pharmahorizon

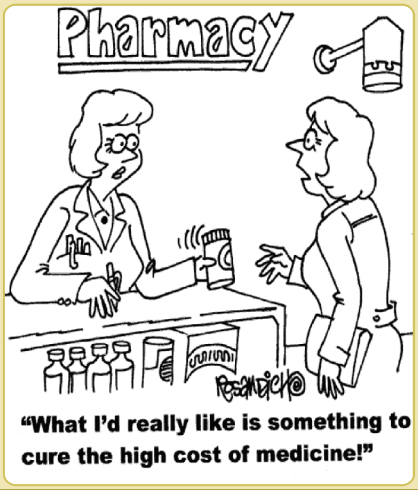
A panorama in the world of health sciences

NEWSLETTER FROM DEPARTMENT OF PHARMACY, SUMANDEEP VIDYAPEETH DEEMED UNIVERSITY

NAAC 'A' Grade
UGC Category I Deemed University

JULY-DEC 2018 I Vol IV Issue 2

CARTOON



CHIEF EDITORS VIEW:

Greetings from the Department of Pharmacy, Sumandeep Vidyapeeth. It is a deep honor and privilege to write the 4th edition of our departmental newsletter-Pharmahorizon. Over the past few months as I have spent time with faculty, staff, students, and alumni, the reputation and legacy of this college have been confirmed over and over. Without question, I believe our department is moving towards excellence in pharmaceutical sciences.We plan to focus now on key strategic areas like academic programs, research and innovation, faculty and staff investments, alumni engagement, student success and experience, and innovations in pharmacy practice. Advancing these areas will allow us to fully realize our vision of being bold leaders, moving together to the highest level of excellence in learning, discovery, and providing patient care. I am excited about our future together.

R. Balaraman

IIb or not Iib ?

While Shakespeare was posing this question in Scene I of Act III in the Hamlet, little must he have imagined that it would be of relevance to an interventional cardiologist?

Antiplatelet therapy is intended to reduce platelet aggregation and to inhibit thrombus formation after plaque disruption. The class of agents intended for this purpose include: aspirin, P2Y12 inhibitors and GPIIb/IIIa inhibitors.

The development of GPIIb/IIIa inhibitors (GPIs) arose from the understanding of a rare autosomal recessive bleeding disorder called Glanzmann's thrombasthenia (GT), in which a patient is devoid of GP IIb/IIIa receptors. In GT, without the fibrinogen binding of platelets, bleeding time is significantly prolonged.

GP IIb/IIIa is a platelet integrin aggregation receptor. When this receptor is stimulated by adenosine diphosphate (ADP), epinephrine, collagen, or thrombin, it becomes activated and binds fibrinogen, von Willebrand factor (vWF), fibronectin, and vitronectin. Fibrinogen causes platelet–platelet interaction and aggregation.

GPIs work by blocking the final pathway of platelet aggregation, the fibrinogen-mediated cross-linkage of platelets, preventing thrombosis. There are as of now, three approved agents in this category:

- Abciximab
- Eptifibatide
- Tirofiban

All three are administered by IV bolus followed by infusion. They target the same receptor, although with different affinities and specificities.

	Eptifibatide	Tirofiban	Abciximab
Structure	Cyclic heptapeptide	Non-peptide	Antibody Fab fragment
Molecular Weight (kDa)	Small molecule (0.832)	Small molecule (0.495)	Small molecule (47.6)
Affinity (K_D)	120 nM	15 nM	5 nM
Specificity for Gp IIb/IIIa	Yes	Yes	No
Excretion	Renal	Renal	Unknown
Plasma half-life	2.5 h	2 h	10-30 min
Receptor inhibition	Reversible	Reversible	Irreversible
Onset of action	Within 20 min	Within 20 min	Within 20 min
Platelet recovery	Fast (2-4 h)	Fast (2-4 h)	Slow (~48 h)
Storage	Refrigeration required	Room temperature	Refrigeration required
Approved indications	ACS (UA/NSTEMI) and PCI	ACS (UA/NSTEMI/STEMI) and PCI	ACS (UA) and PCI
Bolus	Double	Single	Single
Infusion	20-24 h	12-24 h	12 h

Current guideline recommendations for the use of GPIs are as follows:

- In patients undergoing PCI and receiving prasugrel or ticagrelor, GPI use should be restricted to bailout of thrombotic complications.
- In patients with NSTE-ACS and high-risk features (e.g., elevated troponin) not adequately pretreated with clopidogrel or ticagrelor, it is useful to administer a GPI (abciximab, double-bolus eptifibatide, or high-dose bolus tirofiban) at the time of PCI.
- It is reasonable to begin treatment with an intravenous GPI at the time of primary PCI (with or without stenting or clopidogrel pretreatment) in selected patients with STEMI who are receiving unfractionated heparin (UFH).
- GPIs should be considered for bailout therapy if there is angiographic evidence of massive thrombus, slow or no-reflow or a thrombotic complication.

