academic settings.

Abstract-74

"Leveraging Blockchain Technology to Overcome Challenges in Pharmacovigilance "

Mohammad Mamdoohul Haque
Department of Pharmacology, Radiant Institute of Pharmaceutical Sciences, Kishanganj, Bihar, India

ABSTRACT

Introduction: Pharmacovigilance (PV) ensures the safe use of medicines by identifying, assessing, and preventing adverse drug reactions (ADRs). However, traditional PV systems face several limitations, including fragmented data, underreporting (only 6–10% of ADRs globally reported to WHO), and delayed signal detection due to manual and centralised data management.

Objective: This study aims to explore how blockchain technology can address these challenges by ensuringtransparency, data integrity, and real-time sharing among healthcare stakeholders.

Methods: A review-based approach was undertaken using literature from 2017–2024 across PubMed, IEEEXplore, and WHO databases. Studies focusing on blockchain applications in pharmacovigilance, ADR tracking, and regulatory communication were analysed.

Results: Blockchain provides a decentralised and tamper-proof data-sharing system where each ADR reportis securely stored and accessible to authorised users.

Smart contracts enable automated ADR verification and submission to regulatory authorities, reducing reporting delays by up to 40%. Blockchain integration with national PV systems like PvPI(India) or EudraVigilance (EU) could enhance transparency, interoperability, and patient trust.

Conclusion: Blockchain can revolutionize pharmacovigilance by creating a transparent, patient-centred, andglobally connected safety monitoring framework. Future implementation must focus on regulatory standardization, scalability, and collaboration between technology providers and health authorities.

Keywords: Blockchain, Pharmacovigilance, ADR, Data Integrity, Drug Safety, Transparency.

Abstract-75

"Environmental Stress Effects on Protein-Stabilised Pickering Emulsions"

Ayan Ash
ayanash5362@gmail.com

ABSTRACT

Introduction: Protein-stabilised Pickering emulsions represent an innovative type of colloidal system known for their superior stability, biodegradability, and suitability across food, cosmetic, andpharmaceutical formulations. Unlike conventional emulsions stabilised by surfactants, these systems utilize solid protein particles that adsorb at the oil-water interface to create a durablephysical barrier. However, their structural integrity and functional performance are stronglyinfluenced by environmental stresses such as pH, temperature, ionic strength, and mechanicalforces. To understand how these environmental factors affect the physicochemical properties,interfacial arrangement, and long-term stability of protein-based Pickering emulsions. Changesin pH and ionic concentration can alter protein charge, solubility, and aggregation behavior,thereby influencing droplet formation and stabilization. Temperature variations may lead toprotein unfolding or denaturation, impacting interfacial elasticity and emulsion consistency.
Additionally, oxidative conditions and extended storage can further destabilize emulsions bypromoting coalescence or phase separation. Its includes emerging strategies to improveenvironmental resilience through protein modification, nanoparticle engineering, and the use ofco-stabilizers. Overall, this review highlights the critical role of environmental control indesigning robust, sustainable, and high-performance protein-stabilised Pickering emulsions formodern applications in controlled release, food preservation, and drug delivery systems.

Keywords: Pickering Emulsion ,Environmental Stress,pH and Ionic Strength,EmulsionStability,Protein Denaturation.

Abstract-76

"Exploring the Quinazoline Scaffold: Chemical Modifications and Antidiabetic Potential "

Subarna Mahanti 1 , Saptarshi Samajdar 1*
DepartmentofPharmaceuticalTechnology, BrainwareUniversity, Barasat, Kolkata

ABSTRACT

Introduction: Diabetes poses a global metabolic challenge that requires innovative treatments. Newmedicinal chemistry research suggests quinazoline derivatives can be flexible building blocksfor antidiabetic medicines. Quinazolinone scaffold (1,3-benzodiazine) reactive sites includeC-2, C-3, C-6, and C-7. Modifying the structure in several ways can boost biological activity.By combining pharmacophoric moieties including thiazolidinedione, sulphonamide,benzimidazole, and chalcone groups, analogues inhibit α-glucosidase, PTP1B, and DPP-IVwhile activating PPAR-γ. Key electron-donating or electron-withdrawing groups alterlipophilicity, hydrogen bonding, and receptor affinity.
We found quinazoline analogues with good pharmacokinetics using SAR, molecular docking,and ADMET predictions. Reviewing quinazoline analogues helps us comprehend theirdiabetes therapeutic potential and build more targeted antidiabetic drugs.

