



PHARMA COMMUNIQUE

(An internal circulation of news, knowledge and professional updates)

of
BLDEA'S SSM COLLEGE OF PHARMACY & RESEARCH CENTRE

NAAC Accreditation ('B' Grade with 2.40 CGPA score)

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“Human progress is neither automatic nor inevitable...

Every step toward the goal of justice requires sacrifice, suffering, and struggle; the tireless exertions and passionate concern of dedicated individuals.”



These lines are extracted from one of the quotes by Martin Luther King Jr. from his book “Stride toward Freedom”. Here he wrote with a context of building stronger and independent nation. We can correlate this with the struggles and sacrifices of COVID warriors during the pandemic. As the quote suggests, the goal of justice can achieved only by the ‘dedicated individuals with their passionate concerns, tireless exertions, sacrifice, suffering and struggle’. During the pandemic, the goal of justice was to provide optimal healthcare services to every infected victim of virus in intended time. Our healthcare professionals-the dedicated individuals, with sheer sacrifice, struggle and suffering, utilized their potential entirely to meet the needs, regardless of the positions they hold. Despite the discrepancies, injustice in many parts of the country, the provision of ‘right to health’ was mostly served. Calling them ‘warriors’ is not just enough to honour their service to the nation; the government should continually work on upgrading the safety measures and utilities. It is also the responsibility of the citizens to respect the warriors, as we have seen numerous cases of atrocities performed against them when they were unsuccessful to protect the lives of the some patients. We should understand that human rights are as important as health rights. Let’s respect and honour the heroes of India!

Dr. S. Z. Inamdar,

INSTITUTE CREDENTIALS

Journal Publications

- Santosh Karajgi, Shivanad K, B Shivkumar SM Biradar et al Synthesis, Characterization of 2-Methylquinoxolinyll Thiazolidines for Antimicrobial activity European journal of Pharmaceutcal and medical research 8(9):624 sept 2021
- Santosh Karajgi, Somashekar Metri R.B. Kotnal 2D-QSAR Study of synthesized novel derivatives of 1,3,4-oxadiazoles International Journal Of Pharmaceutical Research Doi:10.31838/Ijpr/2021.13.01.324
- Santosh Karajgi, Somashekar Metri Akhtar Khan, Rashidur Islam Development of validated analytical area under curve UV Spectrophotometric method for assay of cetrizine dihydrochloride Research Journal of Pharmacy And Technology Jan 2021 Doi:10.5958/0974-360x.2021.00037.8
- Santosh K, Mahajan Swati, R.B. Kotnal Hydrotropic Aqueous Solubility for Quantitative Determination of Vortioxetine Hydrochloride in its Pharmaceutical dosage forms Jan 2021 International Journal For Innovative Engineering and Management Research .DOI:[10.48047/IJIEMR/V10/I01/36](https://doi.org/10.48047/IJIEMR/V10/I01/36)
- Santosh K, Hydrotropic Solubility and Linearity Profile of Apixaban published in Research Journal of Pharmacy and Technology, Vol. 14, issue 3, March (2021).
- Bioassay guided isolation and identification of compound from Sargassum Illicifolium and investigation of Antimicrobial activity published in Journal of Pharmaceutical Sciences and Research, Vol.13, issue 3, March (2021).
- Effect of Hydrotropic solubilization on quantitative determination of Ulipristal Acetate in pharmaceutical formulations published in International Journal of Drug Delivery Technology, Vol.11, issue 1, March (2021)
- UV Spectroscopic Area Under Curve technique for the Quantification of Acarbose in tablets published in RGUHS Journal of Pharmaceutical Sciences, Vol.7, issue 4 (2021).

Books and Chapters in edited Volumes / Books published with ISBN

- Role of Engineers in Pharmaceutical Industry, in the book entitled Role of Basic Sciences in Modern Engineering Education Edited by Aruna Kumari Nakkella and Published by Weser Books Zittau, Germany with ISBN Number: 978-3-96492295-3. (2021)
- Future of Analytical Chemistry, in the book entitled Research and Innovations in Chemical Sciences: An Approach towards qualitative and quantitative studies and applications; edited by Dr. Arunakumari Nakkella and Dr. Vishnu Kiran Manam and published by Bharti Publications New Delhi with ISBN Number: 978-93-91681-17-3. (2021)
- NEP 2020: Redesigning Pharmacy Education, in the book entitled NEP 2020: A road map to future higher education; edited by Dr. Vidyapati and Dr. Dheeraj Singh, published by Akhand Publishing House, Delhi with ISBN Number: 978-93-90870-54-7. (2021)

Faculty participation (Guest lecturers or Workshop/FDP/QIP/STP, etc) as Resource person / Chairperson / Evaluator / Judge, etc

- All the staff members attended National webinar on "Empowering Pharmacist of 21st century" organized by dept of Pharmacognosy and IQAC, BLDEA's SSM COP&RC on 10th June 2021
- All the staff members attended National webinar on "High-Risk Medications management-case studies" organized by dept of Pharmacy Practice and IQAC, BLDEA's SSM COP&RC on 10th June 2021
- Sunanda Nandikol, Hasti Kenia attended AICTE sponsored two days National e-conference on "IPR AWARENESS IN INDIA" organised by