Contributed By

Hardik Gandhi
Associate Manager (International Division), Cadila Healthcare Ltd.

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Clinician's stance:

Physician's Opinion: Role of Pharmacists in Antimicrobial Stewardship

Antimicrobial resistance is a global and a local problem. Pharmacists can play a very important role in educational interventions as well as in stewardship program. Evidences suggest that clinical pharmacist can create a positive impact in antimicrobial management on clinical, microbiological and financial outcomes at community, emergency, critical care units, outpatient and also in indoor hospital setting. Pharmacist interventions significantly led to decrease in duration of IV antimicrobial treatment, improved patient outcomes and in ascertaining their rational use. Specialist pharmacists in form of "Antibiotic pharmacists" are in the ascendancy and their role have become an established feature of the antibiotic stewardship scenery in National Health Service (NHS) hospitals throughout the UK. They are member of infection control team with overall responsibility for initiatives to promote rational antibiotic prescribing.

Role of pharmacist is slowly evolving from efficient procurement, distribution and safe and secure handling of medicines to clinical services that to in a specialized sphere like antibiotic stewardship programs. Their role in this program is to monitor antibiotic use, advise clinicians, educate all grades of healthcare workers and help to develop policy. The pharmacist modification of intravenous treatment to oral antimicrobials and automatic stop orders could greatly enhance patient care and well being. This may indirectly help in cost, antibiotic side -effects and resistance.

Up to 50% of antimicrobial use in the inpatient setting is unneeded or inappropriate. Viruses may cause acute bronchitis, however 80% of patients are prescribed with antibiotics. Viral Infections can cause cold, flu, bronchitis, runny noses which may not required the use of antibiotics. Again, mild sinus infections or ear infections may not need antibiotics. Diarrhea may not be due to GI infections and may be due to non infective cause. On the contrary patient on antibiotics may have antibiotic associated diarrhea of which infection with Clostridium difficile infection due to antibiotic use may be life threatening. Sometimes, blood Stream infection and catheter induced urinary tract infection or hospital infections maybe fungal in origin and for the management of which antibiotics are used antibiotic may lead to further deterioration.

Stewardship means careful and responsible management. The term 'antimicrobial stewardship'(AMS) is defined by NICE guidelines as "an organizational or healthcare-system-wide approach to promote and monitor judicious use of antimicrobials to preserve their future effectiveness. "One of the other aim of antimicrobial stewardship is to reduce incidence of colonization with antibiotic-resistant bacteria and Clostridium difficile infection. "Prescriber overview" is very important in Antimicrobial stewardship. Empiric antibiotic selection is determined as per local resistance patterns.

A study which was carried out in one of the hospitals of Saudi Arabia on use of three antimicrobials-caspofungin, imipenem, and meropenem; was reviewed by the clinical pharmacist for four periods, pre and post implementation of policy. These resulted in statistically significant reduction in duration of antimicrobial therapy of imipenem (37%) and meropenem (37%) from baseline. In India also pharmacists should play important role in stewardship team to tackle antimicrobial resistance.

References :

- Garau J, Bassetti M; Role of pharmacists in antimicrobial stewardship programmes.Int J Clin Pharm. 2018 Oct;40(5):948-952. doi: 10.1007/s11096-018-0675-z.
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Dr. Jitendra D. Lakhani, M.D.
Professor of Medicine and Academic Director,
SBKS Medical Institute and Research Institute,Pipalia.

Student's Outlook:

Clinical Project work experience by Pharm. D student

The challenge stems from trying to sum up the value of internship in few paragraphs.

Throughout these months, I have been preparing myself to face all the brainstorming challenges related to Pharm. D internship ahead. My internship by far has taught me more than I could have ever imagined. It includes some of the most beneficial lessons. I have realized that active participation in ward round and evaluation of cases thoroughly, make us quite efficient to perform various clinical pharmacy services and after indentifying the positive outcomes of these activities, the definite role of clinical pharmacist in hospital can be proven.