Keywords: Benzimidazole, Chalcone, Diabetes, Quinazoline, Sulphonamide, Thiazolidinedione.

Abstract-77

"Formulation and Evaluation of an Antifungal Drug Loaded Polymer-Based OphthalmicGel."

Piu Jana, Gouranga Nandi*

Department of Pharmaceutical Technology, University of North Bengal, Raja Rammohunpur, Dist.. – Darjeeling, West Bengal, India, Pin 734013.

ABSTRACT

Introduction: The present study aimed to develop and characterize an ophthalmic gel-forming solutioncontaining an antifungal drug to enhance ocular residence time and therapeutic efficacy.

Natural mucilage obtained from a tree belongs to Fabaceae family was utilized as a gelling agent in combination with carboxymethyl cellulose as a viscosifying agent. Benzalkonium chloride served as a preservative to maintain sterility and formulation stability.

Methods: The antifungal drug nanoparticle was prepared by antisolvent method. The preparedformulations were sterilized by autoclaving at 121°C for 15 minutes. They were evaluated forvisual appearance, clarity, pH, drug content, in vitro diffusion, swelling behaviour, andmicrobiological studies were performed by agar well diffusion method. Female New Zealandwhite rabbits were used for in vivo safety and ocular irritation studies in accordance withOECD guidelines.

Results and Discussions: The optimised formulation exhibited desirable physicochemical properties with satisfactoryclarity, pH ranging from 6.8±0.2, obtained particle size 197.49 nm with -6.4 mV zetapotential. FTIR and SEM analysis confirmed drug–polymer compatibility and uniformsurface morphology. In vitro diffusion studies revealed sustained drug release over 5 hours,indicating prolonged ocular residence. The eye irritation test demonstrated that theformulation was non-irritant and safe for ocular use.

Keywords: Antifungal drug, Ophthalmic, Rabbit eye.

Abstract-78

"Overview of Diabetes Mellitus: Cause, Symptoms and Diagnosis Techniques "

Md Touhid Shekh 1*, Nitish Kumar2

Affiliation: Om Sri Sai Pharmacy College of Education, Madhubani

ABSTRACT

Introduction: Diabetes mellitus is a chronic metabolic disorder affecting million peoples worldwide. It is a metabolic disease in which high blood glucose levels (Hyperglycemia) dueto pancreas does not produce enough insulin or when the body can't effectively use the insulinit produces. The main three types of DM occur Type1, Type2 and gestational diabetes. Understanding its causes, symptoms and diagnosis techniques is crucial for effective management and prevention of complications.

Methods: This Overview study of diabetes mellitus focusing on conventional and emergingdiagnostic methods. The diagnostic techniques analysed

include: Fasting Plasma Glucose(FPG) Test, Oral Glucose Tolerance Test (OGTT), Haemoglobin A1c(HbA1c) Test, RandomPlasma Glucose, Genetic and Biomarker Testing. Early diagnosis and treatment can helpmanage diabetes and prevent complications.

Result: Diabetes involve various causes including genetics, obesity and lifestyle factors. Diabetes symptoms can develop slowly, especially in Type2 diabetes. Common symptoms arefrequent urination, excessive thirst, unexplained weight loss, and fatigue. Diabetes mellitusdiagnosis by checking your blood sugar level in a blood test. There three types of tests:

1.Fasting blood glucose test: Range less than 100-126mg/dL

2.Random blood glucose test: In range 200 or higher

Conclusion: Diabetes mellitus is a group of disease condition with various causes, symptomsand some complications. Early diagnosis and treatment are very important to understanding thedifferent types of diabetes like type1, type2 and gestational diabetes to essential for developingeffective treatment plans.

