JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
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Clinical Pharmacy Newsletter

A Newsletter of Drug and Prescribing Information
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(A Unit of Department of Pharmacy Practice, JSS College of Pharmacy, Ooty)

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Vitamin D Screening and Supplementation in Primary Care

Recent trends in vitamin D testing and supplementation strongly suggest that physicians and patients believe that identifying and correcting vitamin D deficiency improves health outcomes. An umbrella review of more than 100 systematic reviews and meta-analyses of observational studies and randomized controlled trials found only a handful of "probable" relationships between serum vitamin D concentrations and clinical outcomes, and concluded that vitamin D supplementation does not increase bone mineral density or reduce the risk of fractures or falls in older adults.
What factors explain the disconnect between the research on vitamin D and the great enthusiasm for screening and supplementation in clinical practice?

1) Vitamin D is a vitamin—by definition, something the body needs. To many adults, a relationship between vitamin D levels and general health seems plausible because they spend most of their time indoors and are counseled by clinicians to minimize sun exposure to reduce skin cancer risk.

2) Earlier research had suggested positive effects that were not subsequently borne out. Ex: observational studies often make news by publicizing associations between low vitamin D levels and chronic conditions such as cardiovascular disease, but subsequent randomized controlled trials showing negative results may be less widely reported.

3) Physicians may misinterpret serum 25-OH-D concentrations of 20 to 30 ng per mL (50 to 75 nmol per L) as representing a deficiency that requires correction, when the National Academy of Medicine considers 97.5% of individuals with levels greater than 20 ng per mL to have adequate vitamin D for bone health.

Low-level daily supplementation with calcium and vitamin D can increase the risk of kidney stones, and higher monthly doses of vitamin D increased the risk of falls in a randomized controlled trial of older adults with vitamin D deficiency. The National Academy of Medicine has noted that vitamin D intakes above the tolerable upper limit of 4,000 IU per day may cause toxic effects such as renal impairment, hypercalcemia, or vascular calcification. It is time for clinicians and patients to curb enthusiasm for vitamin D screening and supplementation.
Family physicians should also counsel patients on the recommended dietary allowance for vitamin D (600 IU per day in adults 70 years and younger, and 800 IU per day in adults older than 70 years), and discourage most patients from using supplements, especially in dosages near or above the tolerable upper limit of 4,000 IU per day.

Reference for further reading: Am Fam Physician. 2018;97(4):226-227

April To June 2018

Role of Biomarkers in Men at Risk for and/or Diagnosed With Prostate Cancer

Approximately one in seven men will develop prostate cancer. Public awareness of this disease increases; clinicians may find themselves discussing screening and treatment options for men of advanced age. The populations of interest are men over age 65 years, those determined as frail, or those with a life expectancy less than 10 to 15 years. The term "elderly" when used in medicine generally referrers a person age 65 years or older, however, vast differences in life expectancy exist within this age group.

Prostate-specific antigen (PSA) testing is the conventional means of prostate cancer risk evaluation, risk stratification, and disease monitoring methods. Utilization of biomarkers in professional practice may prevent over-detection and over-treatment of tumors among men concerned about prostate cancer. Many biomarkers and molecular tests are commercially available to aid in prostate cancer screening and treatment decision-making. This rapidly evolving area in urologic practice can be overwhelming and wearisome to the patient and practitioner.

Prostate- specific antigen: Discovered in 1971, until recently, the only available biomarker for the screening and early detection of prostate cancer. This test is used in screening, active surveillance, and post-treatment monitoring. Its discovery and application have greatly influenced clinicians' ability to treat patients at an earlier stage and monitor for clinical progression. PSA screening is relatively inexpensive and has a high acceptance rate among patients; however, it is stressed with a high false-positive rate, driving excessive diagnostic testing, healthcare costs, and invasive procedures. Values can be affected by various factors, including lifestyle, medications, sexual practices, and infections. Another criticism of PSA is its inability to discriminate between indolent and aggressive disease.

A PSA between 0.0 and 4.0 ng/ml is generally accepted as the normal range; however, there are no definite normal or abnormal levels. Men with PSA levels below 4.0 ng/ml may still have prostate cancer, while men with PSA levels above 4.0 ng/ml may be cancer-free. Many derivatives have been developed over the years to improve PSA specificity. One such example is PSA velocity (PSAV), which monitors the change in PSA over time, and can be used in screening and active surveillance of prostate cancer. Using at least three different lab values over one year, a calculation determines PSAV with a value of greater than 0.75 ng/ml/year indicating higher risk for prostate cancer, and can be used in the screening and active surveillance of prostate cancer.