As a part of Student Exchange Program, 15 days internship at Bangalore BAPTIST hospital was a great leaning experience during which we got the exposure of working pattern of clinical pharmacist at corporate. I explain the clinical pharmacist role by one of the case, I came across of a 42 year old male patient with alcoholic hepatitis. Several clinically and therapeutically significant inputs I could provide included:

- Blurred vision in the patient, which could be due to tab. Haloperidol.
- Tab. Quetiapine can be a better alternative to tab. Haloperidol.
- Lab reports of the patient showed decreased levels of creatinine and platelets for which steroids can be considered as therapy.
- Moreover, steroids are also the first line treatment of alcoholic hepatitis.
- Tab. Spironolactone was suggested to be added as the ultrasound of the patient showed moderate ascites.
- Even the cholesterol levels of the patient were high, which was made into notice.
- Dietary suggestions were also made.

Megha Patel
Pharm. D Intern

Famous Scientist.

Martyn Poliakoff is a global leader in the field of green chemistry with a specific interest in the applications of supercritical fluids. These highly compressed gases possess properties of gases and liquids that permit interesting chemical reactions without the need for organic solvents, which endanger both health and the environment. He is a Research Professor in Chemistry at the University of Nottingham, where he started as a Lecturer in Inorganic Chemistry in 1979. His contributions have enabled the development of supercritical carbon dioxide and water solvent systems to replace traditional organic solvents at the industrial scale.. Sir Martyn Poliakoff CBE, FREng, FRS, FRSC

Away from the lab, as Foreign Secretary and Vice-president of the Royal Society from 2011-16, he worked to represent and to further the impact of UK and Commonwealth science around the world. He has championed collaboration between chemists and chemical engineers.

He is a Foreign Member of the Russian Academy of Sciences and Associate Fellow of the Ethiopian Academy of Sciences. Martyn is widely recognized thanks to his participation in a series of YouTube videos, The Periodic Table of Videos. This popular science project introduces the general public to the chemical elements of the periodic table. He received a knighthood in 2015 — the culmination of his pursuit of excellence in research, his service as an ambassador for UK science and his public outreach work.

Source:

https://royalsociety.org/people/martyn-poliakoff-12107/

Molecule of the Millennium: Cannabinoids

There are few subjects that can stir up stronger emotions among doctors, scientists, researchers, policy makers, and the public than medical marijuana. Is it safe? Should it be legal? Decriminalized? Has its effectiveness been proven? What conditions is it useful for? Is it addictive? How do we keep it out of the hands of teenagers? Is it really the "wonder drug" that people claim it is? Is medical marijuana just a ploy to legalize marijuana in general? Least controversial is the extract from the hemp plant known as CBD (which stands for cannabidiol) because this component of marijuana has little, if any, intoxicating properties. Marijuana itself has more than 100 active components. THC (which stands for tetrahydrocannabinol) is the chemical that causes the "high" that goes along with marijuana consumption. CBD-dominant strains have little or no THC, so patients report very little if any alteration in consciousness.

Patients do, however, report many benefits of CBD, from relieving insomnia, anxiety, spasticity, and pain to treating potentially life-threatening conditions such as epilepsy. One particular form of childhood epilepsy called Dravet syndrome is almost impossible to control, but responds dramatically to a CBD-dominant strain of marijuana called Charlotte's Web. The videos of this are dramatic. The most common use for medical marijuana in the United States is for pain control. While marijuana isn't strong enough for severe pain (for example, post-surgical pain or a broken bone), it is quite effective for the chronic pain that plagues millions of Americans, especially as they age. Part of its allure is that it is clearly safer than opiates (it is impossible to overdose on and far less addictive) and it can take the place of NSAIDs such as Advil or Aleve, if people can't take them due to problems with their kidneys or ulcers or GERD.

In particular, marijuana appears to ease the pain of multiple sclerosis, and nerve pain in general. This is an area where few other options exist, and those that do, such as Neurontin, Lyrica, or opiates are highly sedating. Patients claim that marijuana allows them to resume their previous activities without feeling completely out of it and disengaged.

Along these lines, marijuana is said to be a fantastic muscle relaxant, and people swear by its ability to lessen tremors in Parkinson's disease. It's quite successful for fibromyalgia, endometriosis, interstitial cystitis, and most other conditions where the final common pathway is chronic pain.

Marijuana is also used to manage nausea and weight loss, and can be used to treat glaucoma. A highly promising area of research is its use for PTSD in veterans who are returning from combat zones. Many veterans and their therapists report drastic improvement and clamor for more studies, and for a loosening of governmental restrictions on its study. Medical marijuana is also reported to help patients suffering from pain and wasting syndrome associated with HIV, as well as irritable bowel syndrome and Crohn's disease.

This is not intended to be an inclusive list, but rather to give a brief survey of the types of conditions for which medical marijuana can provide relief. As with all remedies, claims of effectiveness should be critically evaluated and treated with caution. Canada legalizing the use of marijuana recently also is a big step forward in the field **of** cannabinoids research and use. We can therefore expect other countries to also follow this trend .