Acharya and BM Reddy College of Pharmacy Bengaluru on 9-10th Aug 2021

- Dr.SM Metri Delivered a guest lecture at Chalapati institute of pharmaceutical sciences Guntur on “Molecular Descriptors in QSAR Studies” on 30 th August 2021 , 102 students were Participated.
- Five day AICTE-ATAL E FDP on Leadership and Excellence in Workplace, organized by A.R.College of Pharmacy and G.H.Patel Institute of Pharmacy, Gujarat, from 21.06.2021 to 25.06.2022
- Three day FDP on Author Workshop and Scopus Metrics Analysis, organized by BLDE(DU) and Elsevier-Scopus, from 28.06.2021 to 30.06.2021
- One week E FDP on Strengthening Research and Academic Pursuit in the 21 st Century, organized by Sharda University under PMMNMTT scheme of Ministry of Education from 28.06.2021 to 04.07.2021
- S M. Biradar attended one day workshop entitled “ Discovery and Development of New Drug “organized by Dept. of Pharmacognosy & IQAC, BLDEA’s SSM College of Pharmacy and Research Centre,Vijayapur-586103, Karnataka, conducted on 10.07.2021.
- S M. Biradar attended a national webinar entitled “ Challenges of Pharmaceutical care and Medication Management” organised by BLDEA’S SSM College of Pharmacy and Research Centre Vijayapur on 26 th June-2021.
- S M. Biradar attended a national webinar entitled “ Empowering Pharmacist of 21st Century”organised by Dept. of Pharmaceutics, BLDEA’S SSM College of Pharmacy and Research Centre Vijayapur on 11 th June-2021.
- S.M.Biradar attended a national webinar entitled “High-Risk Medication Management organized by Dept. of Pharmacy Practice BLDEA’S SSM College of Pharmacy and Research Centre Vijayapur on 10 th June 2021.
- S M. Biradar attended a national webinar entitled “ Role of Community Pharmacist in Covid-19 pandemic” organized by Dept.

of Pharmaceutics BLDEA’S SSM College of Pharmacy and Research Centre Vijayapur on 7 th June 2021.

COVID-19 AT A GLANCE

VIEWPOINT

Structure And Lifecycle Of Sars Cov-19

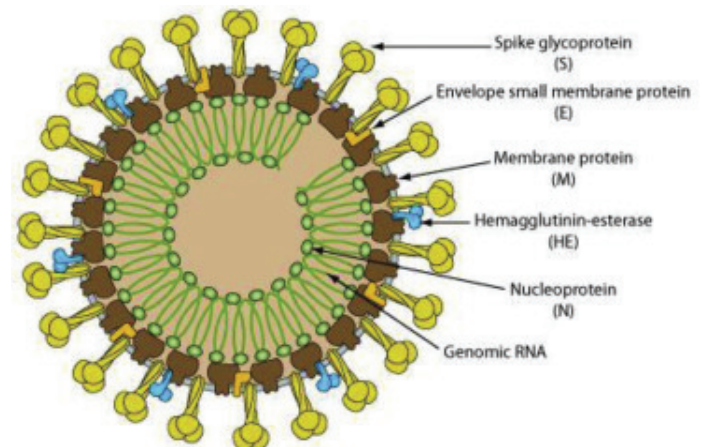
By Rohan, PharmD

Coronaviruses are members of the subfamily Coronavirinae in the family Coronaviridae and the order Nidovirales. The recent emergence of a novel coronavirus with an outbreak of unusual viral pneumonia in Wuhan, China and then pandemic outbreak is 2019-nCoV or COVID19.

Coronavirus genome structure and life cycle

Corona virus is a spherical or pleomorphic enveloped particles containing single-stranded (positive-sense) RNA associated with a nucleoprotein within a capsid comprised of matrix protein. The envelope bears club-shaped glycoprotein projections. Some coronaviruse

Schematic representation of a Corona Virus



Stage 1: Asymptomatic state (initial 1–2 days of infection)

The inhaled virus SARS-CoV-2 likely binds to epithelial cells in the nasal cavity and starts replicating. ACE2 is the main receptor for both SARS-CoV2 and SARS-CoV. In vitro data with SARS-CoV indicate that the ciliated cells are primary cells infected in the conducting airways. However, this concept might need some revision, since single-cell RNA indicates

low level of ACE2 expression in conducting airway cells and no obvious cell type preference. There is local propagation of the virus but a limited innate immune response. At this stage the virus can be detected by nasal swabs. Although the viral burden may be low, these individuals are infectious. The RT-PCR value for the viral RNA might be useful to predict the viral load and the subsequent infectivity and clinical course.

Stage 2: Upper airway and conducting airway response (next few days)

The virus propagates and migrates down the respiratory tract along the conducting airways, and a more robust innate immune response is triggered. Nasal swabs or sputum should yield the virus as well as early markers of the innate immune response. At this time, the disease COVID-19 is clinically manifest. The level of CXCL10 (or some other innate response cytokine) may be predictive of the subsequent clinical course. Viral infected epithelial cells are a major source of beta and lambda interferons. CXCL10 is an interferon responsive gene that has an excellent signal to noise ratio in the alveolar type II cell response to both SARS-CoV and influenza. CXCL10 has also been reported to be useful as disease marker in SARS. Determining the host innate immune response might improve predictions on the subsequent course of the disease and need for more aggressive monitoring.

For about 80% of the infected patients, the disease will be mild and mostly restricted to the upper and conducting airways. These individuals may be monitored at home with conservative symptomatic therapy.

Stage 3: Hypoxia, ground glass infiltrates, and progression to ARDS

Unfortunately, about 20% of the infected patients will progress to stage 3 disease and will develop pulmonary infiltrates and some of these will develop very severe disease. Initial estimates of the fatality rate are around 2%, but this varies markedly with age. The fatality and morbidity rates may be revised once the prevalence of mild and asymptomatic cases is better defined. The virus now reaches the

gas exchange units of the lung and infects alveolar type II cells. SARS-CoV preferentially infect type II cells compared to type I cells. The infected alveolar units tend to be peripheral and subpleural. SARS-CoV propagates within type II cells, large number of viral particles are released, and the cells undergo apoptosis and die. The end result is likely a self-replicating pulmonary toxin as the released viral particles infect type II cells in adjacent units. I suspect areas of the lung will likely lose most of their type II cells, and secondary pathway for epithelial regeneration will be triggered. Normally, type II cells are the precursor cells for type I cells. This postulated sequence of events has been shown in the murine model of influenza pneumonia. The pathological result of SARS and COVID-19 is diffuse alveolar damage with fibrin rich hyaline membranes and a few multinucleated giant cells. The aberrant wound healing may lead to more severe scarring and fibrosis than other forms of ARDS. Recovery will require a vigorous innate and acquired immune response and epithelial regeneration. Elderly individuals are particularly at risk because of their diminished immune response and reduced ability to repair the damaged epithelium. The elderly also have reduced mucociliary clearance, and this may allow the virus to spread to the gas exchange units of the lung more readily. Based on assumption that viral entry by SARS-CoV-2 will be the same as SARS-CoV. We do not know if there are alternate receptors for viral entry. CD209L is an alternative receptor for SARS-CoV. We await detailed studies on infection and the innate immune response of differentiated primary human lung cells. The apical cilia on airway cells and microvilli on type II cells may be important for facilitating viral entry.

