Clinical Pharmacy News Letter

S.J.M COLLEGE OF PHARMACY

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World Nutritional Week 2017

On 1st September 2017, SJM College of Pharmacy in coordination with Rock Fort International and Navodhaya Residential Schools Chitradurga, conducted a nutritional awareness program for school children on eve of "World Nutritional Week 2017". This program was organized by Pharm D Interns 2017-18 which gave an awareness on the importance of nutrition for health which has an impact on development, productivity, economic growth and ultimately National development.

Awareness Program on Osteoarthritis on Geneva Convention day Organized by Youth Red Cross Wing

An awareness program was conducted on Osteoarthritis by SJMCP's Youth Red Cross wing on August 12th Geneva Convention day. Students have been divided into two groups of each 6 members from B Pharm and Pharm D stream. Students have selected two Old age homes in Chitradurga town to educate regarding Osteoarthritis and its management through structured education program in the form of power point and oral demonstration. Apart from this students also gave insights on OTC medication and its benefits and risks. The acceptance of the program was good and received in the form of feedback format.

DRUG- FOOD INTERACTIONS OF CARDIOVASCULAR DRUGS

Drug	Food	Effect
Captopril	Foods high in potassium, such as bananas, oranges, green leafy vegetables, and salt substitutes that contain potassium.	ACE inhibitors can increase the amount of potassium in your body. Too much potassium can be harmful and can cause an irregular heartbeat and heart palpitations
Nifedipine& Amlodipine	Grape fruit juice	Increases the bioavailability of the drugs
Triamterine	Large amounts of foods high in potassium, such as bananas, oranges, and green leafy vegetables, and salt substitutes that contain potassium	Lower the kidney's ability to remove potassium, too much potassium can be harmful and can cause an irregular or rapid beating of the heart
Digoxin	Fibrous Foods, Senna and St. John's Wort Black licorice (which contains the glycyrrhizin used in some candies, cakes and other sweets).	Fibrous foods decreases the amount and of digoxin in body It causes palpitations and irregular heart beats
Statins	Alcohol Grapefruit Juice	Liver Damage Grapefruit juice can raise the levels of those statins in your body and increase the chance of side effects.
Nitrates	Alcohol	Alcohol may add to the blood vessel-relaxing effect of nitrates and lead to a dangerously low blood pressure.
Warfarin	Vitamin K Rich Foods(Foods High in Vitamin K Include Broccoli, Cabbage, Collard Greens, Spinach, Kale, Turnip Greens, and Brussel Sprouts), Avoid garlic, ginger, glucosamine, ginseng, and ginkgo.	Changes the effects of warfarin Increase the chance of bleeding.

NEWLY APPROVED FDA DRUGS: JULY-SEP 2017

SL NO	DRUG	INDICATION	APPROVED DATE
1	Tremfya (Guselkumab)	Moderate-to-severe plaque psoriasis	July 2017
2	Nerlynx (Neratinib)	Her2 breast cancer	July 2017
3	Idhifa(Enasidenib)	Relapsed or refractory acute myeloid leukemia with idh2 mutation	July 2017
4	Vosevi (Sofosbuvir, Velpatasvir, and Voxilaprevir)	Hepatitis C	July 2017
5	Gocovri (Amantadine)	Parkinson's disease Dyskinesia	August 2017
6	Vyxeos (Daunorubicin and Cytarabine)	Aml with myelodysplasia-related changes	August 2017
7	Kymriah (Tisagenlecleucel)	Refractory b-cell precursor acute lymphoblastic leukemia	August 2017
8	Besponsa (InotuzumabOzogamicin)	Adults with relapsed or refractory b-cell precursor acute lymphoblastic leukemia	August 2017
9	Mavyret (Glecaprevir and Pibrentasvir)	Chronic HCV Genotype 1, 2, 3, 4, 5 or 6	August 2017
10	Kedrab [Rabies immune globulin (Human)	Post-exposure prophylaxis of rabies infection	August 2017
11	Benznidazole	Chagas disease	August 2017
12	Verzenio (Abemaciclib)	HR+, HER2- Breast cancer	September 2017
13	Aliqopa(Copanlisib)	Follicular lymphoma	September 2017

A NEW ERA IN DIABETES CARE

The US Food and Drug Administration (FDA) approved the world's first artificial pancreas. The device monitors blood sugar and supplies insulin automatically. It basically replicates what a healthy version of the organ does on its own; and it enables diabetes patients to live an easier life in a sustainable way. It is the biggest step towards a new Era in Diabetes management in years.