Source:

https://www.health.harvard.edu/blog/medical-marijuana-2018011513085

DRUGS IN CLINICAL TRIALS:

National Institutes of Health (NIH) initiates human trial of live, attenuated Zika virus vaccine – August, 2018, Vaccinations has been initiated in a first-in-human trial of an experimental live, attenuated Zika virus vaccine developed by scientists at the National Institute of Allergy and Infectious Diseases (NIAID), part of the NIH. The trial will enroll a total of 28 healthy, non-pregnant adults ages 18 to 50 at the Johns Hopkins Bloomberg School of Public Health Center for Immunization Research in Baltimore, Maryland, and at the Vaccine Testing Center at the Larner College of Medicine in Burlington. Dr. Stephen Whitehead, of NIAID's Laboratory of Viral Diseases, led the efforts to develop the experimental vaccine. Genetic engineering techniques were used to create a chimeric virus, made by combining genes from multiple viruses. Chimeric virus consists of a dengue virus type 4 backbone that expresses Zika virus surface proteins. The chimeric virus is live but attenuated, or weakened, so it cannot cause disease in recipients. When injected into the body, the weakened virus should prompt an immune response. The Phase 1 clinical trial will analyze this response in participants and assess the safety of the experimental vaccine, which showed promise in earlier tests in rhesus macaques (monkeys).

Source: http://www.pharmabiz.com/NewsDetails.aspx?aid=110702&sid=2

GSK phase 3 study in Japanese patients to evaluate Daprodustat to treat anaemia associated with chronic kidney disease (CKD) meets primary endpoint – October, 2018, GSK has announced the results from a randomised, double blind, active-controlled phase 3 study in Japanese patients to evaluate Daprodustat, an oral hypoxia-inducible factor prolyl hydroxylase inhibitor, as a potential treatment for anaemia associated with CKD. Results from the 52-week study of 271 haemodialysis-dependent patients, showed that oral Daprodustat met its primary endpoint of non-inferiority to Darbepoetin alfa IV injection, as measured by mean change from baseline in haemoglobin levels over Weeks 40 to 52. The percentage of patients who experienced at least one on-therapy adverse event was 93 per cent in the Daprodustat group and 97 per cent in the control group. The most common adverse events across the treatment groups were nasopharyngitis, gastrointestinal events, and shunt stenosis.

Source: http://www.pharmabiz.com/NewsDetails.aspx?aid=112026&sid=2

RedHill Biopharma Ltd. announces Positive Top-Line Results from Confirmatory Phase 3 Study with Talicia for H. pylori Infection – December, 2018, RedHill Biopharma Ltd., announced today positive top-line results from the ERADICATE Hp2 study, a two-arm, randomized, double-blind, active comparator-controlled, confirmatory Phase 3 study with Talicia (RHB-105) for *H. pylori* infection. The ERADICATE Hp2 study demonstrated 84% eradication of *H. pylori* infection with Talicia versus 58% in the active comparator arm in the intent-to-treat (ITT) population ($p<0.0001$). Talicia is a novel and proprietary fixed-dose, all-in-one oral capsule combination of two antibiotics, rifabutin and amoxicillin, and a PPI, omeprazole. The study investigated 455 dyspepsia patients with confirmed *H. pylori* infection at 55 clinical sites across the U.S. Subjects were randomized 1:1 to receive four capsules, three times daily, of either Talicia or the active comparator, a dual therapy amoxicillin and omeprazole regimen at equivalent doses, for a period of 14 days.

Source: https://www.drugs.com/clinical_trials/redhill-announces-positive-top-line-results-confirmatory-phase-3-study-talicia-h-pylori-infection-18007.html

DIETARY RESEARCH:

Link between neonatal vitamin D deficiency and schizophrenia confirmed

Newborns with vitamin D deficiency have an increased risk of schizophrenia later in life, a team of researchers has reported. The study, led by Professor John McGrath from The University of Queensland (UQ) in Australia and Aarhus University in Denmark, found newborns with vitamin D deficiency had a 44% increased risk of being diagnosed with schizophrenia as adults compared to those with normal vitamin D levels. The team made the discovery by analysing vitamin D concentration in blood samples taken from Danish newborns between 1981 and 2000 who went on to develop schizophrenia as young adults. The researchers compared the samples to those of people matched by sex and date of birth who had not developed schizophrenia. Professor McGrath said schizophrenia is associated with many different risk factors, both genetic and environmental, but the research suggested that neonatal vitamin D deficiency could possibly account for about 8% of schizophrenia cases in Denmark. The discovery could help prevent some cases of the disease by treating vitamin D deficiency during the earliest stages of life.