Age and prostate: As men age, their prostate grows in size, secreting more PSA. Age-specific reference ranges are another way clinicians have attempted to increase the clinical value of PSA. Free PSA is commonly used to improve sensitivity of prostate cancer detection; when the free PSA is greater than 25%, there is an associated higher likelihood of cancer. Yet another variant of PSA is free PSA ratio, which compares the amount of unbound PSA to the amount attached to proteins with a percentile score of less than 25%, signifying greater risk for prostate cancer. A larger prostate gland is expected to secrete more PSA; therefore, PSA density (PSAD) was introduced to address this disparity. A PSAD is calculated by dividing the serum PSA level by prostate volume found on transrectal ultrasound. A PSAD greater than 0.15 ng/ml, indicates an increased probability of prostate cancer.

Biomarkers: Use of biomarkers in clinical practice can be a powerful tool for patient advocacy in the detection, prognostication, and monitoring of prostate cancer. Biomarker tests available for prostate cancer range from single proteins, RNA- or DNA-based molecular signatures, to complex assays. A newly identified biomarker should exemplify analytic validity, clinical validity, and clinical utility. Analytic validity demonstrates a test is accurate, reliable, and reproducible in the laboratory. Clinical validity answers the question of whether or not it measures the outcomes or disorder to be measured. Finally, clinical utility demonstrates it can influence practice, and the benefits outweigh the harms of testing.

Over-diagnosis is a common concern in the urologic community, and these tests can be used to assign patients to appropriate risk groups supporting the best outcomes. NCCN guidelines recommend consideration of percent-free PSA, PCA3, Prostate Health Index (phi), and 4Kscore in the screening of prostate cancer. Other available pre-biopsy tests include Apifiny, Mi-Prostate Score (MiPS), and SelectMDx. ConfirmMDx is a tissue-based test for rebiopsy considerations only. Biomarkers to assess risk for prostate cancer can be ordered for patients with a PSA level in the normal range of 0.0 to 4.0 ng/ml or those who are considered to have an elevated PSA with a normal or abnormal digital rectal examination (DRE).

PCA3 is a urine sample collected after a DRE that calculates the ratio of PCA3 RNA molecules to PSA RNA molecules. The PCA3 gene is specific for prostate cancer. The results range from 0 to 125, and it can be used to determine need for biopsy or re-biopsy.

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Prostate Health Index (phi) is a blood test analyzing three variants of PSA. It utilizes a calculation that combines PSA, free PSA, and p2PSA to provide a "phi score". Prostate Health Index has been found to have improved specificity for prostate cancer detection. It is indicated for men age 50 years and older with a negative DRE, and a serum PSA between 4.0 and 10.0 ng/mL.
4Kscore: Another available blood test and this assay measures total PSA, free PSA, hK2, and intact PSA. Combined with clinical information, including patient's age, DRE findings, and prior biopsy status, this test can provide risk of aggressive disease (Gleason score ≥ 7) and likelihood of distant metastasis within the next 20 years.
Apifiny: Apifiny uses autoantibody technology and this blood test looks at eight different proteins created and amplified by the presence of prostate cancer. A score ranging from 0 to 100 is provided, with a recommended cutoff score of 59.
Mi Prostate Score: It is a urine test that can be used to assess the risk for prostate cancer. This test uses three different biomarkers, including urine TMPRSS2: ERG and PCA3 plus results of a serum PSA completed within the last six months. These three pieces of information are used in an algorithm to provide a percent risk for prostate cancer and percent risk for high-grade (Gleason score ≥ 7) prostate cancer.
SelectMDx: This urine test uses mRNA found in prostate cells to stratify risk for having prostate cancer. Analyzing DLX1 and HOXC6 biomarkers, using KLK3 expression as internal reference combined with age, DRE results, and PSA level, this test provides percent likelihood of having any prostate cancer and percent likelihood of having high-grade prostate cancer.
ConfirmMDx: This epigenic assay is distinctive from the others in that it is a tissue-based test done only after a negative prostate biopsy. It can detect changes in the DNA in a 'cancerization process' associated with prostate cancer. Confirm-MDx examines GSTP1, APC, RASSF1 genes for a process known as methylation. This process creates a field or halo around the prostate cancer and can help determine if cancer tissue was missed on biopsy. If the methylation process is found in one or more cores, then the ConfirmMDx results will be positive.
Decipher: This tissue-based test measures the expression levels of 22 RNA biomarkers found in prostate biopsy samples associated with aggressive prostate cancer. Using the information gathered on genomic expression alone, the Decipher score ranges from 0 to 1.0 categorizing patients into three buckets of risk: low risk, average risk, and high risk.
Oncotype DX: This tissue based test analyzes 17 different genes predictive of high grade (Gleason score ≥ 7) and/or non-organ-confined disease. Results include the Genomic Prostate Score (GPS) ranges from 0 to 100 and represent the biological aggressiveness of the tumor.
Prolaris: This pre-treatment genomic test used to measures 31 cell cycle progression genes. The selected genes represent how quickly cancer cells are multiplying. It provides a Prolaris score ranging from 0 to 10 based on the biology of the tumor; higher scores represent higher risk of disease progression.