Abstract-79

"Development and Validation of an Advanced UPLC–PDA Method for Precise Quantification of Sotagliflozin in Bulk and Pharmaceutical Formulations"

Bramhajit Chatterjee 1 , Prasenjit Mondal *1

Department of Pharmaceutical Technology, Brainware University, Ramkrishnapur Rd, Barasat, Kolkata, West Bengal 700125

ABSTRACT

Introduction: The estimation of sotagliflozin in bulk and tablet dose forms was accomplished bydeveloping and validating an ultra-performance liquid chromatographic technique. A 2.1 x 50mm, 1.7-micron BEH Waters UPLC column was used to do the chromatographic separation.

The eluent was detected by UV at 225 nm using a mobile phase consisting of 70% acetonitrile and 30% OPA buffer (0.1% ortho-phosphoric acid) in isocratic mode. The approach was upheld and verified in accordance with the rules of the international conferenceon harmonization (ICH). The validation investigation confirmed the technique's accuracy anddependability. The retention time for sotagliflozin elution was 0.516 minutes. linearity wasdemonstrated in the concentration range of 10–50 µg/mL by the standard calibration curve forsotagliflozin. It was determined that the detection limit, or LOD, was 0.05 µg/mL, while thequantitation limit, or LOD, was 0.10 µg/mL. Stability was evidenced in the force degradationevaluation by the present approach. Empirical evidence has established that it is appropriateto estimate Sotagliflozin in both bulk and tablet dosage forms.

Keywords: Sotagliflozin, UPLC, Method Development, Method Validation, ICH Guidelines.

Abstract-80

"An overview of the biological activity and extraction methods for essential oil from rosemary (Rosmarinus officinalis L.) "

Neha Das, Mrinmoy Pratim Chetia, Tarun Kumar Dua

Department ofPharmaceuticalTechnology, University of NorthBengal, Rajarammohunpur, Darjeeling 734013, West Bengal, India

ABSTRACT

Introduction: The perennial plant Rosmarinus officinalis L., is well-known for its fragrant leaves and uses in cooking, decoration, and medicine. A wide variety of volatile and semi-volatile chemicals, each with some medicinal qualities, are present in the essential oil that is produced from rosemary. Despite being time-consuming and having the potential to lose volatile chemicals, traditional extraction techniques like steam distillation and hydrodistillation are still widely used. On the other hand, albeit limited by technological requirements and related costs, novel techniques such as supercritical fluid extraction with CO 2 present encouraging substitutes. Its pharmacological activities, such as antimicrobial, antioxidant, anti-inflammatory, antinociceptive, antifungal, and antitumor properties, are greatly influenced by important compounds like 1,8-cineole, camphor, p-cymene, linalool, borneol, γ-cadinene, isocarnosol, β-pinene, and α-pinene. It also has hepatoprotective properties and is thought to encourage hair growth. The many extraction methods, their yields, the main constituents, and potential therapeutic uses of rosemary essential oil are all thoroughly explained in this paper.

Keywords: Rosmarinus officinalis, essential oil, extraction.

Abstract-81

"Review on Enhalus acoroides: Carotenoid-Rich Extracts for Anti-ObesityEffects and Gut Microbiome Modulation"

Priya, Wrila Chakraborty*

Department of Pharmaceutical sciences, Jharkhand Rai University, RajaUlatu, Namkum, Ranchi-834010

