



PHARMAHORIZON

A PANORAMA IN THE WORLD OF HEALTH SCIENCES
A NEWSLETTER FROM DEPARTMENT OF PHARMACY, SUMANDEEP VIDYAPEETH



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PATRON

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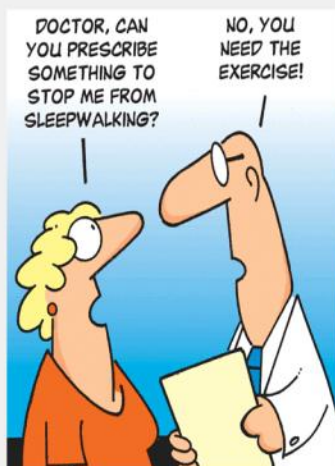
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PATRON'S VIEW:



The Department of Pharmacy feels proud to publish a very inimitable and knowledge resource Bimonthly newsletter named "Pharmahorizon". Nowadays, the focus of the pharmacy profession is increasingly shifting from the industrial pharmacy to the ultimate beneficiary of the services to the patient. The world of pharmacy is expending with the invention of new molecules for different diseases. It is the pharmacist's duty to keep the doctors updated about the new molecules and their pharmacological outcomes. Therefore, with this vision an effort has been made in this direction to keep our medical and pharmaceutical fraternity always updated with the new drugs. In addition to this, "Pharmahorizon" also preaches students with the technique of solving

crossword puzzle related to the medical subject and make them healthier by providing laughter medicine. It is a reflection of events and programs conducted at department of pharmacy and a very good opportunity for the students to participate in academic activity by giving their articles to be published in the students' corner section.

The editorial staff of "Pharmahorizon" invites medical and pharmaceutical professionals to contribute to the newsletter to serve as a platform for the exchange of experiences and to stimulate dialogue on topics important to clinical pharmacists caring for patients around the globe. I hope you will find the articles published in this issue of interest and relevance to you, and I look forward to your contributions for future issues of the newsletter.

Dr. A K Seth, M.Pharm, PhD
HOD, DoP, SV

UNRAVELING THE STRUCTURE OF THE RIBOSOME

Nobel Prize (2009)
(Chemistry)

Sir Venkatraman
Ramakrishnan (Venky)



Venky is an Indian-born American and British structural biologist. He was born in 1952 at Chidambaram, Tamil Nadu. He did his BSc degree in Physics in 1971 at the M.S. University of Baroda, on a National Science Talent Scholarship. He obtained his PhD degree in Physics from Ohio University in 1976. He then spent two years studying biology as a graduate student at the University of California, San Diego while making a transition from theoretical physics to biology. In his laboratory, Venky determined the complete molecular structure of the 30S subunit of the ribosome and its complexes with several antibiotics. The detailed structure of antibiotics bound to ribosomal subunits is leading to the development of new and more effective antibiotics that may prove useful against resistant strains of pathogenic bacteria. More recently, his laboratory has determined the atomic structure of the whole ribosome in complex with its tRNA and mRNA ligands.

He currently works at the MRC Laboratory of Molecular Biology in Cambridge, England. Upon the retirement of Sir Paul Nurse, Sir Venkataraman will take up the post of President of the Royal Society on November 30, 2015.

Source: http://en.wikipedia.org/wiki/Venkatraman_Ramakrishnan

MOLECULE OF THE MELLINIUM

Perispinal Etanercept: A new therapeutic approach for stroke victims

A single injection, then a five-minute wait...

That's all it took for hundreds of stroke and traumatic brain injury patients nationwide to reverse years of debilitation. Now they're walking more steadily, reading more easily, concentrating better, speaking more clearly and regaining use of once-rigid limbs - long after giving up hope that their bodies would ever respond.

Dr. Edward Tobinick has patented method for delivering the anti-inflammatory medicine etanercept to the brain is getting notice around the world as a "radical breakthrough" in the treatment of chronic neurological dysfunction.

Post-stroke disability represents a major public health problem throughout the world. Current drug treatments are grossly inadequate. The world stroke research community recognizes the urgent need for improved stroke treatments.