Conclusion

The young old population presents as physically active with a life expectancy of at least 10 years. These gentlemen, in particular, may benefit from enhanced screening techniques prior to biopsy. For example, a 70-year-old man with a FRAIL Scale score of 1 or 2, with a PSA of 6.8 ng/ml, and a life expectancy of 14.7 years based on the Social Security Life Expectancy Calculator may choose to augment screening with a pre-biopsy biomarker. Examples include PCA3, Prostate Health Index (*phi*), 4Kscore, Apifiny, Mi Prostate Score (MiPS), and *Select*MDx. If the results are unfavorable, he may be more apt to readily accept the risk associated with a prostate biopsy. The decisional conflict to move forward with biopsy may be lessened by the use of these tests.
Conversely, a 75-year-old man with a life expectancy of seven years as calculated by the Minnesota Metropolitan Life Insurance Calculator and a FRAIL Scale score of 5 may use one or a variety of available tests to guide treatment decisions. Upon diagnosis, he may receive favorable results on genomic testing, solidifying his decision to peruse active surveillance. Examples of these tests include Decipher, Onco*type*DX, and Prolaris. With the added confidence of the genomic results, he may avoid over-treatment.
Other patients who have undergone a prostatectomy with high-risk pathologic findings may utilize tests, such as Prolaris or Decipher. The results from these tests may help determine the degree of clinical monitoring and/or need for adjuvant therapy. Post-surgical testing can help address concerns of under- or over-treatment. Ultimately, decisions across the prostate cancer continuum should be made on an individualized basis with special considerations for patient preferences.
Reference for further reading: Urol Nurs. 2017;37(4):192-203.

April To June 2018

Adverse Drug Reaction

A total of 27 Adverse Drug Reactions (ADRs) were reported or detected by the Department of Pharmacy Practice during April to June 2018. The following are some of the suspected ADRs that were either reported to or detected by the Department of Pharmacy Practice. In most of the cases there was a change in drug therapy, e.g. cessation of suspected drug or reduction in dose, and/or either specific or symptomatic treatment for the suspected ADR

S.no	Name of the Drug	ADR
1.	Blood Transfusion	Pulmonary oedema and Anaphylactic reaction
2.	Heparin	Hematuria
3.	Diazepam	Dizziness
4.	Domperidone	Dry Mouth
5.	Ranitidine	Vomitting
6.	Metformin and Ranitidine (Interaction)	Myalgia
7.	Furosemide	Hypotension
8.	Atorvastatin	Myalgia
9.	Ciprofloxacin	Swelling in hands and mouth ulcers
10.	Ranitidine	Wheal and flare reaction (n=2)
11.	Dexamethasone	Hyperglycemia (n=2)
12.	Ciprofloxacin	Lips Swelling and oral ulcers
13.	Ferrous sulphate	Oral ulcers and abdominal pain
14.	Ranitidine	Hypersensitivity reactions
15.	Ferrous sulphate	Vomiting
16.	Haloperidol and Resperidone	Extra pyramidal side effects
17.	Ampicillin	Watery diarrhoea
18.	Azithromycin	Diffuse maculopapular rash
19.	Ibuprofen	Severe stomach pain
20.	Phenytoin	Psychosis
21.	Ciprofloxacin	Rashes
22.	Phenytoin, Ranitidine and Diazepam	Superficial thrombophlebitis
23.	Whole blood transfusion	Shivering and rigors
24.	Nifedipine	Headache
25.	Metformin	GI Irritation
	Total	n= 27