ABSTRACT

Introduction: Obesity is a global health challenge characterised by excessive lipid accumulation,oxidative stress, and metabolic dysfunction. Marine plants have gained attention asnatural sources of bioactive compounds capable of modulating obesity-relatedpathways. Among them, the tropical seagrass Enhalus acoroides has emerged as a promising candidate due to its rich carotenoid composition and multifunctionalbioactivity. Evidence from in vitro, in silico, and in vivo studies demonstrates thatits carotenoids—astaxanthin, canthaxanthin, β-carotene, lutein, andfucoxanthin—possess potent antioxidant and anti-lipase properties. Extractsobtained through green techniques, including ultrasound- and microwave-assistedextraction, shows significant inhibition of pancreatic lipase and modulation of lipidmetabolism comparable to orlistat. In vivo experiments using diet-induced obesezebrafish reveal substantial reductions in body weight, total cholesterol,triglycerides, and LDL levels, with increased HDL levels. Furthermore, E.acoroides extract restores gut microbial equilibrium by normalizing the Firmicutes/Bacteroidetes ratio and enhancing microbial diversity, indicating astrong prebiotic effect. The combined antioxidant defense, lipid-lowering potential,and microbiota regulation suggest that E. acoroides acts through a multi-targetmechanism against obesity. Collectively, these findings highlight E. acoroides as apotent marine-derived nutraceutical with potential for integration into functionalfood and therapeutic strategies aimed at preventing or managing obesity andrelated metabolic disorders.

Keywords: Enhalus acoroides; anti-obesity; carotenoids; lipase inhibition; lipid metabolism; gut microbiome.

Abstract-82

"FUTURE ASPECTS OF NATURAL POLYMER"

Saikat Sahoo[1],
Suprodip Mandal[2],
Dr. Shaileyee Das[3]

[1] M. Pharm, 2nd Year, Department of Pharmacognosy , Bharat Technology ,Uluberia, Howrah-711316
[2] Associate Professor, Department of Pharmacognosy, Bharat Technology ,Uluberia, Howrah-711316
[3*] Associate Professor, HOD, Department of Pharmacognosy, Bharat Technology ,Uluberia, Howrah-711316

ABSTRACT

Introduction: Natural polymers can be obtained from plant, animal or microorganism. They offer a renewable, biodegradable, and environmentally friendly solution. Some examples are cellulose, chitosan, pullulan, alginate and gelatin, which can presently substitute toxic plastics in necessary use cases such for food packaging, medical materials, wound stealing and water treatment.

Methodology: In this work, researchers developed materials from natural polymers through green methodologies if appropriate, such as solvent casting and layer-by-layer method to produce films, membranes, coatings, microneedles and patches without toxic chemicals. This also appropriately correlated with green chemistry principles effectively while also supporting sustainability.

Results: The materials displayed strong, safe and biodegradable characteristics for drug delivery, food storage, and water treatment, and in select cases, exhibited antibacterial and antioxidant activity in their intended marketplace use cases.

Discussion: Natural natural polymers provide an opportunity for developing sustainable materials in the future and mitigating pollution through sustainable use in overall support of the 2030 Sustainable Development Goals and the zero waste economy concept. The use of agricultural waste, along with or more natural materials is also expected to provide the opportunity to build a greener and healthier world.

Keywords: Natural polymers, Green chemistry, Biodegradability, Sustainability, Eco-friendly materials

Abstract-83

"CHILD MALNUTRITION PREVENTION"

Jashwant Kumar Singh*, Ms. Manisha Agrahari
Email: singhjashwantkumar508@gmail.com
Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: Child malnutrition remains one of the most pressing global public health challenges, affecting physical growth, cognitive development, and overall survival of children under five. Despite significant progress in recent decades, millions of children continue to suffer from undernutrition, micronutrient deficiencies, and stunting, particularly in low- and middle-income countries. This paper explores strategies for preventing child malnutrition through a multisectoral approach that integrates health care, nutrition education, food security, water and sanitation, and maternal empowerment. Evidence suggests that early interventions—such as exclusive breastfeeding, complementary feeding practices, and access to nutrient-rich foods—play a pivotal role in reducing malnutrition rates. Furthermore, community-based nutrition programs and policy frameworks that address poverty, inequality, and access to healthcare are essential for sustainable impact. Preventing child malnutrition requires collaboration between governments, non-governmental organizations, and communities to create environments that support optimal child growth and development.