Brain injury from stroke and traumatic brain injury (TBI) may result in a persistent neuroinflammatory response in the injury penumbra. This response may include microglial activation and excess levels of tumour necrosis factor (TNF). Previous experimental data suggest that etanercept, a selective TNF inhibitor, has the ability to ameliorate microglial activation and modulate the adverse synaptic effects of excess TNF. Perispinal administration may enhance etanercept delivery across the blood-CSF barrier.

The etanercept stroke studies, each of which documents dramatic clinical improvement following perispinal etanercept administration, therefore provide level 2 evidence of the effectiveness of perispinal etanercept for post-stroke neurological dysfunction. With the additional weight of recent basic science studies reporting favourable effects of etanercept in a diverse group of brain disorders, and scientists from several independent academic centres reporting favourable effects of TNF inhibition in other stroke models, now is the time to seriously consider systematic testing of perispinal etanercept for brain injury, especially in stroke.

Source: CNS Drugs. 2014 Aug;28(8):679-97.

Whatever the mind of man can conceive and believe, it can achieve.

- Napoleon Hill

Put your heart, mind, and soul into even
your smallest acts.
This is the secret of success.

- Swami Sivananda

New WHO guidelines for diarrhoea management with Zinc supplementation

Diarrhoea Treatment Guidelines Including new recommendations for the use of ORS and zinc supplementation for Clinic-Based Healthcare Workers.

Zinc and diarrhoea: Zinc is an important micronutrient for a child's overall health and development. Zinc is lost in greater quantities during diarrhoea. Replacing the lost zinc is important to help the child to recover and to keep the child healthy in the coming months.

Zinc supplements given during an episode of diarrhoea reduce the duration and severity of the episode, and lower the incidence of diarrhoea in the following 2–3 months. For these reasons, all patients with diarrhoea should be given zinc supplements as soon as possible after the diarrhoea has started.

Children less than 6 months of age should receive ½ tablet once a day for 10/14 days. Children 6 months and older receive 1 tablet per day for 10/14 days. Supplementary zinc benefits children with diarrhoea because it is a vital micronutrient essential for protein synthesis, cell growth and differentiation, immune function, and intestinal transport of water and electrolytes.

Guidelines on the use of zinc supplementation in the management of diarrhoea may accelerate progress towards the United Nations Millennium Development Goal 4 for reducing child mortality by two-thirds by 2015.

For more information:

http://www.who.int/maternal_child_adolescent/documents/a85500/en/



NEW DRUG APPROVAL

Cosentyx (Secukinumab) Novartis; For the treatment of plaque psoriasis, Approved January 2015

It is a human IgG1 monoclonal antibody that selectively binds to the interleukin-17A (IL-17A) cytokine and inhibits its interaction with the IL-17 receptor. IL-17A is a naturally occurring cytokine that is involved in normal inflammatory and immune responses. Secukinumab inhibits the release of proinflammatory cytokines and chemokines. Cosentyx is specifically indicated for the treatment of moderate to severe plaque psoriasis in adult patients who are candidates for systemic therapy or phototherapy.

The recommended dose is 300 mg by subcutaneous injection at weeks 0, 1, 2, 3, and 4 followed by 300 mg every 4 weeks. Each 300 mg dose is given as 2 subcutaneous injections of 150 mg.

Avycaz (Ceftazidime-Avibactam) Actavis; For the treatment of complicated intra-abdominal and urinary tract infections, Approved February 2015

Avycaz (Ceftazidime-Avibactam) is a combination of a cephalosporin and a beta-lactamase inhibitor.

Avycaz in combination with metronidazole, is indicated for the treatment of complicated intra-abdominal infections (cIAI) caused by the following susceptible microorganisms: *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Providencia stuartii*, *Enterobacter cloacae*, *Klebsiella oxytoca*, and *Pseudomonas aeruginosa* in patients 18 years or older. Avycaz is also indicated for the treatment of complicated urinary tract infections (cUTI) including pyelonephritis caused by the following susceptible microorganisms: *Escherichia coli*, *Klebsiella pneumoniae*, *Citrobacter koseri*, *Enterobacter aerogenes*, *Enterobacter cloacae*, *Citrobacter freundii*, *Proteus spp.*, and *Pseudomonas aeruginosa* in patients 18 years or older.