DESCRIPTIONS:

Superficial Thrombophlebitis: Superficial thrombophlebitis is a common inflammatory-thrombotic disorder in which a thrombus develops in a vein located near the surface of the skin followed by the inflammation of superficial veins which is presents as a painful induration with erythema, often in a linear or branching configuration forming cords. Superficial thrombophlebitis is due to inflammation and/or thrombosis, and less commonly infection of the vein.

Psychosis: A severe mental disorder in which thought and emotions are so impaired that contact is lost with external reality. Psychosis with phenytoin use has earlier been reported only in the context of Vitamin B12 or folic acid deficiency. However, phenytoin toxicity can manifest as psychosis even in the absence of Vitamin deficiency. Management of psychotic symptoms with antipsychotics is not advised as it has been found to be unsuccessful. However, removal of phenytoin can lead to improvement in few days.

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Wheal and flare reaction: It includes swelling, produced by the release of serum into the tissues (***wheal***), and redness of the skin, resulting from the dilation of blood vessels (***flare***). Ranitidine is usually associated with a low incidence of adverse reactions and there are only few cases of immediate type hypersensitivity reactions to ranitidine. An IgE dependent mechanism was suggested for anaphylactic reactions to ranitidine, but also non-immunological mechanisms may be involved in immediate type reactions to ranitidine.

Myalgia: It is the pain in a muscle or group of muscles. **Myalgia**, or **muscle pain**, is a symptom of many diseases and disorders. The most common **causes** are the overuse or over-stretching of a muscle or group of muscles. **Myalgia** without a traumatic history is often due to viral infections. The percentages of patients suffering myalgia due to atorvastatin have been calculated and was found to be 14.9% when compared to other statins and the same was foud to be 5.1% with fluvastatin, 10.9% with pravastatin, and 18.2% with simvastatin.

Being "Floxed"

Levofloxacin is one of a class of drugs called fluoroquinolones, some of the world's most commonly prescribed, valuable and safe antibiotics. Yet they are so widely prescribed that their side effects might have harmed hundreds of thousands of people. For decades, around the world regulatory agencies and the medical profession were unconvinced that a brief course of antibiotics could have such a devastating, long-term impact. Many of them describe a devastating and progressive condition, encompassing symptoms ranging from psychiatric and sensory disturbances to problems with muscles, tendons and nerves that continue after people have stopped taking the drugs. They call it being 'floxed'.
Fluoroquinolone toxicity, provides a compelling example of an emerging understanding that antibiotics don't just harm microbes but can severely damage human cells, too. Until recently, investigations into the side effects of antibiotics have focused on how the drugs disrupt the human microbiome, "Antibiotics are also disrupting our cells, and in pretty hefty ways,"

But after persistent campaigning by patient groups, attitudes began to change in 2008, when the US Food and Drug Administration (FDA) announced the first of what would be a series of strong alerts about the side effects of fluoroquinolone drugs, including tendon rupture and irreversible nerve damage. In 2016, the agency accepted the existence of a potentially permanent syndrome that it calls fluoroquinolone-associated disability (FQAD), and recommended that the drugs be reserved for serious infections. That move has triggered other regulatory agencies to reassess the antibiotics: Health Canada warned doctors of rare cases of persistent or disabling side effects in January 2017, and the European Medicines Agency (EMA) is expected to publish the results of a safety review this year, after a public hearing planned for June.
Despite numerous warnings and side-effects, physicians still deeply rely on fluoroquinolones even for the minor ailments. These effects can be minimised by minimising the prescriptions of fluoroquinolones with alternative antibiotics and require more support in reporting ADR's of fluoroquinolones and sensitising the health care professionals.

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1. https://www.nature.com/articles/d41586-018-03267-5
2. Cohen, J. S. Ann. Pharmacother. 35, 1540–1547 (2001).
3. Tennyson, L. E. & Averch, T. D. Urology Pract. 4, 383–387 (2016).
4. Gao, Z., Chen, Y. & Guan, M.-X. J. Otol. 12, 1–8 (2017).
5. Kalghatgi, S. et al. Sci. Transl. Med. 5, 192ra85 (2013).
6. Nadanaciva, S. et al. Biomol. Screen. 15, 937–948 (2010).