Abstract-84

"HEALTHY EATING "

Pinki kumari*, Ms. Shamshun Nihar
Email: pinkirpkyp20@gmail.com
Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: Healthy eating is fundamental to maintaining overall well-being, preventing chronic diseases, and promoting optimal physical and mental health. A balanced diet—rich in fruits, vegetables, whole grains, lean proteins, and healthy fats—provides essential nutrients needed for growth, energy, and immune function. However, modern lifestyles, urbanization, and the widespread availability of processed foods have led to poor dietary habits and rising rates of obesity, diabetes, and heart disease. This paper examines the importance of adopting healthy eating patterns, the role of nutrition education, and strategies to encourage healthier food choices at individual and community levels. Promoting healthy eating through policy interventions, public awareness campaigns, and school-based programs can significantly improve population health and contribute to sustainable development.

Abstract-85

"DAILY ROUTINE"

Safak Naz*, Ms. Arpan Ghosh

Email: safaknaz8002@gmail.com

Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: A daily routine plays a vital role in maintaining balance, productivity, and overall well-being in everyday life. Establishing consistent habits helps individuals manage time effectively, reduce stress, and enhance both physical and mental health. This paper explores the significance of structured daily routines in promoting discipline, improving efficiency, and supporting personal development. Regular activities such as adequate sleep, balanced meals, exercise, study or work schedules, and leisure time contribute to a healthier and more organized lifestyle. Moreover, maintaining a routine fosters a sense of stability and purpose, which is essential for long-term success and happiness. Developing positive daily habits can lead to improved focus, better decision-making, and overall life satisfaction.

Abstract-86

"ABSTRACT EFFECTS OF ULTRASOUND-ASSISTED EXTRACTION OF CAFFEINE AND POLYPHENOLS FROM GREEN TEA LEAVES WITH HIGH-PERFORMANCE THIN-LAYER CHROMATOGRAPHY "

Pinki kumari*, Ms. Shamshun Nihar

Email: pinkirpkyp20@gmail.com

Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: Healthy eating is essential for maintaining physical health, mental well-being, and overall quality of life. It involves consuming a balanced diet that includes fruits, vegetables, whole grains, lean proteins, and adequate water, while limiting processed foods, sugar, and unhealthy fats. Developing healthy eating habits can prevent lifestyle-related diseases such as obesity, diabetes, and heart disease. This paper discusses the importance of nutrition awareness, the benefits of balanced meals, and strategies to promote healthy eating among individuals and communities. Encouraging proper dietary practices from an early age can lead to lifelong health and sustainable well-being.

Abstract-87

"HYGIENE"

UMM E KULSHOOM*, Ms. Manisha Agrahari
Email: kulshoom401@gmail.com
Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: Hygiene is more than soap and water; it is the invisible architecture that sustains human dignity, health, and order. It exists at the crossroads of biology and morality — a practice born of necessity that evolved into a symbol of civility. Cleanliness, in its truest sense, is both physical and spiritual: it protects the body from decay and the mind from chaos. From the meticulous rituals of ancient cultures to the sterile precision of modern medicine, hygiene reflects humanity's perpetual desire to separate purity from impurity, control from disorder. It is an act of respect — for oneself, for others, and for the spaces we share. Yet, hygiene also exposes inequality. Access to clean water, sanitation, and healthcare defines the line between privilege and neglect. In this sense, hygiene becomes not just a personal duty, but a collective responsibility — a silent agreement that one person's cleanliness safeguards another's life. In the end, hygiene is not only about the absence of dirt, but the presence of care. It is the quiet discipline that allows societies to flourish, unseen yet essential — the art of keeping life livable.