Source: <http://www.centerwatch.com/drug-information/fda-approved-drugs/>

DRUG SAFETY COMMUNICATION

Pregabalin: Latest Safety Evidence and Clinical Implications for the Management of Neuropathic Pain

Used mainly for the management of neuropathic pain, pregabalin (PGB) is a gabapentinoid or anticonvulsant that was initially developed as an antiepileptic agent. Dizziness and somnolence both arise with moderate frequency; dizziness takes place in 31% of patients treated with PGB compared with 9% of those receiving placebo. Somnolence is slightly less common, being experienced in 22% of patients treated with PGB compared with 7% of those receiving placebo. Dizziness and somnolence, alone or together, can impair abilities for performance of potentially dangerous job functions, such as driving or operating complex or heavy machinery. These Adverse Events (AEs) often occur when PGB is initiated, with these AEs often diminishing after weeks of therapy with PGB. For clinical trials examining Diabetic Peripheral Neuropathy or Postherpetic Neuralgia, 9–14% of patients receiving PGB and 4–7% of those receiving placebo discontinued treatment prematurely due to AEs. As would be anticipated based upon their frequency, dizziness (3–4%) and somnolence (2–3%) are the most frequent AEs which has led to drug discontinuation. Its potential adverse effects, including the most commonly noted features of sedation, dizziness, peripheral edema and dry mouth. When PGB discontinuation is planned, a gradual tapering should occur. An abrupt discontinuation of PGB has uncommonly been linked to development of a syndrome similar to alcohol or benzodiazepine withdrawal.

Safety of Dipeptidyl Peptidase 4 Inhibitors: A Perspective Review

Dipeptidyl peptidase 4 (DPP-4) inhibitors are a relatively new class of oral antihyperglycemic agent that enhance insulin secretion by reducing degradation of endogenous glucagon-like peptide-1 (GLP-1). Currently, Sitagliptin, Vildagliptin, Saxagliptin, Linagliptin and Alogliptin have been approved by the US Food and Drug Administration or the European Medicines Agency for use in patients with type 2 diabetes. Their glycemic efficacy has been well documented; however, data regarding their long-term safety are as yet inconclusive. While preclinical studies have indicated a potential cardioprotective effect of DPP-4 inhibitors, current clinical data from cardiovascular safety trials suggest a neutral effect on cardiovascular outcomes. Moreover, postmarketing experience has given rise to concerns about specific adverse events, including pancreatitis and hypersensitivity reactions. The role of DPP-4 in immune functions, cell growth and apoptosis has raised concerns regarding a possible association with infections.

Source: <http://www.medscape.com/viewarticle/838788>

The Future Belongs to those
who believe in the beauty of
their dreams.

- Eleanor Roosevelt



Drugs in Clinical Trials

Capricor Therapeutics Completes Enrollment of Phase II Clinical Trial for Cenderitide to Treat Heart Failure

March 31, 2015 - Capricor Therapeutics, Inc., a biotechnology company focused on developing novel therapeutics for the treatment of cardiovascular diseases, announced that it has completed enrollment of its first Phase II clinical trial of Cenderitide in ambulatory heart failure patients. Cenderitide is in development for the outpatient treatment of patients following an acute admission for heart failure, as well as other potential indications.

Source: <http://globenewswire.com/Index>

Ebola Vaccine Safe, Immunogenic in Phase I Trials

A vaccine that uses a genetically engineered recombinant vesicular stomatitis virus (rVSV) to present Ebola virus glycoprotein to the immune system appeared safe and immunogenic enough in phase 1 studies to warrant further development, researchers from the United States and Europe report. The research groups reported the trial results in two articles published on April 1, 2015 in the New England Journal of Medicine.

Source: <http://www.medscape.com/viewarticle/842555>

Dietary Research

Flavonoids Might Curb Esophageal and Gastric Cancer

Dietary anthocyanidins, flavonoids found in wine and fruit juice, might help reduce the impact of esophageal and gastric cancer, according to U.S. researchers.