Source: https://www.sciencedaily.com/releases/2018/12/181206085113.htm

NEW MOLECULE ENTITY & NEW THERAPEUTIC BIOLOGICAL PRODUCT

Tecovirimat

The U.S. Food and Drug Administration approved Tecovirimat, the first drug with an indication for treatment of smallpox. It is an inhibitor of the orthopoxvirus VP37 envelope wrapping protein and is indicated for the treatment of human smallpox disease in adults and paediatric patients weighing at least 13 kg. Though the World Health Organization declared smallpox, a contagious and sometimes fatal infectious disease, eradicated in 1980, there have been long standing concerns that smallpox could be used as a bioweapon. The safety of Tecovirimat was evaluated in 359 healthy human volunteers without a smallpox infection. The most frequently reported side effects were headache, nausea and abdominal pain.

Source: https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm613496.htm

Glasdegib

The U.S. Food and Drug Administration approved Glasdegib tablets to be used in combination with low-dose cytarabine (LDAC), a type of chemotherapy, for the treatment of newly-diagnosed acute myeloid leukemia (AML) in adults who are 75 years of age or older or who have other chronic health conditions or diseases (comorbidities) that may preclude the use of intensive chemotherapy. The efficacy of Glasdegib was studied in a randomized clinical trial in which 111 adult patients with newly diagnosed AML were treated with either Glasdegib in combination with LDAC or LDAC alone. The trial measured overall survival (OS) from the date of randomization to death from any cause. Results demonstrated a significant improvement in OS in patients treated with Glasdegib.

Source: https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm626443.htm

NEW DRUG APPROVAL

FDC of Ceftolozane (1.0 gm) and Tazobactum (0.5gm) injection

"Indicated for the treatment of patients 18 years or older with the following infections caused by designated susceptible microorganisms:

Complicated intra-abdominal infections (cIAI) caused by the following Gram-negative and Gram-positive microorganisms: Enterobacter cloacae, Escherichia coli, Klebsiella oxytoca, Klebsiella pneumoniae, Proteus mirabilis, Pseudomonas aeruginosa, Bacteroides fragilis, Streptococcus anginosus, Streptococcus constellatus, and Streptococcus salivarius in combination with metronidazole in ICU settings only.

Complicated urinary tract infections (cUTI), including pyelonephritis, caused by the following Gram-negative microorganisms: Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, and Pseudomonas aeruginosa in ICU settings only.

Drug dosing for complicated intra-abdominal infections: 1.5 g IV q8hr x 4-14 days

Drug dosing for complicated Urinary tract infections: 1.5 g IV q8hr x 7days

Side effects Headache, nausea, Diarrhea, Pyrexia, Constipation, Insomnia, Vomiting, Hypokalemia, increased ALT & AST

Serious adverse effects: The frequency was low (<1%) and without particular pattern in prior cIAI phase 3 trial and the earlier phase 2 trials.

Warnings: Clinical cure rates lower in patients with baseline CrCl of 30 to 50 mL/min when compared with other antibiotics in clinical trials.

Source:

New drugs approval may 2018 to till date. < https://cdsco.gov.in/opencms/opencms/en/Approval_new/Approved-New-Drugs/ >

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4264669/

https://reference.medscape.com/drug/zerbaxa-ceftolozane-tazobactam-999969

Recommended composition of influenza virus vaccines for use in the 2019 southern hemisphere influenza season

WHO convenes technical consultations in February and September each year to recommend viruses for inclusion in influenza vaccines for the northern and southern hemisphere influenza seasons, respectively. This recommendation relates to the influenza vaccines for use in the southern hemisphere 2019 influenza season. A recommendation will be made in February 2019 relating to vaccines that will be used for the northern hemisphere 2019-2020 influenza season. For countries in tropical and subtropical regions, WHO recommendations on influenza vaccine composition (northern hemisphere or southern hemisphere) are available on the WHO Global Influenza Programme.

It is recommended that egg based quadrivalent vaccines for use in the 2019 southern hemisphere influenza season contain the following: - an A/Michigan/45/2015 (H1N1) pdm09-like virus; - an A/Switzerland/8060/2017 (H3N2)-like virus; - a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage); and - a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage). It is recommended that egg based trivalent vaccines for use in the 2019 southern hemisphere influenza season contain the following: - an A/Michigan/45/2015 (H1N1) pdm09-like virus; - a A/Switzerland/8060/2017 (H3N2)-like virus; and - a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage). 27 September 2018 Page 7 of 9 It is recommended that the A(H3N2) component of non-egg-based vaccines for use in the 2019 southern hemisphere influenza season be an A/Singapore/INFIMH-16- 0019/2016-like virus together with the other vaccine components as indicated above.

