



PHARMAHORIZON

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



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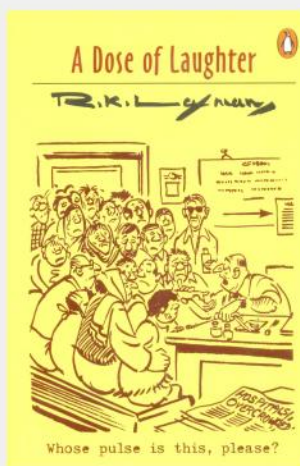
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A Tribute to R. K. Laxman



EDITOR'S VIEW:

It is my great privilege that, I have been bestowed upon the charge of editing the inaugural issue of "PHARMAHORIZON" – A News letter from the Dept. of Pharmacy Sumandeep Vidyapeeth. Through this bimonthly news letter we try to disseminate the information obtained from several sources to those who are in the field of medical and allied health sciences. FDA approved new drugs, warning issued to the existing drugs, news about pharma industry and other ethical issues are brought to light. This news letter will be a boon to those finding time a big constrain to access their electronic media.

I am thankful all the members of Editorial board and other Faculty of the Dept of Pharmacy, Sumandeep Vidyapeeth for their cooperation and help in brining out this news letter. Further, I am deeply grateful to the Management of Sumandeep Vidyapeeth for their support in getting the inaugural issue released.

Dr.R.Balaraman, FAMS.

Professor, DoP, SVU

Breakthrough Discoveries: Nobel prize (1988) (Medicine)

Sir James Black

(14 Jun. 1924 – 22 Mar. 2010)

James Black established the physiology department at the University of Glasgow, where he became interested in the effects of adrenaline on the human heart. He went to work for ICI Pharmaceuticals in 1958 and, while there, developed propranolol, a beta blocker used for the treatment of heart disease, which later became the world's best-selling drug. During this time Black pioneered a method of research whereby drug molecules were purposefully built instead of being synthesized first and then investigated for their potential medical uses. The discovery of propranolol was hailed as the greatest breakthrough in the treatment of heart disease since the discovery of digitalis. Black was also responsible for the development of cimetidine, a H₂ receptor antagonist, a drug used in a similar manner to treat stomach ulcers. On the basis of cimetidine molecule many other H₂ receptor blockers are also introduced in the market for the treatment of peptic ulcer.

After the introduction propranolol many other β -Blockers are developed and they have become the best armamentarium for cardiologists till date.

He was awarded the Nobel Prize for Medicine in 1988 for work leading to the development of Propranolol and Cimetidine.

(Source: <http://en.wikipedia.org>)



MOLECULE OF THE MILLENNIUM:

Sodium Glucose Co-transporter-2 Inhibitors for type-II diabetes

SGLT2 is a low-affinity, high capacity glucose transporter located in the proximal tubule in the kidneys. It is responsible for 90% of glucose reabsorption. Inhibition of SGLT2 leads to the decrease in blood glucose due to the increase in renal glucose excretion. The mechanism of action of this new class of drugs also offers further glucose control by allowing increased insulin sensitivity and uptake of glucose in the muscle cells, decreased gluconeogenesis and improved first phase insulin release from the beta cells.

It is proposed that in prehistoric times, we developed an elegant system for maximizing energy conservation and storage, due to lack of consistent food supplies. This system included reducing the activity of our neurological endocrine system to slow metabolism and conserve the stored energy in our bodies, as well as a method to increase reabsorption of excess glucose that was removed by the kidneys.

Now that the majority of our type 2 patients have an adequate or most likely an over-abundant supply of glucose from the foods we eat, this system is no longer necessary for survival and in fact contributes to increased weight and diabetes risk. The first of the defects was addressed in May of 2009 when bromocriptine mesylate rapid release was approved by the FDA and now with the approval of canagliflozin, empagliflozin, and dapagliflozin, we have medications to address the second half of this problem.

FDA Approves Glyxambi for Type 2 Diabetes:

The FDA has approved combination empagliflozin/linagliptin (Glyxambi, Boehringer Ingelheim) as an adjunct to diet and exercise for treatment of adults with type 2 diabetes.

Glyxambi, a once-daily oral tablet, is comprised of empagliflozin 10 mg or 25 mg and linagliptin 5 mg. The new drug is currently the only prescription medication in the United States that combines a sodium-glucose co-transporter 2 (SGLT2) inhibitor and a dipeptidyl peptidase-4 (DPP-4) inhibitor.