"While further research is needed, our current research suggests that flavonoid compounds, specifically anthocyanidins, could be used as chemopreventive agents in an effort to reduce incidence and improve survival for fatal cancers of the esophagus and stomach," Dr. Jessica L. Petrick, of the University of North Carolina, Chapel Hill.

Source: <http://www.medscape.com/viewarticle/840725>



NEW MOLECULE ENTITY & NEW THERAPEUTIC BIOLOGICAL PRODUCT

Unituxin (Dinutuximab)

March 10, 2015, The U.S. FDA approved Unituxin (Dinutuximab) as part of first-line therapy for pediatric patients with high-risk neuroblastoma, a type of cancer that most often occurs in young children. It is an antibody that binds to the surface of neuroblastoma cells. Unituxin is being approved for use as part of a multimodality regimen, including surgery, chemotherapy and radiation therapy for patients who achieved at least a partial response to prior first-line multiagent, multimodality therapy.

Source:

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm437460.htm>

Ibrance (Palbociclib)

February 3, 2015, The U.S. FDA granted accelerated approval to Ibrance (Palbociclib) to treat advanced (metastatic) breast cancer. Ibrance works by inhibiting molecules, known as cyclin-dependent kinases (CDKs) 4 and 6, involved in promoting the growth of cancer cells. Ibrance is intended for postmenopausal women with estrogen receptor (ER)-positive, human epidermal growth factor receptor 2 (HER2)-negative metastatic breast cancer who have not yet received an endocrine-based therapy. It is to be used in combination with letrozole, another FDA-approved product used to treat certain kinds of breast cancer in postmenopausal women.

Source:

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm432871.htm>

Establishment of Drug Information Centre (DIC) at Dhiraj General Hospital, Sumandeep Vidyapeeth – An initiative by the Department of Pharmacy, SV

In November 2014, Department of Pharmacy, SV established a Drug Information Centre (DIC) at Dhiraj General Hospital, Piparia, Vadodara. The centre is facilitated with enriched drug library, drug database section and section for the Pharm.D professionals catering the needs of medical practitioners of the Dhiraj General Hospital. DIC provides drug related information to pharmacists, physicians, nurses, and other allied health care professionals of Dhiraj General Hospital.

The common drug related inquiries are as follow:

- Appropriate therapy for specific patients
- Adverse reactions to drugs
- Efficacy of drugs
- Possible drug interactions
- Pharmacokinetic parameters of drugs
- Dosage adjustments
- Information on investigational agents
- Information on new drugs

Furthermore, DIC is also involved in providing patient counseling and education services to the OPD and IPD patients of the hospital.

The DIC has software named "UpToDate", which provides an evidence based information about all aspects of drug. Physicians, nurses, pharmacists and other medical professionals who require any information about drug or disease, may approach DIC for quick services.



**Drug Information and Patient Counseling Centre at
Dhiraj General Hospital, Sumandeep Vidyapeeth**

STUDENT'S COLUMN

Plant stem cell therapy: We all have heard of Human stem cells are being used to treat diseases, creating organs to be implanted in the body and much more but now Plant stem cells can be used to achieve similar or probably better results with negligible side-effects and in a much shorter span of time. "Double stemcell" by Phytoscience, Malaysia is such a product.

Uttwiler Spatlauber (Apple stemcell) - a rare species of swizz apple having the ability to activate dormant human stem cells in body and delay aging process.

Gamay Teinturierfreaux (Grape stemcell) - rich in anthocyanin pigments which delays aging process and prevents UV damage to skin tissue.

Blueberry extract - high antioxidant values along with carotene, luetien and zeaxanthin. These have anti-cancer effects, anti-aging, effective against degenerative diseases & infections.

Acai berry - helps against leukemia cells, improves immunity and prevents Alzheimer's. Many advantages are associated with the use of plant stem cell therapy, such as, it enhances health and vitality, maintains pH balance, boosts immune system, said to have 100% effectiveness immediately, it requires shorter time than the human stem cell technique, and provides very quick recovery.