April
To
June 2018

Drug Profile: PLAZOMICIN

Class:

Novel Amino-glycoside antibiotic

Indication: Treatment of patients 18 years of age or older with Complicated Urinary Tract Infections (cUTI) including Pyelonephritis.

Mechanism of Action:
Plazomicin is an aminoglycoside that acts by binding to bacterial 30S ribosomal subunit, thereby inhibiting protein synthesis.

Dosage form and Administration:
Plazomicin is available as injection of 500mg (50mg/mL) single-dose vial. Plazomicin can be diluted with 0.9% NaCl or lactated Ringer injection before injection. Normal adult dose is 15 mg/kg every 24 hours by intravenous (IV) infusion over 30 minutes. Recommended duration of treatment is 4 to 7 days for cUTI, including pyelonephritis

Dosing in Renal impairment: As per the manufacturer's labelling, if Clcr is ≥60 - ≤90 ml/min, drug can be given as 15mg/kg every 24 hours, if Clcr is ≥30 - ≤60 ml/min, drug can be given as 10mg/kg every 24 hours and if Clcr is ≥15 - ≤30 ml/min, drug can be given as 10mg/kg every 48 hours.

Dosing in Hepatic impairment: As per the manufacturer's labelling, the pharmacokinetics of Plazomicin in patients with hepatic impairment is unknown

Pharmacokinetics:
Plazomicin is having a area under the curve (AUC) of 257 mcg·hr/mL (healthy subjects); 226 mcg·hr/mL (cUTI patients). The mean volume of distribution in healthy adults and cUTI patients is 17.9 (±4.8) and 30.8 (±12.1) L, respectively. The binding of plazomicin to human plasma proteins is approximately 20%.

Plazomicin does not appear to be metabolized to any appreciable extent. Clearance is 4.5 L/hr (healthy subjects) and 5.1 L/hr (cUTIs). Elimination half life in healthy subjects was found to be approximately 3.5 hours.

About 97.5% of the dose administered was recovered in the urine as unchanged form.

Adverse Reactions:
Decreased renal function (3.6%), Diarrhea (2.3%), Hypertension (2.3%), Treatment-associated ototoxicity (2.2%), Headache (1.3%), Nausea (1.3%), Vomiting (1.3%), Hypotension (1%). Some of the adverse effects without frequency are, Constipation, Gastritis, Alanine aminotransferase increased, Hypokalemia, Dizziness, Hematuria, Dyspnoea.

Contraindications:
Pregnancy (Category X)-Studies in animals have shown evidence of foetal abnormalities and use is contraindicated in women who are or may become pregnant.

Drug is contra-indicated in patients with a history of amino-glycoside allergy.

Precautions:
Considering the adverse effects, patients should be periodically monitored for Kidney functions. Risk of nephrotoxicity is greater in patients with impaired renal function, elderly patients, and those receiving concomitant nephrotoxic medication

Ototoxicity, manifested as hearing loss, tinnitus, and/or vertigo, has been reported. Symptoms of aminoglycoside-associated ototoxicity may be irreversible and may not become evident until after completion of therapy

Aminoglycosides have been associated with neuromuscular blockade. During therapy, patients should be monitored for adverse reactions associated with neuromuscular blockade, particularly patients with underlying neuromuscular disorders.

Drug Interactions:
None Reported till date

Storage: Drug is available as single use vial and it should be stored in a refrigerator at 2^0C -8^0C.

Reference:

1. https://www.zemdri.com/
2. Galani, Irene. (2014). Plazomicin. Aminoglycoside antibiotic. Drugs of the Future. 39. 25.
3. https://www.accessdata.fda.gov/drugsatfda_docs/label/2018/210303Orig1s000lbl.pdf