New WHO guide to prevent and control cervical cancer

The new "Comprehensive cervical cancer control: a guide to essential practice" will be launched at the World Cancer Leaders' Summit in Melbourne, Australia on 3 December 2014. The main elements in the new guidance are:

Vaccinate 9 to 13-year-old girls with two doses of HPV vaccine to prevent infection with the Human papillomavirus (HPV), the virus responsible for most cases of cervical cancer. The reduced, 2-dose schedule has been shown to be as effective as the current 3-dose schedule. The change will make it easier to administer the vaccine. In addition, it reduces the cost, which is particularly important for low- and middle-income countries where national health budgets are constrained but where the need for HPV vaccine is the greatest. Today, girls in more than 55 countries are protected by routine administration of HPV vaccine. Encouragingly, a growing number of low- and middle-income countries are introducing HPV vaccine in the routine schedule, with support from the GAVI Alliance.

Use HPV tests to screen women for cervical cancer prevention. With HPV testing, the frequency of screening will decrease. Once a woman has been screened negative, she should not be rescreened for at least 5 years, but should be rescreened within 10. This represents a major cost saving for health systems, in comparison with other types of tests.

Communicate more widely. Instead of focusing mostly on encouraging the screening of women aged over 29, the guide recommends communicating with a wider audience: adolescents, parents, educators, leaders and people working at all levels of the health system, to reach women throughout their lives.

For more information:

<http://www.who.int/mediacentre/news/releases/2014/preventing-cervical-cancer/en/>

NEW DRUG APPROVAL

FDA approves Natpara to control low blood calcium levels in patients with hypoparathyroidism

The U.S. Food and Drug Administration on January 23, 2015 approved Natpara (parathyroid hormone) to control hypocalcemia (low blood calcium levels) in patients with hypoparathyroidism, a rare disease that affects approximately 60,000 people in the United States.

Natpara, a hormonal injection administered once daily, helps to regulate the body's calcium levels. The FDA granted Natpara orphan drug designation because it is intended to treat a rare disease.

"People with hypoparathyroidism have limited treatment options and face challenging symptoms that can severely impact their quality of life," said Jean-Marc Guettier, M.D., director of the Division of Metabolism and Endocrinology Products in the FDA's Center for Drug Evaluation and Research. "This product offers an alternative to patients whose calcium levels cannot be controlled on calcium supplementation and active forms of vitamin D."

The safety and effectiveness of Natpara were evaluated in a clinical trial of 124 participants who were randomly assigned to receive Natpara or a placebo. The trial was designed to determine whether Natpara can be used as a substitute for, or be used to help reduce the amount of, active forms of vitamin D or oral calcium taken by participants. Results showed 42 percent of Natpara-treated participants achieved normal blood calcium levels on reduced doses of calcium supplements and active forms of vitamin D, compared to three percent of placebo-treated participants.

For information regarding side effects and warning refer:

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm431358.htm>

DRUG SAFETY COMMUNICATION

FDA reporting mental health drug ziprasidone associated with rare but potentially fatal skin reactions

The U.S. Food and Drug Administration (FDA) is warning that the antipsychotic drug ziprasidone is associated with a rare but serious skin reaction that can progress to affect other parts of the body. A new warning has been added to the drug label to describe the serious condition known as Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS). Patients who have a fever with a rash and/or swollen lymph glands should seek urgent medical care. Health care professionals should immediately stop treatment with ziprasidone if DRESS is suspected.

For more information:

<http://www.fda.gov/Drugs/DrugSafety/ucm426391.htm>

'Strongest Evidence Yet' Links Anticholinergic Drugs to Dementia

A new study provides the strongest evidence that anticholinergic drugs may increase the risk for dementia in older adults. The drugs implicated are commonly used, estimated to be taken by about 20% of the older adult population for many conditions. They include popular antihistamines sold over the counter as sleep aids, such as diphenhydramine, or for allergy relief, such as chlorpheniramine; oxybutynin and tolterodine for overactive bladder; and the tricyclic antidepressants, such as doxepin or amitriptyline, even when used at low doses for migraine prevention or neuropathic pain.

The study, published online in JAMA Internal Medicine on January 26, was conducted by a team led by Shelly Gray. "We found an obvious dose-response relationship between anticholinergic drug use and risk of developing dementia: the higher the usage, the greater the risk," Dr Gray commented to Medscape Medical News.

Dr Gray noted that all studies of this issue have been conducted in older individuals. "There is no data on how these drugs may affect younger people, but I personally will avoid taking anticholinergic agents," she added.