Abstract-88

"TIPS TO SLEEP BETTER "

Shepali Kumari *, Ms. Manisha Agrahari
Email: sipalikumariyadav@gmail.com
Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: Sleep is not commanded; it is invited. It comes when the mind loosens its grip on the day and the body remembers the rhythm of rest. To sleep better is not merely to close one's eyes, but to unburden oneself — to surrender control in a world that glorifies constant motion.

True rest begins where noise ends — not just the sound around us, but the noise within. The best "tips" for sleep are not mechanical tricks but acts of release: turning off the light of worry, softening the edges of thought, and allowing silence to become a gentle companion.

The body craves routine as the tides crave the moon. Sleep honors those who honor rhythm — those who rise and rest in harmony with time. It is a quiet dialogue between the seen and the unseen, the conscious and the dreaming self.

To sleep better, one must remember that sleep is not an interruption of life, but its restoration. It is the night's way of teaching us that healing begins when striving ends.

Abstract-89

"LIFE-CHANGING BENEFITS OF REGULAR EXCERCISE"

Sanjana Kumari *, Mr. Saidur Rahman
Email: sanjanas60001@gmail.com
Radiant Institute of Nursing & Paramedical Sciences

ABSTRACT

Introduction: Exercise is more than movement — it is a conversation between the body and the will. Each heartbeat is a declaration of persistence; each breath, a quiet reminder of life's rhythm. To move regularly is to remind the body that it was made not just to exist, but to *act*.

The true benefits of regular exercise extend far beyond muscle or measure. It reshapes not only the form, but the self — teaching discipline through repetition, courage through strain, and peace through motion. The body becomes a mirror reflecting the mind's resilience, while the mind learns humility from the body's limits.

Regular movement transforms chaos into clarity. It tempers emotion, steadies thought, and awakens gratitude for the simple privilege of motion. Through sweat and effort, one discovers not exhaustion, but renewal — a profound awareness that strength is not merely physical, but spiritual.

In the end, exercise is not about chasing perfection, but embracing growth. It is the daily ritual of becoming — a gentle rebellion against stagnation, and a reminder that transformation begins with a single, deliberate step.

Abstract-90

"MENTAL HEALTH "

Avinash Kisku *, Ms. Shrabani Chakraborty
Email: kisku7808@gmail.com
Radiant Institute of Nursing and Paramedical Sciences

ABSTRACT

Introduction: Mental health is the unseen foundation upon which every thought, feeling, and dream stands. It is the silent rhythm of our inner world — fragile yet profound, easily disturbed yet infinitely resilient. To care for the mind is to tend to the garden of being, where thoughts bloom and wither in cycles unseen.

It is not the absence of struggle, but the ability to find balance amid the storm. Mental health whispers that healing is not linear — that even broken pieces can form patterns of strength. It reminds us that vulnerability is not weakness, but truth made visible.

In a world that rewards noise and speed, mental health invites stillness. It asks us to listen — to ourselves, to others, to the quiet spaces where understanding begins. Caring for the mind is an act of courage, a declaration that peace is not a luxury, but a necessity.

Ultimately, mental health is the art of holding oneself gently — of recognizing that being human means feeling deeply, breaking sometimes, and beginning again.

Abstract-91

"OVERVIEW OF ORGAN TRANSPLANT"

Sahnaj khatun

Radiant institute of pharmaceutical sciences

Email:-khatunsahnaj093@gmail.com

ABSTRACT

Introduction: Organ transplantation is a life-saving medical procedure that involves replacing a diseased or nonfunctional organ with a healthy one from a donor. It represents one of the most remarkable achievements in modern medicine, offering hope and extended survival for patients with end-stage organ failure. The most commonly transplanted organs include the kidney, liver, heart, lungs, pancreas, and intestines. Organ donation can be from living donors or deceased donors, depending on the type of organ and medical suitability. Advances in surgical techniques, immunosuppressive therapy, and postoperative care have significantly improved graft survival and patient outcomes. However, challenges such as organ shortage, graft rejection, ethical concerns, and the risk of infections remain major global issues. Efforts such as awareness campaigns, use of artificial and bioengineered organs, and development of xenotransplantation are being explored to overcome these limitations. Overall, organ transplantation continues to evolve as a multidisciplinary field integrating medical science, ethics, and technology to enhance the quality and longevity of human life.