Source:

https://www.who.int/influenza/vaccines/virus/recommendations/201809_recommendation.pdf?ua=1

NEW WHO GUIDELINES FOR THE PREVENTION AND CONTROL OF CARBAPENEM-RESISTANT ENTEROBACTERIACEAE, ACINETOBACTER BAUMANNII AND PSEUDOMONAS AERUGINOSA IN HEALTH CARE FACILITIES

The objective of the guidelines is an evidence-based recommendation on the early recognition and specific required IPC practices and procedures to effectively prevent the occurrence and control the spread of CRE-CRAB-CRPsA colonization and/or infection in acute health care facilities; an evidence-based framework to help inform the development and/or strengthening of nation and facilitate IPC policies and programmes to control the transmission of CRE-CRAB-CRPsA in a variety of health care settings. Following are the recommendations provided by WHO.

- Multimodal IPC strategies should be implemented to prevent and control CRE-CRAB-CRPsA infection or colonization
- Hand hygiene best practices according to the WHO guidelines on hand hygiene in health care should be implemented.
- Surveillance of CRE-CRAB-CRPsA infection(s) should be performed, and surveillance cultures for asymptomatic CRE colonization should also be performed, guided by local epidemiology and risk assessment. Populations to be considered for such surveillance include patients with previous CRE colonization, patient contacts of CRE colonized or infected patients and patients with a history of recent hospitalization in endemic CRE settings.
- Contact precautions should be implemented when providing care for patients colonized or infected with CRE-CRAB-CRPsA
- Patients colonized or infected with CRE-CRAB-CRPsA should be physically separated from non-colonized or non-infected patients using single room isolation; or cohorting patients with the same resistant pathogen
- Compliance with environmental cleaning protocols of the immediate surrounding area (that is, the “patient zone”) of patients colonized or infected with CRE-CRAB-CRPsA should be ensured.
- Surveillance cultures of the environment for CRE-CRAB-CRPsA may be considered when epidemiologically indicated.
- Monitoring, auditing of the implementation of multimodal strategies and feedback of results to health care workers and decision-makers.

Source:

http://apps.who.int/iris/bitstream/handle/10665/259462/9789241550178-eng.pdf?sequence=1

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"Human serum albumin carrier mediated Tacrolimus-Berberine nanoparticles for therapy of Rheumatoid Arthritis"

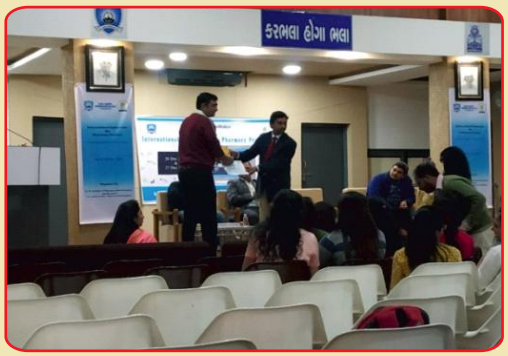
This study aims to formulate HSA targeted conjugate nanoparticle of tacrolimus with berberine as a novel drug delivery to treat **Rheumatoid arthritis (RA)** with effective therapeutic index and minimum ADRs. **Rheumatoid arthritis (RA)** is a disease that affects the joints and also leads to bone and cartilage destruction. Angiogenesis is the process of new blood vessel formation which is highly active in RA. Newly formed vessels can maintain the chronic inflammatory state by transporting inflammatory cells to sites of synovitis, and supply nutrients oxygen to the pannus. However, Patients with active rheumatoid arthritis frequently develop hypoalbuminemia, primarily caused by high **Human serum albumin (HSA)** uptake at the sites of inflammation. The permeability of the blood-joint barrier for HSA in rheumatoid arthritis patients is markedly increased. Hence this concept can be used to target drugs to inflamed joints of patients suffering from RA using HSA as a carrier. **Tacrolimus (TAC)** is a drug used for the treatment of RA. It exerts its immunosuppressive effects by the inhibition of calcineurin, leading to interference with T-cell activation and supress production of inflammatory cytokines, healing of joint inflammation, reduction of bone and cartilage destruction, improvement of functional status and relief from arthritic pain. This drug is associated with some major dose related adverse drug reactions (ADRs) like nephrotoxicity, infectious and malignant complications, neurotoxicity, diabetogenic and hypertension. Tacrolimus is BCS class II drug having low aqueous solubility and low bioavailability due to its metabolism through gut and also due to its incomplete absorption through GIT. The daily dose of tacrolimus ranges from 0.5 to 5 mg for a patient suffering from RA. Number of clinical studies displayed that even 3 mg of daily dose may leads to adverse effects resulting discontinuation of the therapy. Thus it has been hypothesised that adverse effect upto some extent can be reduced if very low dose of tacrolimus is combined with **Berberine (BBR)**, a herbal origin molecule effective in RA, which may compensate the effect of tacrolimus and reduce its ADRs. BBR is BCS class IV drug having low aqueous solubility and low permeability. Berberine plays an active role in the inhibition of Angiogenesis which is the process of new blood vessel formation. Thus it is effectively used in the treatment of RA. However BBR also exhibits anti-oxidant effect, which plays vital role in protection of organs like kidneys and liver, in addition it is also used to cure neurotoxicity, diabetes mellitus, hypertension, and some bacterial Infections, which all are the major ADRs of TAC.