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PHENYTOIN INDUCED MYELOSUPPRESSION IN AN EPILEPSY PATIENT

Epilepsy is a chronic medical condition, usually resulting in unpredictable, unprovoked recurrent seizures that affect a variety of mental and physical functions, it is one of the most common neurological diseases. The annual incidence of epilepsy has been estimated at 50 per 100,000 with a prevalence of 5 to 10 per 1,000 people. Myelosuppression is a common and anticipated adverse effect of cytotoxic chemotherapy but rare idiosyncratic effect with any other drug. Myelosuppression is potentially life threatening because of the infection and bleeding complications of neutropenia and thrombocytopenia. This case describes phenytoin induced myelosuppression in a male patient and treatment strategies followed in the secondary care public hospital, Udhagamandalam

CASE:

A 25 year old male patient was admitted in the Intensive care unit with chief complaints of seizure disorder, fever and abdominal pain. His past medical and medication history is significant for seizure disorder since past 10 years and he is on Tablet. Sodium Valproate-200mg thrice a day and Tablet. Phenytoin-100mg thrice a day. During the admission, the patient vitals were found to be normal and his laboratory parameters showed decreased White Blood cells (1.0 x 10^3 cells/mm^3), Platelets (72 x 10^3/mm^3), Haemoglobin (5.2gms%) and he was treated with Intravenous fluids like Dextrose Normal Saline (1 pint), Ringer Lactate (1 pint 100ml/hr), Tablet. Paracetamol 500mg thrice a day, Injection Phenytoin-600mg in Normal saline IV followed by Injection Phenytoin-100mg IV thrice a day, Injection Rantac-50mg IV twice a day, Tablet. Sodium Valproate 200mg thrice a day, and Injection Vitamin B-complex-once a day.

On the next day, the patient had no new complaints but his urine output was slightly decreased and same drugs was continued. On the following days, there was an abrupt decrease in the hemogram parameters like platelet (50 x 10^3/mm^3)and haemoglobin (3.8gms%) due to the phenytoin toxicity. The dose of phenytoin was reduced to 100mg once daily and other drugs was continued. Blood transfusion was done to the patient and phenytoin drug was discontinued. The patient was stabilised and discharged.

Conclusion:

The myelosuppression caused by phenytoin can be treated by administering Intravenous Immune globulin-1g/kg and hemogram should be monitored every three days once. The patient should be considered for monotherapy of anti-epileptics or combination with newer anti-epileptics like Levetiracetam 250mg once daily. Patients on Phenytoin should be monitored for toxicities, thus the adverse drug reactions can be prevented.

Reference:

1. Carey PJ. Drug-induced myelosuppression : Diagnosis and Management Article in Drug Safety 26(10):691-706

2. Karthikeyan.M, Ahmed Aziz Khan. Therapeutic Applications of Phenytoin. Asian Journal of Pharmaceutical and Clinical Research. 2009; 2(3): 1-14.

April To June 2018

REPORT

EVENT CORNER

Conferences Attended by Faculty

Mr. Vishwas HN attended a "Retreat for Pharmacy students" Organised by JSS Mahavidyapeeta Mysuru at Sri SutturKshetra from 3rd to 5th April 2018

MS. M. Deepalakshmi, Dr. D. Raja and **Dr. G.K.Sadagoban** attended a workshop on SAS Clinical Data Management Introduction organised by Epoch – Research Institute, Bangalore at JSS College of Pharmacy, Ooty on 11th April 2018

Ms. Roopa BS attended a International seminar on "Oregon Society of Health System Pharmacist"Organised by Oregon Society of Health System Pharmacist, Oregon, USA at Salishan Resort, Gleneden Beach, Oregon on 16th April 2018

Dr. G.K.Sadagoban attended a International Online course on Uppsala Monitoring Centre-Signal detection and causality assessment Organised by Uppsala Monitoring Centre, Sweden on 16th April 2018

Dr. Khayati Moudgil attended a two days National conference Indian Congress of Pharmacy Practice organised by IACP, at Novotel Hyderabad Convention Centre, Hyderabad, from 28-29th April 2018

Ms. Roopa BS attended a International conference on FIP Pharmbridge Program Organised by FIP Pharmabridge Training Program at Pacific University, Oregon from 20 April to 11 May 2018

Dr. Aneena Suresh and **Dr. Keerthana C** attended a Continuing pharmacy education on "ROLE OF PHARMACIST IN PATIENT CARE" at PSG college of Pharmacy, Coimbatore on 22nd June 2018

Dr. G K Sadagoban attended a two days workshop on "Basic Pharmacokinetics and R Language for data management & Visualization" organised by PAGIN at PSGIMSR- Coimbatore from 25-26 June 2018