In conclusion, COVID-19 confined to the conducting airways should be mild and treated symptomatically at home. However, COVID-19 that has progressed to the gas exchange units of the lung must be monitored carefully and supported to the best of our ability, as we await the development and testing of specific antiviral drugs.

Reference

1. Robert J. Mason, et al. Pathogenesis of COVID-19 from a cell biology perspective European Respiratory Journal 2020 55: 2000607; doi: 10.1183/13993003.00607-2020

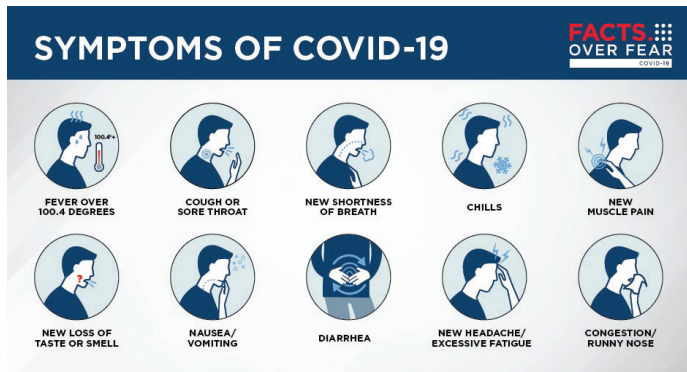


Image Courtesy: Good Samaritan Society

Diagnosis Of Covid-19

Sumanyu J K, PharmD Intern

Etiological Diagnosis:

RT-PCR (Reverse transcription-polymerase chain reaction) is the most considered diagnostic test in diagnosing COVID-19. This test uses nasal swab, tracheal aspirate or broncho-alveolar lavage (BAL) specimens. The preferred method for diagnosis is the collection of upper respiratory samples via nasopharyngeal and oropharyngeal swabs. Bronchoscopy is avoided due to generation of aerosol during the test pose threat to both healthcare staff and patients instead can be utilized in intubated patients. Tracheal aspiration and non-bronchoscopic BAL are alternatives for bronchoscopy. An article published in The New England Journal of Medicine by Lirong Zou found that the levels of SARS-CoV-2 RNA were higher in samples collected from upper respiratory tract (also in asymptomatic patients), and in first 3 days after symptom onset. Swab contamination may lead to false positive results. Negative results do not necessarily discard the possibility of COVID-19. A study published in Radiology (Ai T, Yang Z and Hou H) estimated the sensitivity rate of RT-PCR to be 66-80%. Detection of antibodies like IgA, IgM and IgG are the indicators of immune-response to virus.

Complete Blood Count:

The complete blood count usually reveals lymphopenia, eosinopenia which may worsen prognosis. Thrombocytopenia poses greater severity and cause damage to the myocardium. The other risk factors for severity include high values of C-reactive protein (CRP), ferritin, D-dimer, procalcitonin, lactic dehydrogenase (DHL), prothrombin time, activated partial thromboplastin time, amyloid serum protein A, creatine kinase (CK), glutamic-pyruvic transaminase (SGPT), urea, and creatinine.

Imaging Tests:

The radiological findings of COVID-19 are not specific, although the severity of the damage can be observed. Differential diagnosis is often required. Computed tomography (CT) is more sensitive than plain X-ray findings. CT scan commonly reveals multifocal, bilateral, peripheral/subpleural ground glass opacities, generally affecting the posterior portions of the lower lobes, with or without associated consolidations. Pulmonary ultrasonography is also a good alternative for more specificity.

Pharmaceutical Care For Covid-19

Anand Rathod, PharmD

Clinical presentation:

COVID-19 has a wide spectrum of clinical presentations. The most commonly reported symptoms of COVID-19 include fever, dry cough, headaches, weakness, and shortness of breath. Other non-specific symptoms include sore throat, dysgeusia, poor appetite, nasal congestion, and diarrhea. Although most infections are self-limited, approximately 15% of infected individuals develop respiratory symptoms that require supplemental oxygen. Moreover, an additional 5% require advanced ventilator support due to hypoxemic respiratory failure, acute respiratory distress syndrome (ARDS), and multi organ failure. While symptoms of COVID-19 are predominantly respiratory, direct or indirect involvement of other organ systems is common, such as neurologic symptoms and cardiac damage. Furthermore, individuals with pre-existing

co-morbidities such as cardiovascular dysfunction, respiratory disease, or diabetes may experience more severe symptoms of COVID-19. Significant respiratory symptoms ensue that may lead to ARDS and death.

Understanding the mechanism of transmissibility and pathologic process of SARS-CoV-2 permits researchers to spot targets for novel therapeutic agents to forestall or treat the illness. SARS-CoV-2 may be a single stranded RNA-enveloped virus. Its entry into host cells depends on binding of its structural spike (S) macromolecule to host cell receptors and S-protein priming via host cell proteases. The first target is human respiratory organ animal tissue cells. SARS-CoV-2 binds to vasoconstrictive converting catalyst two (ACE2) receptors on the surface of human cells through its S-protein and, following this primary binding, two transmembrane amino acid proteinase (TMPRSS2) primes the S-protein, facilitating infective agent entry into the cell through endosomes. Once the virus has entered the human cell, it's capable of hijacking the host cell's machinery to bear infective agent replication. The binding of S-proteins to ACE2 receptors may be a vital step needed for infective agent entry and may be a potential target for COVID-19 pharmacotherapy that is being studied vigorously to boot sequencing of the infective agent order of SARS-CoV-2 has created chance for diagnostic testing, with hopes of developing effective preventive and therapeutic ways. Researchers have discovered that the order of SARS-CoV-2 is 76% kind of like SARS-CoV, though similar, delicate genetic variations might translate to important variations in infectivity and severity.