For detailed information:

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

DRUGS IN CLINICAL TRIALS

Johnson & Johnson Announces Start of Phase 1 Clinical Trial of Ebola Vaccine Regimen: Jan. 6, 2015 – Johnson & Johnson announced the start of a Phase 1, first-in-human clinical trial of a preventive Ebola vaccine in development at its Janssen Pharmaceutical Companies. The trial is being led by the Oxford Vaccine Group, part of the University of Oxford Department of Paediatrics. Recruitment in the trial is underway, and the first volunteers have received their initial vaccine dose. Enrollment is expected to be completed by the end of January.

NovoBiotic Reports the Discovery of Teixobactin, a New Antibiotic without Detectable Resistance: January 7, 2015 – NovoBiotic Pharmaceuticals, LLC announces the discovery and preclinical development of teixobactin, a compound belonging to a new class of antibiotics. As reported in the journal Nature (Ling et. al. 2015), the compound shows potent killing against a broad panel of bacterial pathogens including methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin resistant enterococci (VRE).

Arena Pharmaceuticals Initiates Phase 2 Clinical Trial Evaluating Ralinepag for Pulmonary Arterial Hypertension: Jan. 12, 2015 – Arena Pharmaceuticals, Inc. announced today the initiation of patient dosing in a Phase 2 clinical trial of ralinepag, an oral, non-prostanoid prostacyclin (IP) receptor agonist intended for the treatment of pulmonary arterial hypertension (PAH).

DIETARY RESEARCH

Drinking beetroot juice reduces high blood pressure, trial shows

One glass of beetroot juice a day is enough to significantly reduce blood pressure in patients with high blood pressure, conclude researchers who conducted a placebo-controlled trial in dozens of patients.

<http://www.medicalnewstoday.com/articles/288229.php>

NEW MOLECULE ENTITY & NEW THERAPEUTIC BIOLOGICAL PRODUCT SAVAYSA (edoxaban)

SAVAYSA is a factor Xa inhibitor indicated to reduce the risk of stroke and systemic embolism (SE) in patients with nonvalvular atrial fibrillation (NVAf)

- **Limitation of Use for NVAf:** SAVAYSA should not be used in patients with creatinine clearance (CrCL) > 95 mL/min because of increased risk of ischemic stroke compared to warfarin at the highest dose studied (60 mg). SAVAYSA is indicated for the treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) following 5-10 days of initial therapy with a parenteral anticoagulant

For more information :

<http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm?fuseaction=Search.DrugDetails>

ZERBAXA (ceftolozane/tazobactam)

ZERBAXA (ceftolozane/tazobactam) is a combination product consisting of a cephalosporin-class antibacterial drug and a beta-lactamase inhibitor indicated for the treatment of the following infections caused by designated susceptible microorganisms:

Complicated Intra-abdominal Infections, used in combination with metronidazole

Complicated Urinary Tract Infections, including Pyelonephritis

To reduce the development of drug-resistant bacteria and maintain the effectiveness of ZERBAXA and other antibacterial drugs, ZERBAXA should be used only to treat infections that are proven or strongly suspected to be caused by susceptible bacteria.

For more information:

http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm?fuseaction=Search.Label_ApprovalHistory

CURRENT AFFAIRS IN PHARMACEUTICAL INDUSTRY

AstraZeneca collaborates to use CRISPR technology

AstraZeneca has announced four research collaborations aimed at harnessing the power of CRISPR, a pioneering genome-editing technique, across its entire discovery platform in the company's key therapeutic areas. The four research collaborations are with the Wellcome Trust Sanger Institute, Cambridge, U.K.; the Innovative Genomics Initiative, California; Thermo Fisher Scientific, Waltham, Mass.; and the Broad Institute/Whitehead Institute, Cambridge, Mass. The technology will allow AZ to identify and validate new drug targets in preclinical models that closely resemble human disease.

Sun Pharmaceutical wins U.S. approval to buy Ranbaxy

India's Sun Pharmaceutical Industries Ltd has won U.S. approval to buy Ranbaxy Laboratories Ltd on condition that it sell its interest in a generic antibacterial medicine. Sun Pharmaceutical said in April that it had agreed to buy the Indian generic drugmaker from its current owner, Japan's Daiichi Sankyo Co, for \$3.2 billion.

STUDENT'S COLUMN (Celebration of 53rd Pharmacy Week)

The theme selected for this year was "Responsible use of medicine: Role of Pharmacist". The main objective of Pharmacy week celebrations was to create awareness among the public, other healthcare providers and the authorities about the theme and role of pharmacist in general.

1) HEALTH CHECK UP CAMP IN PIPARIA

First and Second year Pharm. D students of Dept. of Pharmacy, SV along with 3 staff members visited Piparia village. Camp was arranged in one village school. Around 60 subjects were examined for their Blood pressure, Body weight, Body mass index. Some of the elderly persons were found to have high blood pressure. They were advised some diet modifications and exercises. They were also advised to consult doctor and to get treated.