Dr. G K Sadagoban attended a two days workshop on "Population Pharmacokinetics, Pharmacodynamics Models & Applications" organised by PAGIN at PSGIMSR- Coimbatore from 27-29 June 2018

Papers Presented by Faculty

Dr. Khayati Moudgil presented a paper on "Surveillance and reporting of adverse drug reactions in a secondary care hospital" at Indian Congress of Pharmacy Practice organised by IACP, at Novotel Hyderabad Convention Centre, Hyderabad from 28-29th April 2018

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Faculty as Resource Persons

Dr.D.Raja delivered a talk on "WSW:ShE Workshop Scientific Writing: Sharing Experience Scientific Writing":2 weeks training program for PG students, Department of Pharmacology, JSS College of Pharmacy, Ooty on 23rd June 2018

Collaborations/Linkages

Dept. of Pharmacy Practice signed an official MOU with GKNM Hospital, Coimbatore on 7th June 2018 for the Training of Internship students

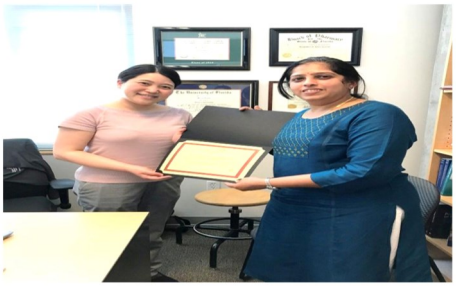
Faculty External Recognition

Dr. D Raja gave an Interview at AIR Ooty, FM 101.8 About Drug Information Centre On 8th April 2018

Research Awards / Recognitions

Dr. Khayati Moudgil awarded with Best Paper award, for the title "Surveillance and reporting of adverse drug reactions in a secondary care hospital" at Indian Congress of Pharmacy Practice organised by IACP, at Novotel Hyderabad Convention Centre, Hyderabad from 28-29th April 2018

Ms Roopa BS Selected for FIP Pharmabridge training based on academic and professional achievements and qualifications FIP Pharmabridge, Netherlands training program at Pacific University School of Pharmacy between 20 April to 11 May 2018



Recently approved drugs by FDA

S.N	Drug	Indication	Date of approval
1.	Tavalisse (Fostamatinib)	To treat thrombocytopenia in adult patients with persistent or chronic immune thrombocytopenia (ITP)	4/17/2018
2.	Crysvita (burosumab– twza)	To treat adults and children ages 1 year and older with x-linked hypophosphatemia (XLH), a rare, inherited form of rickets	4/17/2018
3.	Akynzeo (fosnetupitant, palanosetran)	To prevent acute and delayed nausea and vomiting associated with initial and repeat courses of highly emetogenic cancer chemotherapy	4/19/2018
4.	Lucemyra (lofexidine hydrochloride)	For the non-opioid treatment for management of opioid withdrawal symptoms in adults	5/16/2018
5.	Aimovig (erenumab-aooe)	For the preventive treatment for migraine	5/17/2018
6.	Lokelma (sodium zirconium cyclosilicate)	To treat hyperkalemia	5/18/2018
7.	Doptelet (avatrombopag)	To treat low blood platelet count (thrombocytopenia) in adults with chronic liver disease who are scheduled to undergo a medical or dental procedure	5/21/2018
8.	Palynziq (pegvaliase-pqpz)	To treat adults with a rare and serious genetic disease known as phenylketonuria (PKU)	5/24/2018
9.	Olumiant (baricitinib)	To treat moderately to severely active rheumatoid arthritis	5/31/2018
10.	Moxidectin (moxidectin)	To treat onchocerciasis due to Onchocerca volvulus in patients aged 12 years and older	6/13/2018
11.	Epidioloex (cannabidiol)	To treat rare, severe forms of epilepsy	6/25/2018
12.	Zemdri (plazomicin)	To treat adults with complicated urinary tract infections	6/25/2018
13.	Mektovi (binimetinib)	To treat unresectable or metastatic melanoma	6/27/2018
14.	Braftovi (encorafenib)	To treat unresectable or metastatic melanoma	6/27/2018

REFERENCE: https://www.fda.gov/Drugs/DevelopmentApprovalProcess/DrugInnovation/ucm592464.htm

For clarifications/ feedback, write to:
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