Mr. Snehal Patel
(Alumni, Department of Pharmacy, SVDU)

Dr. Hemraj Rajput was awarded third prize for the best poster during 6th National conference on "ABMH PharmaCon-2018 on 15th & 16th December, 2018.

Dr. Vikas Chandrakar chaired a session during 6th National conference on "ABMH PharmaCon-2018 on 15th & 16th December, 2018.

Dr. Ghanshyam Parmar served as resource person during 11th Refresher course at Sigma institute of Pharmacy.



Dr. Kushal Gohel received First Prize in poster presentation competition at International Conference on Pharmacy Practice, KBIPER, Gandhinagar on 27th December, 2018.

Dr. Ghanshyam Parmar received first prize in oral presentation competition at International Conference on Herbal Medicines: Research and Commerce- Global perspectives on 29th December 2018

STUDENT ACHIEVEMENTS

Ms. Bhumika Patel and **Mr. Priyank Patel** of Fourth Year B Pharm were awarded First prize and third prize respectively for the best poster during GUJCOST Sponsored Two Day National Seminar & Workshop,
Sumandeep Vidyapeeth on 25th August 2018.

Ms. Mahek Mistry of Sixth Year Pharm D. was awarded second prize for the best poster during 6th National conference on "ABMH PharmaCon-2018 on 15th & 16th December

DEPARTMENT OF PHARMACY ACTIVITIES

Pharmacy week 2018-19

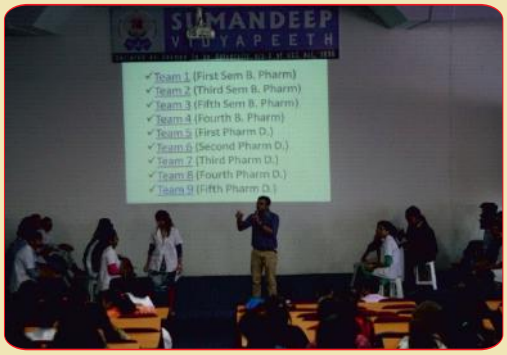
Department of Pharmacy, Sumandeep Vidyapeeth organized **Pharmacy Week-2018** from 26th to 28th November, 2018. The theme of Pharmacy week celebration was **"The Pharmacist for a Healthy India".** Program started with inauguration followed by various events such as Rangoli Competition, Essay Competition, Patient Counseling Competition, Quiz Competition, Debate and Documentary Competition. A Health Awareness Programme was also organized at **'Banaj'** on 28th Nov, 2018 as a part of Pharmacy Week. It was aimed to carry out health care awareness for prevalent diseases, basic physical examination and dispensing of drugs along with patient counselling.

World Diabetes day & Children's Day

Department of Pharmacy, Sumandeep Vidyapeeth, organized a glucose monitoring and diabetes examination camp at village 'Banaj'. This medical camp included a physician, dentist, nurses and pharmacists. A medical camp especially for children also was organized as a part of Children's day celebration. This camp was organised in a Primary school at Banaj on 14th November, 2018.

Student exchange program

A distant internship programme at BAPTIST Hospital, Bangalore, Karnataka was arranged as per MOU between Dept. of Pharmacy Sumandeep Vidyapeeth and Karnataka College of Pharmacy, Bangalore from 22-8-2018 to 07-09-2018. During this programme, students were sent to Bangalore Baptist Hospital, Bangalore where students were posted in various departments like General Medicine, ICU, oncology, surgery and HICU.



Gujcost sponsored two day national seminar & workshop on QbD

Dept. of Pharmacy organized **Gujcost sponsored two day national seminar & workshop on QbD** on 24th & 25th August, 2018. A total of 213 delegates attended the seminar. Speakers elaborated on the Design of experiments and different types of designs used in the optimization of pharmaceutical formulations. At the end of first day there was a **poster session** at Department of Pharmacy. A workshop was conducted on the second day followed by certificate distribution.