Identifying a drug that slows or kills SARS-CoV-2 needs a multi-factorial approach. with success enforced pharmacotherapy has the potential to save lots of severely sick COVID-19 patients and ease the burden of the pandemic on tending systems. Prophylactic treatment has been instructed, quality to frontline employees and people at higher risk of susceptibleness. Because the harmful consequences of COVID-19 still impact nations globally, the

necessity for a secure and effective treatment is predominant. Currently, there is no immunogen or specific therapeutic drug to treat COVID-19, others than ancillary care. Pharmacotherapy has been aimed toward assuaging symptoms, combined with varied tries to stop the complications of COVID-19. At present, repurposing of obtainable medications has been the quality of look after treatment of SARS-CoV-2 patients. This includes unapproved agents that have incontestable in vitro activity against SARS-CoV and MERS-CoV

Outline of Drug Mechanisms Involved in the Management Of COVID-19

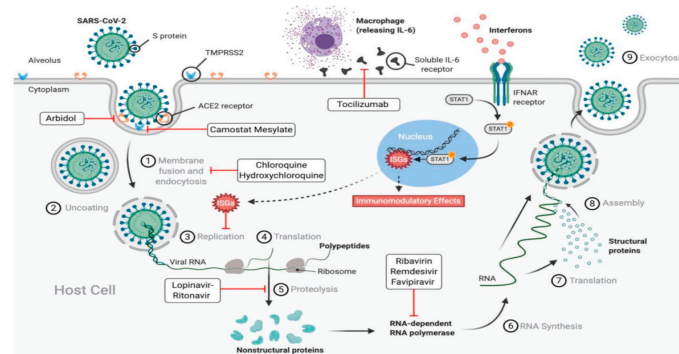


Image Courtesy: Sarah Lam et al, European Journal of Pharmacology

Review of proposed pharmacological agents to treat COVID-19

Proposed Pharmacological Agents to Treat COVID-19

Drug	Mechanism of Action	Adverse Drug Reactions
Anti-Viral Drugs Remdesivir	RNA-dependent RNA polymerase inhibitor	Gastrointestinal disturbances (nausea and vomiting), aminotransferase elevations, infusion related reaction (hypotension, diaphoresis, shivering)

Ribavirin	RNA-dependent RNA polymerase inhibitor	Hemolytic anemia (may lead to death in cardiac patients), alopecia, abdominal pain, anemia, hyperbilirubinemia, arthralgia
Lopinavir-Ritonavir	3CL protease inhibitor	Gastrointestinal disturbances (nausea, vomiting, diarrhea), transaminase elevations, increased bleeding, hyperlipidemia, hyperglycemia, insulin resistance, QT prolongation, possible risk of renal dysfunction.
Favipiravir	RNA-dependent RNA polymerase inhibitor	Gastrointestinal disturbances (nausea, vomiting and diarrhea), hyperuricemia, elevated transaminases, decreased neutrophil count
Chloroquine	Viral entry inhibitor	Gastrointestinal disturbances (nausea, vomiting and diarrhea), headache, anorexia, bitter taste, QT prolongation, Torsades de Pointes, arrhythmia, agranulocytosis, seizures, rare renal toxicity

Hydroxychloroquine	Viral entry inhibitor	Gastrointestinal disturbances (nausea, vomiting and diarrhea), QT prolongation, hypoglycemia, neuropsychiatric effects, agranulocytosis, seizures, retinopathy
Oseltamivir	Neuroaminidase inhibitor	Gastrointestinal disturbances (nausea, vomiting), headache, arrhythmia, hepatitis, anaphylaxis
Umifenovir	Spike protein/ ACE2 membrane fusion inhibitor	Gastrointestinal disturbances, allergic reaction, elevated transaminases
Immunomodulatory agents Tocilizumab	IL-6 inhibitor	Infusion reactions, GI perforations, increased neutrophils, decreased platelets, neutropenia, elevated ALT, increased lipids
Interferons	Activate Interferon-stimulated genes (ISGs): -Interfere with viral replication -Immunomodulatory effects	Malaise, fatigue, fever
Adjunctive Agents Azithromycin	Antibacterial; used in combination with hydroxychloroquine for synergistic antiviral effect.	Gastrointestinal disturbances, rash, QT prolongation, hepatotoxicity

Corticosteroids Methylprednisolone	Cytokine gene expression inhibitor	Adrenal suppression, osteoporosis, hypercholesterolemia, hyperglycemia, hypertension
Miscellaneous agents Camostat mesylate ACE inhibitors/ARB	Serine protease inhibitor ACE inhibitor; inhibit formation of angiotensin II ARB; angiotensin II receptor antagonist	Oedema, urticaria, elevated peripheral blood eosinophilia Dry cough, hyperkalemia, hypotension, dizziness, orthostatic hypotension, acute renal failure, skin rash, dysgeusia ARB; hypotension, dizziness, fatigue, orthostatic hypotension

Table Courtesy: Sarah Lam et al, European Journal of Pharmacology

Dosage Regimen of Potential Pharmacological Agents for COVID-19

Drug	Administration	Dosage
Remdesivir	IV	10 day administration; day 1 200mg QD loading dose, followed by 100 mg QD
Ribavirin	ORAL	500 mg BID or TID in combination with IFN-alpha or lopinavir/ritonavir
Lopinavir-Ritonavir	ORAL	400 mg/ 100 mg BID for up to 14 days
Favipiravir	ORAL	600 mg BID
Chloroquine	ORAL	500 mg ORAL QD/ BID for 5-2 10 days

Hydroxychloroquine	ORAL	Day 1 400 mg BID followed by 200 mg BID for 5 to 10 days Alternative 200mg TID for 10 days/ 400 QD for 5 days
Oseltamivir	ORAL	75 mg QD
Umifenovir	ORAL	200 mg TID for 7 to 14 days

Table Courtesy: Sarah Lam et al, European Journal of Pharmacology

MEDFLARE

PvPI Drug Safety Alerts

The preliminary analysis of Adverse Drug Reactions (ADRs) from the PvPI database reveals that the following suspected drugs are associated with the ADRs as given below:

S. No	Suspected Drug	Indication	Adverse Reaction
1.	Dimethyl Fumarate	For Relapsing remitting multiple sclerosis	Alopecia
2.	Cefazolin	Cephalosporin antibiotic-indicated in the treatment of serious infections due to susceptible organisms – respiratory tract infections, urinary tract infections, skin & skin structure infection, biliary tract infections, septicaemia	Acute Generalised Exanthematous Pustulosis