For more information please visit: https://www.iphytoscience.com/en/products_doublestemcell.php

Jeremiah Christi, 2nd Year B.Pharm

Pharm D and B.Pharm students of Dept. of Pharmacy, Sumandeep Vidyapeeth attended UGC sponsored National seminar on "Fostering Innovations in Pharmaceutical Research: Planning to Implementation"

The pharmacy department of MS University of Baroda organized a seminar on "Fostering inventions in pharmaceutical research: Planning to implementation" sponsored by UGC on 20th March 2015. The seminar included many informative lectures on recent innovations in Pharmaceutical research. The lectures were delivered by esteemed speakers from different industrial organizations and educational units. The seminar also covered few topics related to role of Biotechnology and Bioinformatics in drug development. Furthermore, a talk on stem cell research was also delivered by a speaker from an industrial background.

Megha Patel, 2nd Year PharmD

LAUGH & LIVE LONGER

One day anatomy professor was explaining parts of the skull to the MBBS students at Madras Medical College. The professor with the skull in his hand asked one of the students "what pass through foramen magnum?". The student promptly replied "food passes through it".

One engineer from England visited Andhra Pradesh to install some software in a company. The GM of the company asked one of the PRO to take him to the hotel for lunch. As the food was so spicy, the foreigner after his first bite started screaming due to burning sensation. Then the PRO immediately gave him ice cream and he managed to finish the food. Next morning the English Man was shouting from the toilet with a severe burning sensation. The PRO exclaimed "we do not have ice cream suppositories".

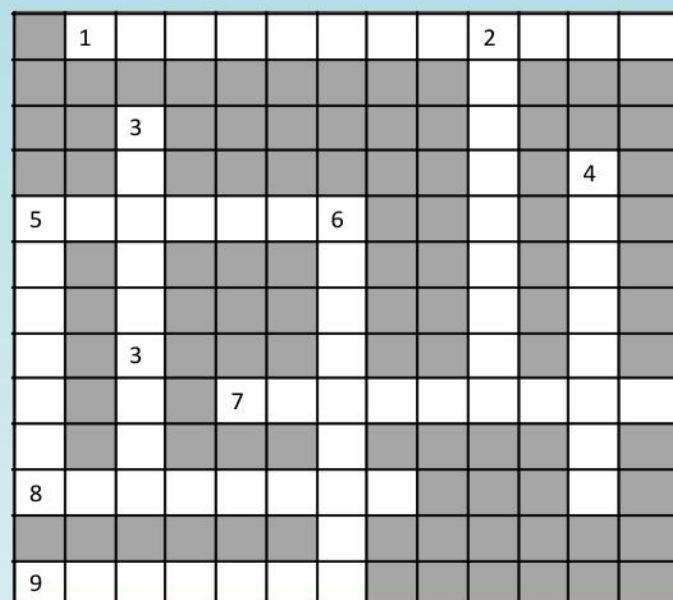
sick_jokes@ballu.com

Across

1. Increase in Blood Pressure (12)
5. Causative organism is *Salmonella typhi* (7)
7. Common name is whooping cough (9)
8. Causative organism is *Varicella virus* (8)
9. Caused due to female *Anopheles mosquito* (7)

Down

2. Sexually transmitted disease (9)
3. Attacks children from 1-5 years of age (prevented by DPT vaccine) (9)
4. A common disease of food poisoning (8)
5. Caused due to bacteria present in soil through wounds (7)
6. Common symptom is contaminated stools (9)



Answers to the puzzle of last issue (Jan-Feb 2015):

Across:

1. Paracetamol, 2. Methocel, 3. Lorazepam, 4. Menthol, 5. LAL

Down:

1. Performance, 2. Ramipril, 3. Citalopram, 4. Cell, 5. Zone

To, _____

Postal stamp

Department of Pharmacy

Sumandeep Vidyapeeth, Piparia, Vadodara (Gujarat)

Please email your suggestions, comments and contribution for next issue to editorpharmahorizon@gmail.com

Note: If you have any query regarding medication and disease please write us at: svdruginfo@gmail.com