Keywords: Organ transplantation, donor, graft rejection, immune suppressants, bioengineering, ethics.

Abstract-92

"NANOFIBERS DRUG DELIVERY SYSTEM FOR CANCER TREATMENT "

Md Nishat Anjum, Md Saud Anwer

Radiant Institute of Pharmaceutical Sciences

Tengermari Kishanganj, Bihar Pin-855107

Mail Id: mdnishatanjum67@gmail.com

ABSTRACT

Introduction: Nanofiber-based drug delivery systems offer a promising approach for targeted cancer therapy due to their high surface area, tunable porosity, and controlled drug release properties

Introduction: Nanofibers are defined as fibers with diameters less than 100 nanometers. However, in the textile industry, this definition is often extended to include fibers with diameters up to 1000 nanometers (1 micron).To illustrate their scale, consider that a human hair is approximately **80,000 nanometers** in diameter—much larger than a nanofiber. In the image on the right, a single human hair is shown resting on a mat of nanofibers for comparison.

Cancer: Cancer is a large group of diseases that have one thing in common:They occur when **normal cells become cancerous** cells that **multiply uncontrollably and spread** throughout the body.Your **genes** send instructions to your cells, telling them **when to start and stop growing**.

Conclusion: Nanofiber-based drug delivery systems offer a promising approach for targeted cancer therapy. They enhance drug efficacy, reduce side effects, and allow controlled and sustained release, making them a potential breakthrough in cancer treatment.

Abstract-93

"TARGETED-DELIVERY OF DRUGS TO CANCER CELLS USING LIPOSOMES "

Tanushree Saha
Radiant Institute of Pharmaceutical Sciences
Tengermari Kishanganj, Bihar Pin-855107

ABSTRACT

Introduction: Cancer is the second most frequent cause of death in Jordan. There are various types of treatment for cancer patient, these include: chemotherapy, radiation therapy, surgery and other miscel lancous methods. Several drugs have been developed for cancer treatment especially in the chemotherapy. However, the side effects of these drugs were severe since it mainly does not rocognize cancer cells from normal ones. Due to this, it is vital to develop methods that specifically target cancer cells and hence minimizing normal cells exposure to these dangerous deugs. Targeted-delivery of drugs into specific cancer cells or tissue can decrease or even eliminate such side effects. These vehicles are designed to recognize the physical and chemical differences between normal and up-normal cells. Several vehicles will be synthesized, loaded with the drug, characterized by different means then the targeted delivery and relense will be studied in regards, to the location reicase abd lis kinchos, Tlese vehicles will klude micelles and iposome nunopancies.

Abstract-94

"IMPACT OF COVID-19 ON LIFESTYLE "

Kasif
Radiant Institute of Pharmaceutical Sciences
Tengermari Kishanganj, Bihar Pin-855107

ABSTRACT

Introduction: The COVID-19 pandemic was more than a global health crisis — it was a mirror held up to humanity. In its silence and stillness, it redefined what it meant to live, connect, and survive. The routines that once seemed permanent dissolved overnight, giving rise to a new rhythm of existence shaped by distance, fear, and resilience.

Homes became worlds, and screens became windows to society. Work, learning, and relationships migrated to the digital realm, blurring the boundaries between personal and professional, solitude and connection. The pace of life slowed, forcing reflection — on priorities, on purpose, on the fragility of normalcy.

Yet amid uncertainty, adaptation bloomed. Communities rediscovered empathy, families found time, and individuals learned the quiet strength of self-care. The pandemic revealed both our vulnerability and our capacity to transform. In its wake, COVID-19 left not just loss, but lessons — that lifestyle is not merely about comfort or habit, but about balance, gratitude, and the courage to begin again.

The end....