Drug Information

REMEDESEVIR	
Classes:	SARS-CoV-2 RNA-dependent RNA polymerase (RdRp) inhibitor
Dosage Forms & Strengths	Patients not requiring invasive mechanical ventilation 200 mg IV infusion on day 1, then 100 mg IV once daily from day 2 to 5 Patients requiring invasive mechanical ventilation 200 mg IV infusion on day 1, then 100 mg IV infusion once daily from day 2 to 10

IPR CREDENTIALS

Collaborative Patents Published by Dr. S.R.Karajgi, Professor & Head, Department Head of Quality Assurance

S no	Title of the Patent Published	Date of Publication
1	Eclipta Alba based composition for Hemorrhoids and its preparation method thereof.	05.02.2021
2	Phyllanthus Niruri as a promising alternative treatment for Jaundice.	11.06.2021

Reviewer for Indexed Journal

Articles Reviewed: (Publon Journals) by Dr.S R.Karajgi, Professor, Head Dept of Quality Assurance

Sl.	Name of the Journal	Article	Month
1.	Journal of Pharmaceutical Research International	Study of Red Blood Cell morphology in diabetic patients	January 2021
2.	Journal of Pharmaceutical Research International	Green Synthesis of Silver Nanoparticles Using aerial root of Ficus benghalensis and its Antibacterial activity.	J u n e 2021

ALUMNI MEMOIR

Dapagliflozin versus Glipizide as Add-On Therapy: A Research Summary

Vineeth, Sumanyu J K, PharmD

Description:

A few months back, during the ward rounds, we ran into a case of 60-year old male diabetic patient who was admitted to the hospital due to persistently elevating levels of FBS and PPBS despite good

Indication	COVID-19
Mechanism of Action	<ul style="list-style-type: none"> Remdesevir is an inhibitor of the SARS-CoV-2 RNA- dependent RNA polymerase which is essential for viral replication. Remdesevir is an adenosine nucleotide prodrug that distributes into cells where it is metabolized to a nucleoside monophosphate intermediate by carboxyesterase 1 and/or cathepsin A, depending upon the cell type. When remdesevir nucleotide is present in the viral RNA template, the efficiency of incorporation of the complimentary natural nucleotide is compromised, thereby inhibiting the viral RNA synthesis.
Absorption	<ul style="list-style-type: none"> Tmax, IV: 0.67 to 0.68 hours
Metabolism	<ul style="list-style-type: none"> Via CES1 (80%), cathepsin A(10%), CYP3A (10%)
Excretion	<ul style="list-style-type: none"> Renal excretion: 10%
Adverse Effects	<ul style="list-style-type: none"> Gastrointestinal: Nausea (3 to 7%) Cardiovascular: Cardiac arrest Hepatic: ALT/SGPT level raised (2 to 7%) Aspartate aminotransferase serum level raised (3 to 6%), Hepatotoxicity Immunologic: Anaphylaxis, hypersensitivity reaction (less than 2%) Other: Infusion reaction
Reference:	www.micromedex.com

adherence to combination of Metformin (500mg) and Glipizide (2mg). The consulting physician was discussing the issue with the post-graduates and then asked us if add-on therapy with dapagliflozin would help the patient. We found a research article titled “Dapagliflozin versus glipizide as add-on therapy in patients with type-2 diabetes who have inadequate glycemic control with metformin; a randomized, 52-week, double blind, active-controlled non-inferiority trial” written by Michael A Nauck et al (2005), published in Diabetes Care journal. Here we are sharing the summary of the article.

Summary:

Metformin with sulfonylurea is considered an effective therapy in type-2 diabetes, although adverse effects like hypoglycemia, weight gain are common. Placebo-controlled studies suggest dapagliflozin as an add-on drug in patients with inadequate glycemic control despite adherence to metformin and chances of hypoglycemia is less due to its insulin independency. The current study sets the objective of testing the efficacy, safety and tolerability of dapagliflozin over glipizide during the treatment period of 52 weeks in uncontrolled type-2 diabetes patients receiving metformin monotherapy. A multi-center randomized, double-blind, parallel-group, active-controlled noninferiority trial study was conducted in type-2 diabetes patients (baseline HbA1c mean of 7.7%). Along with stabilized metformin monotherapy, patients received target add-on drugs like dapagliflozin (n = 406) and glipizide (n = 408) that were up-titrated over 18-weeks ≤10 mg or 20 mg/day respectively. The sample size was divided into full analysis set (n = 801) and safety analysis set (n = 814) out of which 77.9% completed the study. The study enrolled men and women aged ≥18 years with poorly controlled diabetes (HbA1c >6.5 to <10%) with metformin

monotherapy or combined therapy with other anti-diabetic drugs. Other criteria like fasting plasma glucose ≤15 mmol/L and C-peptide concentration ≥ 0.33mmol/L were included. Primary end point was absolute change in HbA1c from baseline to 52-weeks, whereas secondary points such as absolute change in total body weight, proportions of patients with at least one hypoglycemic episode and decreased total body weight ≥5% from baseline to 52-weeks. The primary end point, reduction in HbA1c with dapagliflozin and glipizide was noninferior at 52-weeks. Dapagliflozin significantly reduced mean weight loss (-3.2 kg) versus weight gain with glipizide (1.2 kg, p<0.0001). Similarly, dapagliflozin (3.5%) reduced the proportion of patients experiencing hypoglycemia over glipizide (40.8%, p<0.0001). Dapagliflozin can be a potential alternative to sulfonylurea due to its similar glycemic efficacy to glipizide and reduced the episodes of hypoglycemia and potentiated weight loss when compared to the latter drug. The study successfully demonstrated the efficacy of dapagliflozin over glipizide in diabetes management. The threat of hypoglycemia can be reduced with dapagliflozin, nevertheless its role in causing genital and lower urinary tract infections is of major concern.