Refresher Course

Dept. of Pharmacy organized **Gujarat State Pharmacy Council sponsored "Two Day Refresher Course for Registered Pharmacists"** on **24th & 25th** November, 2018 . A total of 121 delegates attended the Refresher course. Mr. Gilbert Macwan, Registrar, Gujarat State Pharmacy Council was the Chief Guest of the program. Speakers from various colleges delivered talk on different topics. An objective test was taken at the end of the lectures and certificates were distributed

Pharmashine

Department of Pharmacy, SV celebrated **Pharmashine** on 21st December, 2018. Pharmashine is the annual cultural program of Department of Pharmacy. The event was diligently organized by the Department student council with the help of departmental cultural committee. The program included competitions such as singing, dancing, fashion show, drama and mime.

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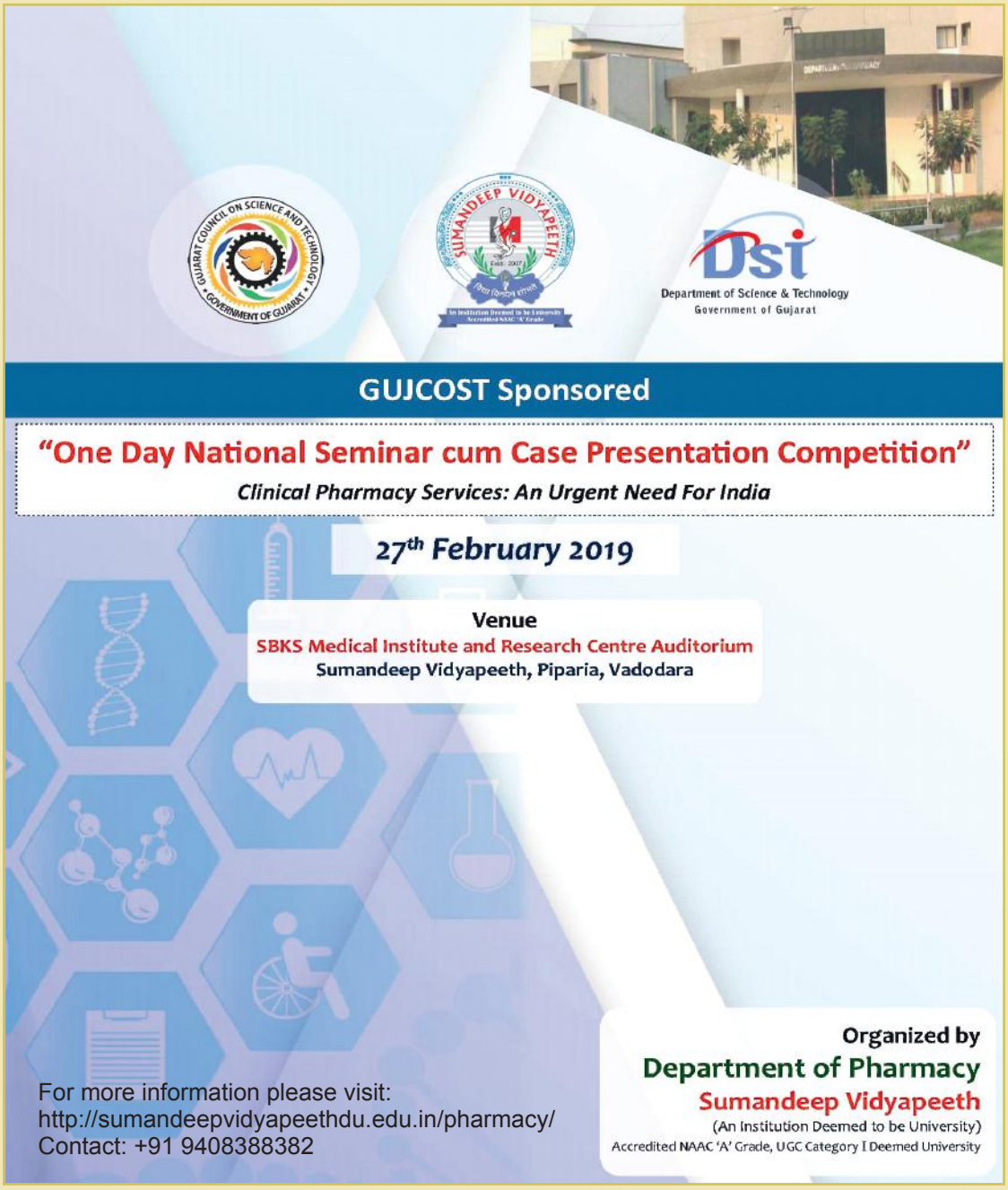

Book-Post

To, ...

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