Pancreas device system? What is an artificial?

The Artificial Pancreas Device System (APDS) is a system of devices that closely mimics the glucose regulating function of a healthy pancreas.MostAPDS consists of three types of devices already familiar to many people with diabetes: a continuous glucose monitoring system (CGM) and an insulin infusion pump. A blood glucose device (such as a glucose meter) is used to calibrate the CGM.

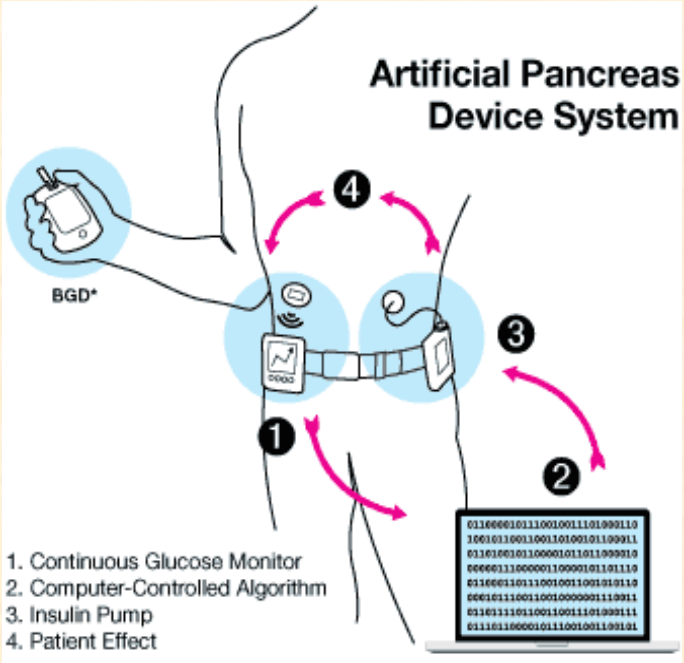
A computer-controlled algorithm connects the CGM and insulin infusion pump to allow continuous communication between the two devices. Sometimes an artificial pancreas device system is referred to as a "closed-loop" system, an "automated insulin delivery" system, or an "autonomous system for glycemic control." An Artificial Pancreas Device System will not only monitors glucose levels in the body but also automatically adjusts the delivery of insulin to reduce high blood glucose levels (hyperglycemia) and minimize the incidence of low blood glucose (hypoglycemia) with little or no input from the patient.

The FDA is collaborating with diabetes patient groups, diabetes care providers, medical device manufactures, researchers, and academic investigators to faster innovation by clarifying agency expectations for clinical studies and product approvals. These efforts have accelerated the development of the first hybrid closed loop system, the Medtronic's Mini-Med 670G System.

The FDA's guidance, The Content of Investigational Device Exemption (IDE) and Premarket Approval (PMA) Applications for Artificial Pancreas Device Systems, addresses requirements for clinical studies and premarket approval applications for and artificial pancreas device system, and provided a flexible regulatory approach to support the rapid, safe and effective development of artificial pancreas device systems.

The Artificial Pancreas System (An Autonomous System for Glycemic Control)

The illustration below describes the parts of a type of artificial pancreas device system and shows how they work together.



1.**Continuous Glucose Monitor (CGM).** A CGM provides a steady stream of information that reflects the patient's blood glucose levels. A sensor placed under the patient's skin (subcutaneously) measures the glucose in the fluid around the cells (interstitial fluid) which is associated with blood glucose levels. A small transmitter sends information to a receiver. A

CGM continuously displays both an estimate of blood glucose levels and their direction and rate of change of these estimates.

- **Blood Glucose Device (BGD).** Currently, to get the most accurate estimates of blood glucose possible from a CGM, the patient needs to periodically calibrate the CGM using a blood glucose measurement from a BGD; therefore, the BGD still plays a critical role in the proper management of patients with an APDS. However, over time, we anticipate that improved CGM performance may do away with the need for periodic blood glucose checks with a BGD.

1. **Control algorithm**. A control algorithm is software embedded in an external processor (controller) that receives information from the CGM and performs a series of mathematical calculations. Based on these calculations, the controller sends dosing instructions to the infusion pump. The control algorithm can be run on any number of devices including an insulin pump, computer or cellular phone. The FDA does not require the control algorithm to reside on the insulin pump.
2. **Insulin pump.** Based on the instructions sent by the controller, an infusion pump adjusts the insulin delivery to the tissue under the skin.
3. **The Patient.** The patient is an important part of Artificial Pancreas Delivery System. The concentration of glucose circulating in the patient's blood is constantly changing. It is affected by the patient's diet, activity level, and how his or her body metabolizes insulin and other substances.