INSTITUTE CHRONICLE

Webinars Organized by the Institute

S no	Date	Resource person	Topic/Title	Co-ordinators
1	02-06-21	Dr Manoj Bhaskar B	Medical Writing	Dr SZ Inamdar, Dr Sushil PL, Sripad P

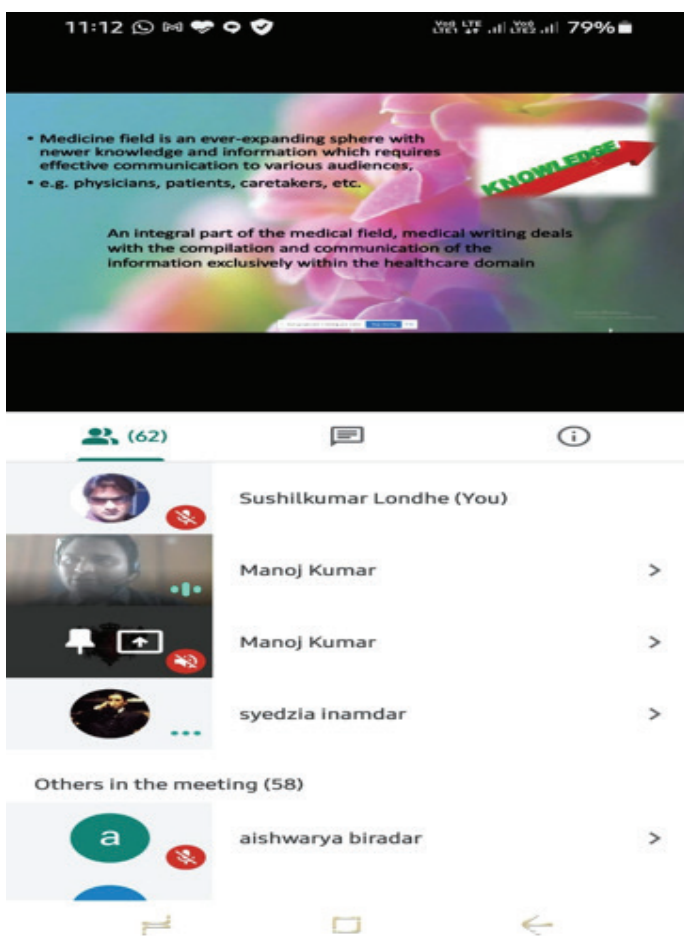
2	24-05-21	Dr.Rajkumar Aland	Challenges and opportunities in digitisation of Pharma industry	Dr. E N Gaviraj and B S Hunasagi
3	31-05-21	Dr.Giriraj kulkarni	PMP Technology for large scale production of biotechnology based drugs	Basavaraj S Hunasagi and Dr.E N Gaviraj
5	11-06-21	Dr.Hema Choudhari	Empowering pharmacist of 21 st Century	Dr.R G Patil and Vinod M
6	06-05-21	Dr. S V Rajendra	Alternative to animal models in biomedical research	Mr. Arunkumar Walikar and Mr.Prashant Jorapur
7	27-05-21	Shri. Prasad R Bhagwat	Pharma marketting : Driving force of pharmaceutical	Mr. Arunkumar Walikar and Mr. Prashanth Jorapur
8	11-06-21	Dr. Hema Chaudhary,	Empowering Pharmacist of 21 st Century	Dr. S. C. Marapur, Dr. R G. Patil and Mr. Vinod M
9	11-05-21	Mr Dharmesh Soni	“Transformation of Pharmacy Profession: A Focus on Post Covid-19”	Dr Somashekhar Metri

10	16-05-21	Dr Pratibha Auti	“Learning and Effective use of HPLC in Pharmaceutical Industry	Dr Somashekhar M.Metri
11	27-05-21	Dr Prasad Bhagavan	“Pharma Marketing: Driving force of Pharmaceutical Industry	Dr Somashekhar M.Metri
12	26-06-21	Dr Professor B Suresh	“Challenges of Pharmaceutical Care and Medication Management: Need of the Hour in India”	Dr Somashekhar M.Metri

A Webinar on Medical writing

A webinar was organized under CEPETS unit on the topic “Medical writing” on 2 June 2021 • 11:00am – 1:00 pm hosted by Dept Of Pharmacy Practice at BLDEAs SSM COP Vijaypur. Dr. Manoj Kumar Bhaskarabhatla Senior Associate Medical Writer Indigene, Bangalore was the resource person for the webinar. The talk mainly focused on science of Medical writing and its opportunities for pharmacy students which require skills for effectively conveying the newer information to physicians, patients and caretakers as well as understanding the process in Medical writing. Dr. R B Kotnal, Principal welcomed the guest and participants, Dr SZ Inamdar gave a brief introduction about the current status and importance of medical writing in today’s ever changing world. The program concluded with Principals remarks in which he stressed on various skills needed to adopt, develop and cultivate in the minds of students regarding newer avenues and job opportunities. Vote of thanks was offered by Mr

Shripad Potdar. Students of final year M Pharm, B Pharm, and Pharm D attended the program and were benefited.



History of Pharmacy



Monastic Pharmacy

During the Middle-Ages remnants of the Western knowledge of Pharmacy and Medicine were preserved in the monasteries (fifth to twelfth centuries). These scientists are known to have been taught in the cloisters as early as the seventh century. Manuscripts from many islands were translated or copied for monastery libraries. The monks gathered herbs and simples in the field, or raised them in their own herb gardens. These they prepared according to the art of the apothecary for the benefit of the sick and injured. Gardens such as these still may be found in monasteries in many countries. [Ref: "Great Moments in Pharmacy" by George A Bender Paintings By Robert A. Thom. Copyright ©Parke, Davis & Company 1965, Library of Congress Catalog Number: 65-26825]

STUDENT DIARY

Clinical Pharmacist Role in Psychiatry

Shambhavi Deshpande, PharmD

Psychiatric disorders are one of the major causes of global burden of diseases, yet it remains a major

challenge to doctors in impediment in the delivery of mental healthcare. It has been found across various studies that attitudes of doctors of other specialties and other healthcare professionals also contribute to stigma due to their lack of knowledge and awareness about psychiatry and mental health problems. The number of mental health professionals remains abysmally low. Clinical pharmacists are trained in assessing of psychiatric diseases and capable of providing mental health promotion and care in hospitals. This may not be a role that is recognized by the public. However, psychotherapy paired with medication is the most effective way to promote recovery. Examples include: Cognitive Behavioral Therapy, Exposure Therapy, Dialectical Behavior Therapy, etc. Pharmacists can play a key role by providing mental health medication management support to improve access and address patients' mental health needs. As psychiatrist with a busy practice needs an attention not only in psychiatric consultation, providing psycho education and arranging follow up but also it is necessary to provide a rationalized pharmacotherapy of patients depending upon patient's underlying conditions yet it remains a challenge for the clinicians for the selection of rationalized therapy.