First year Pharm.D students performed a drama in front of the villagers. The theme of drama was side effect of self medication and rational use of medicine. By this performance they conveyed important messages about proper administration of drugs by oral route. Snacks were also distributed to school children.

Students also made informative and very creative posters and scitons on topic like poly pharmacy and self medication etc. Posters were made in Gujarati for the better understanding of villagers.

2) DIABETES AND TUBERCULOSIS AWARENESS CAMPS

A TB and diabetes awareness camp was organized at Mastupura and Ropa village. Forty five students were accompanied by five staff members. First the group visited Ropa village. The camp was organized at Municipality school, Ropa. Posters and scitons on TB and diabetes were explained to the villagers. A PowerPoint presentation in Gujarati was also presented for the awareness of diabetes.



**TB awareness program
by students**

Height and weight of schoolchildren were also measured to diagnose malnutrition among children. Later the camp visited Mastupura village. Around 60 subjects were examined for their Blood glucose level, Blood pressure, Body weight and Body mass index. Some of the elderly person were found to have high blood pressure and High blood glucose levels. They were advised some diet modifications and exercises. They were also advised to start treatment after consulting a doctor.

3) SPORTS AND CULTURAL WEEK:

Sports and cultural week was also organized at department of Pharmacy, SV on 5th Jan. to 10th Jan, 2015. Sports events such as, Cricket, Volleyball, Football, Chess, Carrom, Basketball as well as cultural events such as, Cook Without Fire, Rangoli Competition, Mehendi etc. were organized. Near about 200 students participated in various events of Sports and Cultural week.



**Blood Pressure and Blood
Glucose Check-up**



Cricket – Winning team



**Faculty member explaining about
Pharmacy to school students**



**Participants of Pharmarangoli
competition**



**Participants of Cook without
Fire competition**

LAUGH & LIVE LONGER

Neurotics are those who build castles in the air,
Psychotics are those who live in the castles,
Psychiatrists are those who collect rent from them.

An alcoholic went to the doctor with pain in the abdomen.

The doctor examined him and told

"Hey man, you are suffering from Ascites of the abdomen."

The patient exclaimed, "What do you mean by Ascites"?

The doctor replied, "It is accumulation of water in your abdomen".

Patient told in anger, "Ohh S..... I told the bar man not to put ice cubes in my whisky".

sick_jokes@ballu.com

Rearrange the four letters below to get the name of four popular
pharmaceutical companies

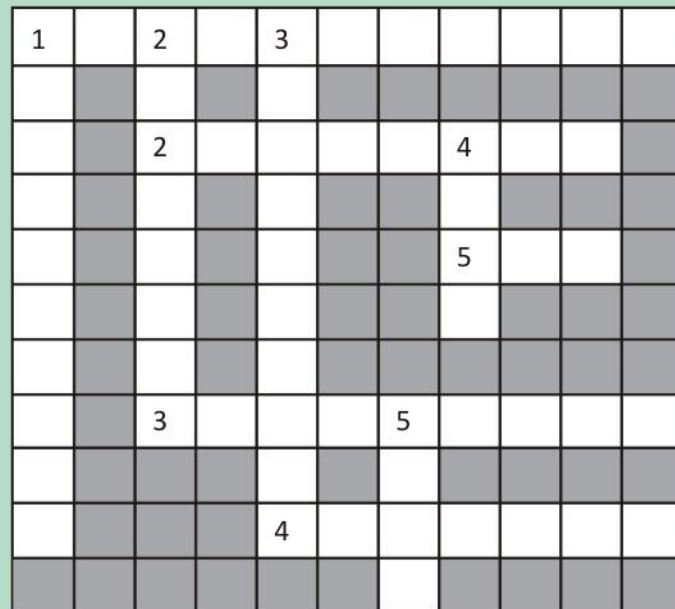
L O C H A S I N

Z U S D Y

S O R T I V A N

M I C E L A B

Rearrange the circled letter to get the answer to the riddle.
The doctor's advise to a patient was: _____ is very common.
Try not to lose any sleep over it.



Across

1. API present in crocin is _____
2. Brand name of Methyl cellulose
3. A benzodiazepine drug used to treat anxiety disorders
4. Used as a flavoring agent
5. Pyrogen testing is done by _____ test

Down

1. In HPLC, P stands for _____
2. An ACE inhibitor
3. An antidepressant drug which is SSRI inhibitor
4. Structural and functional unit of our body
5. Antibiotic activity in a petriplate is measured by _____ of inhibition

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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