Frog slime kills flu virus

Mining host defense peptides found in skin mucus

Date: September 10, 2017 **Source:** Emory Health Sciences

Summary: Frogs' skins were known to secrete peptides that defend them against bacteria. A new research finding suggests that the peptides represent a resource for antiviral drug discovery as well.

Full story

South Indian frog *Hydrophylaxbahu vistara* is shown a component of the skin mucus secreted by South Indian frogs can kill the H1 variety of influenza viruses, researchers from Emory Vaccine Center and the Rajiv Gandhi Center for Biotechnology in India have discovered.

Frogs' skins were known to secrete "host defense peptides" that defend them against bacteria. The finding, scheduled for publication in Immunity, suggests that the peptides represent a resource for antiviral drug discovery as well. Anti-flu peptides could become handy when vaccines are unavailable, in the case of a new pandemic strain, or when circulating strains become resistant to current drugs, says senior author Dr. Joshy Jacob, PhD, Assoc. Prof of microbiology and immunology at Emory Vaccine Center and Emory University School of Medicine.

The first author of the paper is graduate student David Holthausen, and the research grew out of collaboration with M.R. Pillai, PhD and Sanil George, PhD from the Rajiv Gandhi Center for Biotechnology. Jacob and his colleagues named one of the antiviral peptides they identified urumin, after a whip-like sword called "urumi" used in southern India centuries ago. Urumin was found in skin secretions from the Indian frog Hydrophylaxbahuvistara, which were collected after mild electrical stimulation.

Peptides are short chains of amino acids, the building blocks of proteins. Some anti-bacterial peptides work by punching holes in cell membranes, and are thus toxic to mammalian cells, but urumin was not.Instead, urumin appears to only disrupt the integrity of flu virus, as seen through electron microscopy. It binds the stalk of hemagglutinin, a less variable region of the flu virus that is also the target of proposed universal vaccines. This specificity could be valuable because current anti-influenza drugs target other parts of the virus, Jacob says.

Because flu viruses from humans cannot infect frogs, producing urumin probably confers on frogs an advantage in fighting some other pathogen, he says. Delivered intranasally, urumin protected unvaccinated mice against a lethal dose of some flu viruses. Urumin was specific for H1 strains of flu, such as the 2009 pandemic strain, and was not effective against other current strains such as H3N2.

Developing antimicrobial peptides into effective drugs has been a challenge in the past, partly because enzymes in the body can break them down. Jacob's lab is now exploring ways to stabilize antiviral peptides such as urumin, as well as looking for frog-derived peptides that are active against other viruses like dengue and Zika.

Industry Orientation Programme

An Industry Orientation Programme was organized at our Institute in association with Pharma Training Institute, Bengaluru. Final Year B. Pharm, I & II Year M. Pharm students along with faculty members participated as delegates.

Sl.No	Date	Resource person	Topic
1	22nd Sep	Dr.Umanandan Mishra Dean of PTI	Overview of Pharmaceutical Industry, Job opportunities, Account & Finances and Human Resource
2	24th Sep (Sess-1) (Sess-2)	Mr. P.S. Parameswara Production and operational Manger Apotex Dr. Deepak S. Global safety Manger AstraZeneca India Private Limited	API and Operational technique". Roles and responsibility of Pharmacist in industry Pharmacovigilance and Adverse drug reaction Also Adverse drug effect
3	25th Sep	Mr.Hari P Gupta. Freelance trainer in various streams.	An insight on sales and marketing. Holistic stress management and Personality development
4	26th Sep	Dr.Umanandan Mishra Dean of PTI	End to end supply chain, Engineering/projects, Attitude and life skills
5	06th Oct	Mr.GN. Prashant Head QC in Strides Shasun	QA& QC of Formulation & Development

CULTURAL EVE – SHARANA SAMSKRUTI UTSAVA (SSU)

SSU popularly known as Dasara celebrations of Central Karnataka, held at murugha mutt under the guidance of Shivamurthy Murugha Sharanaru. The Utsav by highlighting social, cultural, educational and other developments of the region and will also honouring the outstanding performers in different fields. During the utsav Pharmacy students participated in cultural and educational program on importance of Janaushadhi.

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