Psychiatric pharmacists have specialized training in the drugs used to treat mental illnesses, such as schizophrenia and depression. Working with medical researchers or physicians, psychiatrists and other caregivers, they help improve outcomes and minimize side effects for psychiatric patients.

Research Roles

Clinical pharmacists also play a role in the design and testing of newer psycho therapeutic drugs, working for pharmaceutical companies or independent research laboratories. Clinical pharmacists have

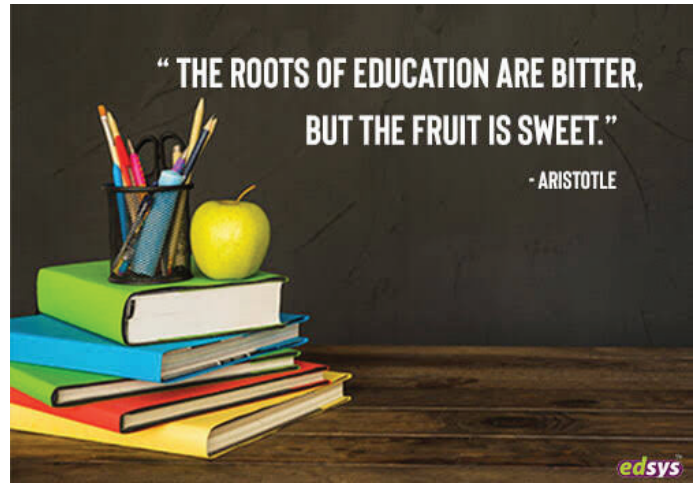
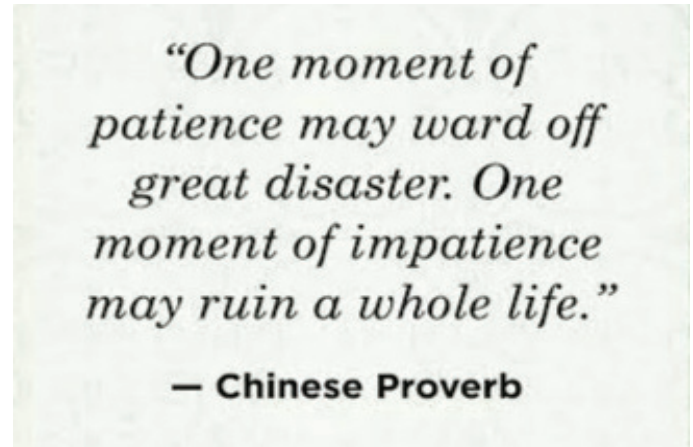
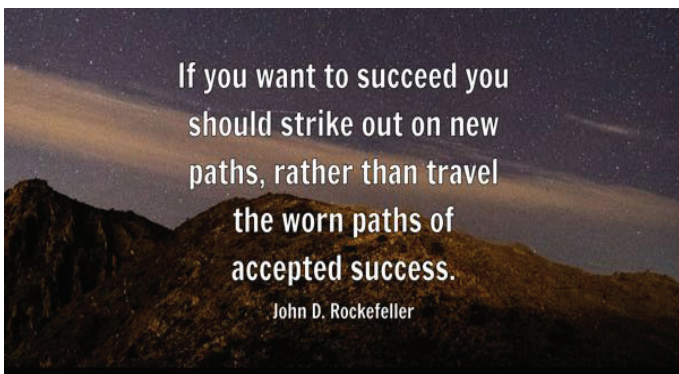
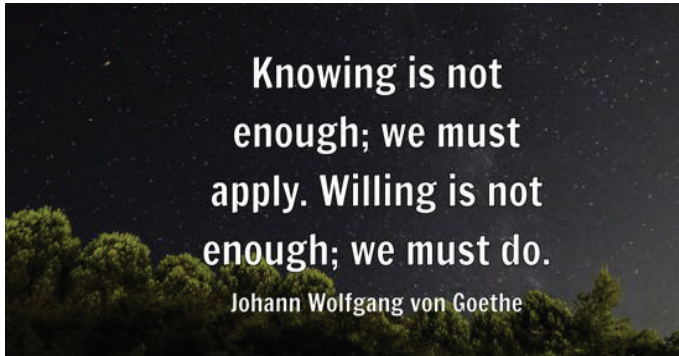
trained to suggest potential contraindications or conflicts with new drugs, based on similar drugs of the same class or general type. When the new product moves to clinical testing, the pharmacist can play a crucial role in detecting and adjusting for potential side effects or adverse interactions with other medications. The pharmacist's insights are also useful in helping the research team determine the medication's overall efficacy compared to existing products which helps to evaluate the tolerance of drugs associated with other psychotherapies and also helps in conducting newer clinical trials on other psychotherapies apart from pharmacotherapy

RESPONSIBILITIES OF CLINICAL PHARMACISTS IN PSYCHIATRY

- Providing patient education regarding disease and its medications among patients and patient representatives
- Optimizing and selection of rational psycho pharmacotherapy
- Providing direct patient care by medication management activities
- Assessing the drug therapy of the patient
- Identifying the ADR and monitoring for the drug-drug interactions
- Conducting research on medications on pharmacogenomics, pharmacoepidemiology and pharmaco-economic studies
- Designing the alternative drug therapy
- Providing cost effective therapy

Thus, clinical pharmacists play a key role in selection of psychotropic medications in improving

the pharmaceutical care of the psychiatric patients which helping the patients in improving the quality of life.



IV. Master of Pharmacy (M. Pharm)

Course duration: 2 years

Eligibility: Pass in B. Pharm with 55% marks.

- Pharmaceutics
- Pharmaceutical Chemistry
- Pharmacology
- Pharmacognosy
- Pharmacy Practice
- Pharmaceutical Technology
- Quality Assurance

V. Ph.D Programme

- Pharmaceutics
- Pharmaceutical Chemistry
- Pharmacognosy

Features

- Highly qualified and experienced teaching staff
- Well-ventilated classrooms with modern audio-visual teaching aid
- Sophisticated laboratories with modern instruments/equipment
- Museum exhibiting past and present developments in pharmacy
- Dhanvantri garden with about 100 medicinal herbs/shrubs
- Scientific society, a forum for regular interaction with eminent personalities to discuss current trends in Pharmacy
- Well furnished hostels for boys & girls
- Library & e-library, Recreation center
- Bank Loans
- State-level Ranks - 4
- Research Grants - 1.32 Crore
- Wi-Fi Campus
- Attached Hospital within campus
- Concession in fees for meritorious students of Vijayapur Dist.
- Swimming track within campus
- Fee waiver for students of Vijayapur District who secure CET ranking below 2500 conducted by KEA, 10% of total seats will be reserved for all courses of Pharmacy in this category
- Pharm. D Interns will be paid stipend of Rs. 8000 per month
- Academic Excellence Award will be conferred for class toppers



Library

Library has a huge collection of books, journals and CDs. The cyber center, which is also a part of the college, helps students to familiarize with internet & HELINET usage.

Placement Cell

All efforts are made to place our students in reputed companies, thus assuring them a secured and bright future. Over the last 5 years, our students have been placed in several reputed multi-national and Indian companies such as Ranbaxy, Astra, Pfizer, Torrent, FDC, Cipla, Himalaya, etc. Several of our students are employed in corporate hospitals too.

Prospects

The pharmaceutical industry in India is growing at a rapid pace, as a result of spurt in the number of hospitals, nursing homes and pharmaceutical companies. It indicates the increasing scope in this sector. A course in Pharmacy definitely offers reasonably good career opportunities by way of job opportunities in the job market and scope for self employment. The job opportunities for pharmacy graduates in India and in International level are as follows:

1. Pharmaceutical Industry: R&D, F&D, production, quality control, quality assurance or marketing of new drugs for clinical use (medical representatives).
2. Basis for Higher Education: M. Pharm or Ph.D holders can engage in research work like developing new drug molecules in pharmaceutical industry and analyzing them for application.
3. Government Departments: Drug control administration as a Drug Inspector or Government Analyst and Hospital Pharmacist in Armed Forces, Railways and Primary Health Care Centers. Pharmacists also have job opportunities in the Department of Health and Family Welfare, Pest Control Division of Agriculture, Department of National Defence, Provincial Research Councils and the Provincial Departments of Agriculture or Environment
4. University: Teaching and Research.
5. A career abroad: Hospital and clinical pharmacist, QA & QC scientist, regulatory expert, academics, production officer, etc.
6. Consulting Services: Pharmacy graduates can work as consultants for industry and academic centers.
7. Self employment: A diploma or degree holder in Pharmacy, after registering with the State Pharmacy Council, can set-up and run a pharmacy or chemists & druggists shop (retail as well as wholesale).
8. Clinical Research: Worldwide opportunity in contract research organisations.



Salary Potential

Approximate earnings per month of the newly employed Pharmacy graduates.

- Along with contributory provident fund, D.A., insurance, medical reimbursement, and other allowances and benefits as per government rules, average salary of a Pharmacist is around Rs 20,000.
- Research scientists: Rs. 50,000 - 60,000
- Medical representatives: Rs. 20,000 - 25,000 + incentives
- Manufacturing Pharmacists: Rs. 20,000 +
- Hospital Pharmacists: Rs. 20,000 - 25,000
- Government jobs: Rs. 20,000 onwards
- Academicians: Rs. 40,000 onwards



BLDE Association's Shri Sanganabasava Mahaswamiji COLLEGE OF PHARMACY & RESEARCH CENTRE

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bldeascop@yahoo.com | www.bldeaparmacy.ac.in

For Admissions call Principal @ 09448947496/Vice-Principal 9845619296



BLDE Association's Shri Sanganabasava Mahaswamiji COLLEGE OF PHARMACY & RESEARCH CENTRE



Build a lucrative career in the fast growing PHARMA industry

The Bijapur Liberal District Education Association

The Bijapur Liberal District Education Association (BLDEA) was founded in the year 1910 with the objective of imparting quality education. BLDEA currently runs 75 educational institutions and is thereby making a significant contribution to India's development. Since inception, the association has been working with a deep sense of commitment to bring about multi-lateral development in a wider section of population through an extensive network of educational institutions. BLDEA's College of Pharmacy, established in the year 1982 to cater to the needs of pharmacy education, is known for quality education.

BLDEA's SSM College of Pharmacy College and Research Center

Vision

To provide quality Pharmaceutical Education, Practice & Research with global standards and to meet health care needs of backward region of North Karnataka.



Admissions Open

Mission

To empower graduates in application based knowledge with high degree of professional integrity and ethics.

Courses offered

- I. **Diploma in Pharmacy (D. Pharm)**
Course duration: 2 years
Eligibility: Pass in 10+2 or any equivalent examination of any other approved Board, with Science as major subjects (PCM or PCB).
- II. **Bachelor of Pharmacy (B. Pharm)**
a) **Admission to 1st year B. Pharm**
Course duration: 4 years
Eligibility: Pass in PUC in Karnataka or any equivalent examination of any other approved Board, with minimum 40% marks in any combination PCM/PCB/PCMB.
(In case of SC/ST & Group-A the minimum requirement is 35%).

b) Admission to direct 11nd year B. Pharm

Pass in D. Pharm examination conducted by BEA Bangalore, or any authority approved by the Pharmacy Council of India.

III. Doctor of Pharmacy (Pharm. D.)

a) Admission to Doctor of Pharmacy (Pharm. D.)

Course duration: 6 years
Eligibility: Pass in 10+2 or D. Pharm Examination.

b) Post Baccalaureate (Pharm. D.)

Course duration: 3 years
Eligibility: Pass in B. Pharm Examination.

Scope for Pharm. D

A candidate who completes Pharm. D...

- Can find a job in the clinical sector
- Can play an active role in heading a hospital's pharmacy set-up
- Gets job opportunities in industries that deal with clinical trials
- Can register as a pharmacist all over the world
- Can find placement in Pharmacovigilance Sector and
- Is eligible to appear for NAPLEX in US and can become a registered pharmacist even in other countries.



PHARMA COMMUNIQUÉ

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